



# Evergreen Fleets Standard Recommendations for Public Fleets

Evergreen Fleets Advisory Committee

August 2008



Evergreen Fleets Initiative

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# Introduction

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Serious commitment to address global warming in the Puget Sound region must powerfully address emissions from the transportation sector, which represents approximately 50 percent of all regional greenhouse gas emissions. Public fleets in particular have a responsibility to take the lead, especially those operating in cities and counties that have formally pledged or adopted resolutions to achieve significant greenhouse gas reductions.

With this goal in mind, the Puget Sound Clean Air Agency and Puget Sound Clean Cities Coalition launched the Evergreen Fleets Initiative, an effort to engage public fleets in voluntary actions to reduce vehicle emissions.

To inform the best approach for the Initiative, an Evergreen Fleets Advisory Committee was assembled, comprised of participants representing city and county jurisdictions across the Puget Sound region. The Advisory Committee was tasked with identifying the attributes that define a “green fleet” and recommending a suite of policies and criteria that can be used to standardize these attributes and help fleets achieve adopt more environmentally-friendly operations.

This report summarizes their recommendations for what an Evergreen Fleets Standard should entail. They propose a voluntary program that is conceptually similar to the Leadership in Energy and Environmental Design (LEED) standard for green buildings, requiring fleets to meet different levels of environmental performance to become certified as a green – or *Evergreen* – fleet.

The recommended actions are just a first step in developing the Evergreen Fleets Initiative. The Clean Air Agency and the Clean Cities Coalition will review the committee’s recommendations and develop a corresponding reporting and certification system. The system will include tools to assist fleets in evaluating their pollutant emissions, developing reduction strategies, and ultimately reduce air pollution in the region by meeting or exceeding the performance standard. The Clean Air Agency and the Coalition expect to officially launch the program in early 2009.

## *About the Initiative*

The Evergreen Fleets Initiative is sponsored by the Puget Sound Clean Air Agency and the Puget Sound Clean Cities Coalition. The Puget Sound Clean Air Agency serves the people of King, Kitsap, Pierce and Snohomish counties, working to clean the air and protect the climate through education, incentives and enforcement. The Puget Sound Clean Cities Coalition is a voluntary, public/private partnership that works to advance the region's environmental and public health, energy security and economic development by promoting policies and practices that reduce petroleum consumption in transportation.

# Key Components of the Evergreen Fleet Standard

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## I. Description of Scoring System

- Up to 100 points will be awarded for achievement in three green fleet categories: (1) reporting data, (2) implementing strategies, and (3) achieving greenhouse gas reductions.
- The points earned will land a fleet in one of three levels of “greenness” – Silver, Gold, or Platinum.
  - A. *To achieve the silver level of the standard:* A fleet will have to implement nearly all of the green fleet strategies and report data on the fleet.
  - B. *To achieve the gold level of the standard:* A fleet will have to implement nearly all of the green fleet strategies, report data, and show greenhouse gas (GHG) emission reductions from its fleet operations. The reductions may not be up to the level required to meet Washington State’s goals.
  - C. *To achieve the platinum level of the standard:* A fleet will have to implement nearly all of the green fleet strategies, report data, and show GHG emission reductions at or above the level required to meet Washington State’s goals.

## II. Scoring Category I: Fleet Classification System and Reporting Requirements

- A. Collect and report baseline fuel use data.
- B. Collect and report fuel use data annually.
- C. Collect and report baseline fleet utilization (miles or hours) data.
- D. Collect and report fleet utilization (miles or hours) data annually.

## III. Scoring Category II: Fleet Strategies

### ***Policy Communication and Training Strategies***

- 1) Develop a Green Fleet Work Plan or Strategy Document
- 2) Obtain top-level approval of green fleet effort (executive order, policy document, resolution or something similar)
- 3) Communicate top-level approval of green fleet effort
- 4) Implement an idle reduction policy or program
- 5) Conduct training on fuel-efficient driving practices
- 6) Implement an incentive or reward program around fuel use and/or vehicle/equipment utilization
- 7) Advances in green fleet management (for bonus points)

### ***Vehicle and Equipment Purchasing Strategies***

- 8) Implement a “right-size” requirement or procedure for fleet purchases
- 9) Implement a green fleet purchasing program.
- 10) Incorporate green fleet provisions into bid criteria

### ***Vehicle and Equipment Use / Fuel Use Strategies***

- 11) Implement a green fuel procurement strategy (for example, identify availability of green fuels at nearby outlets, look for a state contract or other joint purchasing opportunity, etc.)
- 12) Implement a procedure to ensure flex-fuel, bi-fuel and/or dual-fuel vehicles are fueled with green fuel to the greatest extent possible
- 13) Implement a data management system to track fuel consumption and vehicle/equipment use
- 14) Implement fleet use efficiency measures, e.g., trip/route planning, dispatch system, idle shutdown timers, vehicle telematics, etc.
- 15) Implement a diesel retrofit program

***Vehicle & Equipment Maintenance Strategies***

- 16) Implement a preventive maintenance program
- 17) Have a recover, reduce, reuse program for maintenance products and processes
- 18) Utilize environmentally friendly products in vehicle maintenance

**IV. Scoring Category III: Achieving Greenhouse Gas Reductions**

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# Scoring System Structure and Rationale

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The green fleet standard has three categories for scoring: (1) reporting data on fleet makeup and utilization; (2) implementing green fleet strategies; and (3) achieving GHG reductions. Fleets can receive up to 100 points total based on how well they do with each category. The number of points earned place a fleet in one of three levels of “greenness:” Silver (71 to 80 total points); Gold (81 to 90 total points); or Platinum (91 to 100 total points). An overview of what it takes to reach each level is provided below. Further explanation of the point system and the rationale behind it follows this overview.

## Award levels

### Silver (71 to 80 points)

- fleet implements Green Fleet Strategies
- fleet reports the appropriate data

### Gold (81 to 90 points)

- fleet implements nearly all of the Green Fleet Strategies
- fleet reports the appropriate data
- fleet achieves GHG reductions but not to the level required to attain Washington State Legislature’s target (see below for explanation)

### Platinum (91 to 100 points)

- fleet implements nearly all of the Green Fleet Strategies
- fleet reports the appropriate data
- fleet meets or exceeds the level of GHG reduction necessary to be on a path to meet Washington State Legislature’s target (see below for explanation)

The Advisory Committee intended this scoring system to both:

- recognize and reward significant steps organizations take to green their fleets, regardless of the effect on GHG emission levels, and
- reserve the highest awards for only those organizations that achieve real GHG reductions from their fleet operations.

Thus, all fleets that put significant effort into greening their fleet can achieve recognition under the standard. To achieve the highest levels and receive the most recognition, though, a fleet must demonstrate GHG reductions.

## Scoring System Rationale

The Advisory Committee used the goals set by the State Legislature and the Governor as the guidepost for the design of the GHG reduction targets required under the standard. The State has set a goal of reducing GHGs to 1990 levels by 2020.

The points awarded for implementation of the strategies was based on a survey of the Advisory Committee members. Respondents gave each strategy an “importance rating” on a scale of 1 to 5 and identified those strategies that they considered to be mandatory or optional for a fleet to be considered green. Furthermore, the Committee indicated whether they felt that successful implementation of the strategy should result in an award of all the possible points or whether varying amounts of points should be awarded based on the level of effort expended on implementation of the strategy. In total, 84 points are available from the implementation of green fleet strategies. This includes 10 points that are available as bonus points for fleets that develop new ways of greening their fleets that were not envisioned when the standard was developed.

The scoring system also awards a small number of points for reporting various pieces of data. Reporting data gets a fleet six points. Combined with the maximum number of points from implementation of the green fleet strategies, this means a fleet could achieve a maximum total of 90 points from implementing strategies and reporting data. In order for the higher levels of the standards to be reserved for only those fleets that show GHG reductions, however, the number of points a fleet can receive from implementing strategies and reporting data is capped at 80. In other words, a fleet can reach the silver level of the standard, but no higher, by implementing strategies and reporting data. Gold and platinum levels are reserved for those fleets that show documented GHG reductions from their fleets.

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## Summary Table: Scoring System

Strategy	Points	All or Nothing?
1. Develop a Green Fleet Work Plan or Strategy Document	5	Y
2. Obtain top-level approval of green fleet effort	5	Y
3. Communicate top-level approval of green fleet effort	3	Y
4. Implement an idle reduction policy or program	5	N
5. Conduct training on fuel-efficient driving practices	3	Y
6. Implement an incentive or reward program around fuel use and/or utilization	1	Y
7. Advances in green fleet management (for bonus points)	10	N
8. Implement a "right-size" requirement or procedure	5	N
9. Implement a green fleet purchasing program	10	N
10. Incorporate green fleet provisions into bid criteria	1	Y
11. Implement an alternative fuels procurement strategy	5	N
12. Implement a method to ensure flex-fuel, bi-fuel and/or dual-fuel vehicles are fueled with green fuel to the greatest extent possible	5	Y
13. Implement data management system to track fuel consumption and vehicle and equipment use	5	Y
14. Implement fleet efficiency measures	5	N
15. Implement a diesel retrofit strategy	5	N
16. Implement a preventative maintenance program	5	Y
17. Implement a recover, reduce, reuse program for maintenance products and processes	3	Y
18. Utilize environmentally-friendly products in vehicle maintenance	3	Y
<b>Subtotal</b>	<b>84</b>	

	points given	varies by strategy (see above)	
<b>Implement strategies</b>	<i>max possible points with all bonus points</i>	84	
	<i>max possible points with no bonus points</i>	74	
<b>Report data</b>	points given	6	
	<i>max possible points for a fleet that reports data, implements strategies and gets all bonus points for strategies</i>	<b>90, but capped at 80</b>	<b>Silver level</b>
	<i>max possible points for a fleet that reports data, implements strategies and gets no bonus points for strategies</i>	<b>80</b>	<b>Silver level</b>
<b>Achieve lesser GHG reduction goal</b>	points given	10	
	<i>max possible points for a fleet that achieves this goal, implements strategies and reports data</i>	<b>90</b>	<b>Gold level</b>
<b>Achieve greater GHG reduction goal</b>	points given	20	
	<i>max possible points for a fleet that achieves this goal, implements strategies and reports data</i>	<b>100</b>	<b>Platinum level</b>
<b>Scoring System Levels</b>			
	<b>Platinum</b>	<b>91-100</b>	
	<b>Gold</b>	<b>81-90</b>	
	<b>Silver</b>	<b>71-80</b>	

### Explanation of Point Ranges for Strategies where Ranges are Possible

The following strategies will be scored in a manner such that fleets that do extensive work implementing the strategy receive more points than those fleets that do less:

- Strategy 4. Implement an idle reduction policy or program
- Strategy 7. Advances in green fleet management (for bonus points)
- Strategy 8. Implement a “right-size” requirement or procedure for fleet purchases
- Strategy 9. Implement a green fleet purchasing program
- Strategy 11. Implement an alternative fuels procurement strategy
- Strategy 14. Implement fleet efficiency measures
- Strategy 15. Implement a diesel retrofit program

The table below provides guidance on the types of things that will qualify a fleet for the different level of points. This table is just an example and does not describe a hard-and-fast rule that the verification agency will follow when scoring a fleet's performance. The verification agency has leeway to determine how many points a fleet deserves. If an organization has questions on this issue, they should contact the verification agency.

<b>Strategy</b>	<b>Example of what might get minimum points (1 pt)</b>	<b>Example of what might get maximum points (varies)</b>
4. Implement an idle reduction policy or program	A fleet has an idle reduction policy that is posted in an employee break room.	A fleet has a policy, has signs posted in all appropriate locations, has done training of its employees on the policy and has done follow-up reviews with vehicle and equipment operators.
7. Advances in green fleet management (for bonus points)	It is hard to describe examples as these are things that have not been thought of yet. Points will be at the discretion of the verification agency.	
8. Implement a "right-size" requirement or procedure for fleet purchases	A fleet has a check box on its request form where an employee has to check that the vehicle being ordered is right for the job.	All purchases are reviewed and approved by a fleet expert who understands the intended applications to be sure that only the right size vehicles are being purchased.
9. Implement a green fleet purchasing program	A fleet with 100 compacts purchases one hybrid vehicle per year.	A fleet purchases only the vehicles listed at the top two of EPA's Green Vehicle Guide for each vehicle class.
11. Implement a green fuel procurement strategy	A fleet has a policy statement posted in a breakroom requesting employees use a green fuel when it is available and appropriate.	A fleet has a policy statement that is distributed to all employees, has maps of available green fuel pumps, has lists of vehicles and equipment that can use each green fuel, and conducts training and outreach to appropriate employees to encourage green fuel use. A fleet has a system to check and see when a green fuel could but is not being used and follows up on these situations.
14. Implement fleet efficiency measures	A fleet uses idle reduction timers set to 10 minutes in some of its trucks that could use this technology.	A fleet uses idle reduction timers set to 3 minutes in all appropriate trucks. A fleet also uses a GPS system to facilitate route mapping, discourage unnecessary trips and reduce idling.
15. Implement a diesel retrofit program	A fleet has retrofitted some of its diesel vehicles and equipment with oxidation catalysts.	A fleet has retrofitted all of its diesel vehicles and equipment with the highest performing technology appropriate to the application.

# Scoring Category I:

## Fleet Classification System and Reporting Requirements

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A critical piece of the green fleet standard is the collection and sharing of data on fleet operations. The Advisory Committee developed the following list of vehicle and equipment classes for which Evergreen Fleets will collect data. These classifications are similar to those of other fleet classification and reporting systems. See Appendix F for a comparison of the classification systems.

### FLEET CLASSIFICATION CATEGORIES

- Automobiles
  - Compact & subcompact cars
  - Midsize cars
  - Full-size cars
- SUVs
  - Small SUVs (includes inline five and inline six cylinder engines)
  - Large SUVs
- Pickups
  - Small pickups
  - Large pickups
- Vans
  - Passenger vans (includes minivans)
  - Cargo vans
- Motorcycles, scooters and ATVs
- Straight trucks, work trucks, utility trucks, etc.
  - Medium-duty trucks
  - Heavy-duty trucks
- Buses
- Off-road and construction equipment
- Emergency services vehicle & equipment
- Other (please explain)

For each of these classes, fleets will be required to submit the following data on the annual utilization of the vehicles and equipment:

- Number of vehicles/pieces of equipment
- Number of miles driven or hours of operation, whichever is applicable
- Amount of fuel used, broken down by type of fuel (gasoline, petro-diesel, biodiesel, CNG, E85, electricity, hydrogen, LNG, propane and any other type)

In addition, fleets will have to report this data for its baseline year, whichever year that may be. Fleets will have to submit this information on an ongoing, annual basis to remain in good standing with the standard. This data, particularly the fuel use data, will be used to calculate the GHG emissions from the fleet and prove whether reductions have been made. A template of the reporting form that may be used as part of this standard is shown on the following page.

## EverGreen Fleet Standard Reporting Template

Vehicle Class	Total # of Vehicles or Pieces of Equipment	Total # of Miles Driven	Total # of Hours of Operation	Total Amount of Fuel Used									
				Gasoline (gal)	Petro-diesel (gal)	Biodiesel (gal)	CNG (GGE)	E85 (gal)	Electricity (kWh)	Hydrogen (GGE)	LNG (gal)	Propane (GGE)	Other
compact & subcompact cars													
midsize cars													
fullsize cars													
small SUVs													
large SUVs													
small pickups													
large pickups													
passenger vans (including minivans)													
cargo vans													
motorcycles, scooters and ATVs													
class 4 trucks													
class 5 trucks													
class 6 trucks													
class 7 trucks													
buses													
off-road and construction equipment													
emergency services vehicle & equipment													
other (please explain)													

1 - Fleet has to report blend level(s) with gallons reported

2, 3, 4, 5 - conversion factors will be provided

6 - Fleet has to provide an explanation of the type of fuel and units of measurement

"small SUVs" have engines smaller than 4.5L and are either a four cylinder or a V6, e.g., Escape, Vue, Highlander. Also includes inline 5 and 6 cylinder engines.

"large SUVs" have engines equal to or larger than 4.5L and are V8 or greater, e.g., Tahoe, Yukon, Grand Cherokee

"small pickups" corresponds to compact and 1/2-ton trucks

"large pickups" corresponds to 3/4-ton and larger trucks

"medium-duty straight trucks" corresponds to classes 3, 4 and 5

"heavy-duty straight trucks" corresponds to classes 6, 7 and 8

# Scoring Category II: Green Fleet Strategies

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## Strategy 1 Develop a Green Fleet Work Plan or Strategy Document

### Strategy Description

Develop a work plan or strategy document for greening the organization's fleet. The format of the plan is flexible, but should include a simple, clear statement of why and how the organization intends to reduce the environmental impact of its fleet.

### Strategy Design

Guidance on developing green fleet strategies can be found in the Puget Sound Green Fleets Guide, which is available at this website: <http://psgreenfleets.org/reduction-strategies/develop-a-plan>. The guide includes links to examples of other agencies' green fleets plan, as reference.

### Potential Costs

Staff time to develop the plan.

### Examples/Case Studies of Fleets that have used Strategy

See [psgreenfleets.org](http://psgreenfleets.org) for examples.

### Performance Measures or Metrics

The green fleet work plan or strategy document.

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## **Strategy 2**

### **Obtain top-level approval of green fleet effort**

#### **Strategy Description**

This strategy ensures that the top levels of the organization understand and support the green fleet policy or strategy set forth in Strategy 1. This will smooth implementation, particularly for the fleet manager, as it will demonstrate the project has the backing at the highest levels of the organization.

#### **Strategy Design**

Draft a policy statement or resolution summarizing the goals of the green fleet work outlined in Strategy 1 for review and approval by key decision-makers. Top-level support is important to the success of the green fleet effort.

#### **Potential Costs**

Personnel time involved with writing the policy statement or resolution and shepherding it through the top-level approval process.

#### **Additional Benefits**

Having top-level approval will give the fleet manager the evidence and backing he or she needs to convince others in the organization is important. It will make it at least a little easier for fleet managers to convince others to do things that they might not otherwise do.

#### **Examples/Case Studies of Fleets that have used Strategy**

See the model resolution provided in the Appendix. A resolution similar to this was signed by participating cities within King County at the September 2007 *Clean Vehicles Now!* conference.

#### **Key Uncertainties**

Will a fleet manager be able to get approval from the top level of the organization?

#### **Performance Measures or Metrics**

Signed document from a high level in the organization expressing support for the green fleet work. This could take the form of an executive order, policy document, resolution or something similar.

## **Strategy 3**

### **Communicate top-level approval of green fleet effort**

#### **Strategy Description**

This strategy ensures that the resolution approved in Strategy 2 is effectively communicated to everyone working at all levels of each participating organization so they understand the green fleet work has backing at the highest levels of the organization and deserves their support.

#### **Strategy Design**

There are many approaches to communicating top-level support. A few suggestions include:

- Posting an announcement about the resolution on an internal website.
- Adding an announcement and copy of the resolution to the appropriate vehicle manual.
- Announcing the resolution at staff meeting(s).
- Issuing an email to all-staff announcing the new resolution and what it means.
- Dashboard sticker for fleet vehicles and equipment.

#### **Potential Costs**

Personnel time and possibly some material expenses if the fleet decides to use printed materials to disseminate the message.

#### **Additional Benefits**

Top-level buy-in of the green fleet effort gives it credibility and visibility within the organization, which will make it easier for fleet managers to implement changes.

#### **Examples/Case Studies of Fleets that have used Strategy**

#### **Key Uncertainties**

How much time will the fleet manager and other staff have to put toward communicating the resolution?

#### **Performance Measures or Metrics**

How was the resolution broadcasted to the entire organization in a timely and personalized manner? Keep a copy of whatever distribution means was used for reporting to the standard verification agency.

## **Strategy 4**

### **Implement an idle reduction policy or program**

#### **Strategy Description**

An idle reduction policy or program sets specific limits or guidelines on the amount of time that a vehicle's motor may be left unnecessarily idling. The strategy has two distinct components:

1. Develop a policy
2. Conduct an education/enforcement program

#### **Strategy Design**

##### ***Policy development***

At a minimum, the idle reduction policy should describe the reasons for not idling (unnecessary, waste of fuel, health impacts) and how the organization intends to restrict idling. Restrictions could include a total ban on idling in some areas, or setting a maximum time that fleet vehicles may idle in almost any area (3 minutes is often used). The policy should also describe any exemptions where idling in excess of the usual maximum time will be allowed. Once approved, the policy document should be communicated to all staff, in ways similar to the approaches employed in Strategy 3.

The steps a fleet manager could follow to develop an idle reduction policy might include:

- Getting buy-in from organization's leader and from employees.
- Conducting a survey of current and best practices.
- Reviewing sample policies.
- Drafting the policy.
- Following the prescribed organizational procedures for departmental and organizational review.
- Incorporating review and feedback into document.
- Arranging for approval and codification of policy.
- Communicating the new idle reduction policy to the entire organization.

##### ***Education & enforcement program***

The steps a fleet manager could follow to implement the education/enforcement program component of this strategy could include:

- Getting buy-in from organization's leader and from employees.
- Identifying resource personnel.
- Conducting an organizational scan to determine current practices, profiles and consumption patterns.
- Developing a budget.
- Conducting a best practices review and survey.
- Designing a customized program – This will include determining the nature and scope of the training.
- Choosing instructional media.
- Determining criteria for participation (who should be trained).
- Developing participant incentive program.
- Delivering training.

- Evaluating the program– includes feedback from participants and system-wide performance evaluation.
- Providing feedback, reinforcement and continued motivation/incentives.
- Conducting follow-up and ongoing training.

Infrastructure needs will vary depending on the length and sophistication of the program an organization chooses to pursue. The size of the fleet will affect the amount of time and space required. Technology solution to limit idling can include engine controls, such as idle shutdown timers, and vehicle telemetry systems. Low-tech controls, such as supervisor observations or employee complaints, can also be used to track and limit idling.

### **Potential Costs**

The costs of this strategy will depend on the extent of the program. If this is just a policy statement, costs should be minimal. If a full campaign with outreach materials is developed, this will involve more costs.

### **Additional Benefits**

Reducing idling has environmental, economic and health benefits. Reducing idling reduces emissions, reduces wasted fuel (thus saving money!) and reduces health risks, especially for those who work and/or live near where the vehicles idle.

### **Examples/Case Studies of Fleets that have used Strategy**

A number of fleets have already implemented anti-idling policies and/or programs, which could serve as templates. Both King and Snohomish County, for example, have robust idle reduction policies. King County has also implemented a training program on its policy. The Puget Sound Clean Air Agency hosts an online clearinghouse of idle-reduction program information which can be found at: <http://www.pscleanair.org/actions/vehicles/noidle.aspx>. The Clean Air Agency also has No Idle Zone signs and other supporting materials available for fleets at minimal or no cost.

### **Key Uncertainties**

N/A

### **Performance Measures or Metrics**

The idle-reduction policy or other documentation of the idle reduction program. There may be outreach materials that a fleet can provide or pictures could be provided of anti-idling signs that have been hung in appropriate locations around the organization. Documentation of the training program could include course outlines, training materials, class attendance records, participant's feedback, photos/videos of sessions and on-site interviews with participants. The effectiveness of the program would be evaluated through before and after fuel consumption records both at the departmental and individual levels.

## **Strategy 5**

### **Conduct training on fuel-efficient driving practices**

#### **Strategy Description**

As the primary users of the vehicles and equipment, drivers and operators are critical to the success of any effort to reduce fuel consumption and greenhouse gas emissions in any fleet. This strategy involves providing training and education to drivers and operators on ways they can help the fleet achieve operational efficiencies outlined in the green fleet plan.

#### **Strategy Design**

The training program could employ any number of instructional methods, such as classroom instruction, PowerPoint presentations, videos, paper and pencil exercises, motivational techniques, driving exercises or real-time feedback on fuel consumption.

Course content could include

- Knowing your Vehicle – Vehicle Care, Maintenance and Inspection
- Best Driving Practices
- Defensive Driving Techniques and Fuel Efficiency
- Evaluation/On Road Exercise
- Follow-up Evaluation and Reinforcement (e.g.: at 3 and then 6 month intervals)

Possible steps a fleet manager could follow to implement this strategy include:

- Getting buy-in from organization's leader and from employees.
- Identifying resource personnel.
- Conducting an organizational scan to determine current practices, profiles and consumption patterns.
- Developing a budget.
- Conducting a literature review and best practices survey.
- Designing a customized program.
- Choosing the appropriate instructional media.
- Determining the criteria for participation.
- Developing a participant incentive program.
- Delivering the training.
- Evaluating the training – includes feedback from participants and system-wide performance evaluation.
- Providing feedback, reinforcement and continued motivation/incentives.
- Conducting follow-up and ongoing training.

Infrastructure needs will vary depending on the type of program an organization chooses to pursue, but might include:

- Laptop and projector for PowerPoint and video presentations
- On-board monitoring equipment.
- Driving simulator equipment.
- Dedicated facility for installation of simulator equipment.
- Test driving range.
- Dedicated vehicles for driver training.

The size of the fleet will affect the amount of time, space and equipment that will be required. It may also influence whether organizations choose to conduct one-on-one type on-road training or utilize less labor intensive methods such as videos and simulators.

**Potential Costs:**

Costs will vary depending on the nature of the program. Fleet managers could avoid additional budgetary allocations by using existing personnel to conduct the training.

**Additional Benefits:**

This strategy has the potential to save money, reduce harmful emissions and improve safety.

**Examples/Case Studies of Fleets that have used strategy:**

King County has a fuel-efficient driver education program which could be used as an example. Other examples include:

- EPA SmartWay
- Cleaner Cars – Funded by EPA
- Green Workplace Program – Environmental Youth Alliance (Canada)
- SmartDriver Program – Canadian Government
- Safe and Fuel Efficient Driver Training – Momenta UK (Drivers improved by an average of 10 percent in this program)

**Key Uncertainties:**

N/A

**Performance Measures or Metrics:**

- Implementation would be verified through course outlines, training materials and equipment, training class attendance records, participant's feedback, photos/videos of sessions in progress and on-site interviews with participants.
- The effectiveness of the program would be evaluated through before and after fuel consumption records both at the departmental and individual levels.

## **Strategy 6**

### **Implement an incentive or reward program around fuel use and/or vehicle/equipment utilization**

#### **Strategy Description**

This strategy seeks to encourage fuel savings by offering incentives or rewards to fleet users and managers. It also provides a recognition opportunity for, and sets as an example, those who have significantly reduced their fuel consumption.

#### **Strategy Design**

This strategy should be tailored to the personality of each organization, providing an appropriately-enticing incentive for employees to reduce their fuel consumption. It can also serve to recognize high performers and encourage staff to come up with new and innovative ways to reduce the fleet's environmental impact.

Some considerations for an incentive or reward program include:

- Decide on a timeline for the incentive program: should it be monthly, quarterly, annual?
- Determine the behavior to be incentivized: reduced fuel use? Fewer miles driven? Both?
- Determine how achievement will be measured. Will it be more effective to set an organization-wide target, or a percentage reduction goal over time, or other criteria?
- Determine an appropriate incentive. What will motivate employees to participate?

#### **Potential Costs**

Dependent on what the organization decides to use as rewards.

#### **Examples/Case Studies of Fleets that have used Strategy**

King County has implemented programs similar to this. They could be contacted for information on their program.

#### **Key Uncertainties**

How would this program be received? Some organizations will want to be careful that the program is fair and equitable.

#### **Performance Measures or Metrics**

Any documentation of the incentive program.

## **Strategy 7**

### **Advances in green fleet management (for bonus points)**

#### **Strategy Description**

This strategy rewards organizations that develop new and innovative ways to reduce the environmental impact of their fleets. This may mean improvements in vehicle/equipment purchasing, use, maintenance or anything related to fleet management that results in a demonstrable reduction of environmental impact. This strategy is not required of any fleet; it can, however, result in bonus points in the scoring system. See the Scoring System section of this document for more information on the points.

#### **Strategy Design**

#### **Potential Costs**

#### **Additional Benefits**

#### **Examples/Case Studies of Fleets that have used strategy**

#### **Key Uncertainties**

#### **Performance Measures or Metrics**

This strategy is non-specific so these sections are virtually impossible to complete at this time. The idea is that a fleet comes up with a new way of doing something or a new idea that has not been thought of yet. Because these are new ideas, it is not possible to predict how this idea would be implemented what barriers might be encountered, etc.

It will be up to the entity that verifies performance against the standard to determine whether this new idea warrants bonus points in the standard and, if so, how many points. It will also be up to this entity to determine a performance measure to determine whether or not the fleet qualifies for points.

Some examples of cutting-edge fleet management are as follows:

- working to develop and/or test a prototype of a green vehicle
- purchasing pre-production vehicles and equipment
- organizing a consortium of organizations to get grant funding for advanced vehicles
- use of bio-based lube oils

Again, the points that are awarded for advances in green fleet management will be up to the discretion of the verification agency. The fleet applying for certification should submit as much information as possible for the agency to evaluate the merits of the advance and why it deserves bonus points.

## Strategy 8

### Implement a “right-size” requirement or procedure for fleet purchases

#### Strategy Description

This strategy aims to ensure fleets only buy the most appropriate size and class of vehicle for the intended application, after assessing whether a vehicle is in fact the best option for that purpose.

#### Strategy Design

An important prerequisite to this strategy is taking an inventory of the fleet, its purpose, and current usage patterns. Does the fleet currently serve its intended purpose as efficiently as possible? If not, why not? Develop a requirement or procedure for new procurement requests, which assesses: a) whether new vehicles/equipment are really necessary; and if so, b) the most appropriate size/class for the job.

#### Potential Costs

Staff time to design, implement and verify the requirement or procedure.

#### Additional Benefits

In cases where this strategy reduces the size of a vehicle that is purchased, the fleet will usually save money as well given that smaller vehicles are almost always cheaper than larger ones.

#### Examples/Case Studies of Fleets that have used Strategy

#### Key Uncertainties

How will the policy be enforced? Is there a strong enough authority to oversee compliance with the right-size purchasing requirement?

#### Potential emission reductions

Eliminating excess vehicles or replacing older models with newer, more efficient ones stand to reduce emissions considerably.

#### Performance Measures or Metrics

Documentation of the “right-size” requirement and its implementation.

## **Strategy 9**

### **Implement a green fleet purchasing policy**

#### **Strategy Description**

This strategy seeks to push fleets to purchase the greenest vehicles possible.

#### **Strategy Design**

The exact design of a green fleet purchasing policy should be tailored to meet the specific needs of the organization.

The following principles could be used to guide fleets with their vehicle purchases:

- Purchase vehicles that are listed as the top two green vehicles for each class in EPA's Green Vehicle Guide.
- Purchase vehicles that achieve at least 25 percent better-than-average miles per gallon (mpg) for each vehicle class.
- Purchase renewable fuel vehicles or vehicles that achieve at least 25 better-than-average average mpg for each vehicle class.

More points will be awarded for more progressive strategies. The guiding principles provided above will be used as the benchmarks for scoring a fleet's purchasing strategy in the Evergreen fleet standard. More information on how purchasing programs will be scored is provided in the section on Scoring System Rationale, and an excerpt from the EPA Green Vehicle Program is provided for reference in Appendix D.

Organizations will need to know what the "greenest" vehicle options each year, as well as what alternative fuel and advanced technology vehicles are available. The EPA's Green Vehicle Guide, is a useful resource, and can be found on the web at <http://www.epa.gov/greenvehicles/>. The Department of Energy produces a list of the alternative fuel and advanced technology vehicles available each year, and has a searchable database on the internet. Both can be found here: [http://www.eere.energy.gov/afdc/progs/vehicles\\_search.php](http://www.eere.energy.gov/afdc/progs/vehicles_search.php).

#### **Potential Costs**

The most fuel-efficient and environmentally-friendly vehicles tend to be either hybrids or alternative fuel vehicles. These vehicles currently have higher purchase prices than their more conventional counterparts. Numerous cost evaluation tools for alternative fuel and advanced technology vehicles can help organizations compare the cost of green vehicles versus conventional fleet vehicles. The Department of Energy has produced two particularly useful calculators: a hybrid cost calculator (available here: [http://www.eere.energy.gov/afdc/vehicles/hybrid\\_electric\\_calculator.html](http://www.eere.energy.gov/afdc/vehicles/hybrid_electric_calculator.html)) and a flex-fuel vehicle cost calculator (available here: [http://www.eere.energy.gov/afdc/progs/cost\\_anal.php?0/E85/](http://www.eere.energy.gov/afdc/progs/cost_anal.php?0/E85/)).

#### **Additional Benefits**

By purchasing the greenest vehicles on the market, fleets help create more favorable conditions for their market integration. Many of these vehicles, particularly newer technology vehicles, are not initially produced in large enough numbers to fully realize the benefits of economies of scale.

Signaling demand for these vehicles will help the manufacturers get to a point where they are producing the vehicles on a large scale, which should reduce the cost of the vehicles for everyone.

### **Examples/Case Studies of Fleets that have used Strategy**

A number of area fleets have green fleet purchasing goals and strategies. For example, the City of Seattle in its [2007 Clean and Green Fleet Action Plan](#) set the following purchasing goals:

- ✓ at least 90 percent of compact sedan purchases will be clean and green vehicles
- ✓ at least 50 percent of small SUV purchases will be clean and green vehicles

The City of Seattle defined a “clean and green vehicle” as either an alternative fuel vehicle or a hybrid that achieves at least 25 percent higher combined fuel economy than a comparable, conventional vehicle. For 2008, this essentially meant that the City bought either Toyota Priuses or Ford Escape Hybrids, which were also at the top of the list of EPA’s green vehicles for that year. The City has exceeded both goals for 2008; in fact, they far exceeded the small SUV purchasing goal.

### **Key Uncertainties**

Because the list of green vehicles grows every year, fleets will need to stay on top of this to ensure they know what their best vehicle options are. Fleets may also wish to contact the Puget Sound Clean Air Agency and Clean Cities Coalition for support on planning for new vehicles each year. In addition, if fleets opt to purchase flex-fuel vehicles, they will need to ensure that they have access to E85. The fuel is available in the region although retail outlets are still very limited.

### **Potential emission reductions**

All pollutants will be reduced when fleets purchase the greenest vehicles available. Emission reductions are what leads the vehicles to be rated highest on green vehicle lists. For specific emission levels, refer to [EPA’s Green Vehicle Guide](#). EPA rates vehicles on greenhouse gas emissions and air pollution emissions using a scale of 1 to 10 with 10 being given to vehicles with the lowest emissions.

### **Performance Measures or Metrics**

Documentation of the policy and recent vehicle/equipment procurements.

## **Strategy 10**

### **Incorporate green fleet provisions into bid criteria**

#### **Strategy Description**

In this strategy, fleets ensure competitive bidding guidelines give preference to bidders who can provide goods and services that align with green fleet objectives.

#### **Strategy Design**

Implementation of this strategy will vary, based on the nature of goods and services generally procured by the organization. Some examples of green fleet provisions that can be incorporated into bid criteria are idle shutdown timers and biofuel use. If a fleet uses idle shutdown timers and has a policy for the length of time vehicles and equipment can idle, these requirements should be incorporated into bid criteria. Similarly, fleet managers may want to specify fuels contractors should use.

Another example is with light-duty vehicles. If the fleet has particular targets or requirements around what light-duty vehicles can be purchased or has particular right-size restrictions, these should be communicated to staff that actually purchases the vehicles to ensure they buy the right vehicles.

#### **Potential Costs**

Staff time to develop and integrate provisions in bid documents.

#### **Additional Benefits**

N/A

#### **Examples/Case Studies of Fleets that have used Strategy**

N/A

#### **Key Uncertainties**

Will the inclusion of green fleet provisions unduly restrict the fleet's purchasing options? How much influence does the individual fleet have over manufacturers and other bidders?

#### **Performance Measures or Metrics**

Fleet managers could provide bid documents and/or purchase orders with the particular green fleet provisions highlighted to show that they were included in bid specifications.

# Strategy 11

## Implement an alternative fuels procurement strategy

### Strategy Description

In this strategy fleets implement a policy encouraging the use of biofuels and/or electricity, to the extent possible.

The guiding principle for this strategy, at least for public fleets, should be the requirement that the Washington State Legislature passed in House Bill (HB) 1303 in the 2007 legislative session:

*HB1303, Section 202(1) "Effective June 1, 2015, all state agencies and local government subdivisions of the state, to the extent determined practicable by the rules adopted by the department of community, trade, and economic development pursuant to section 204 of this act, are required to satisfy 100% of their fuel usage for operating publicly owned vessels, vehicles, and construction equipment from electricity or biofuel."  
Section 301: "Biofuel' includes, but is not limited to, biodiesel, ethanol, and ethanol blend fuels or liquefied compressed gas made from biogas."*

Ideally, each fleet would develop a plan to align their fuel use with this requirement by June 1, 2015, with the understanding that the rules around this provision have not been implemented yet. At a minimum, the strategy would show how the fleet is going to go about procuring the greenest fuel possible that meets the operational needs of the fleet.

### Strategy Design

#### 1. Vision Setting

- a. Determine your fleet's current green fuel status.
- b. Describe the low hanging fruit to get you started.
- c. What more do you need to do?
- d. What obstacles must be removed?
- e. Clearly state your annual objectives to meet the ultimate goal.

#### 2. Funding

- a. Do you have a source of funding?
- b. How much will the various options cost? What are the benefits of each?
- c. Do you have sufficient funding for incremental costs? If not, what can you do to get it?
- d. Are there grants available?

#### 3. Policy/Politics

- a. Do you have an existing fleet and/or energy policy?
- b. If not, where can you get policy examples/templates?
- c. What are the risks of implementing such a policy?
- d. Who are the approvers and how will you sell them on the policy?

#### 4. Planning

- a. Set broad goals for the program:
  1. Reduce dependence on foreign petroleum
  2. Reduce GHG emissions
  3. Improve fuel economy
  4. Reduce fuel cost
  5. Develop a sustainable fuel supply

- b. Set specific objectives for achieving the goals:
  1. Funding parameters
  2. Types of vehicles and equipment using the fuel
  3. Fuel infrastructure
  4. Suppliers and products (e.g. state contracts, local contracts, partnerships)

### **Potential Costs**

1. Infrastructure: (e.g. tanks, pumps, leak/spill protection, fuel card readers, fuel systems)
2. Incremental costs (e.g. hybrid systems, tank cleaning, cost of biofuels or compatible engines)
3. Supplier costs: (e.g. what contracts are available, who are the suppliers?)

### **Additional Benefits**

1. Volume procurement discounts
2. Sustainable fuel supply during interruptions
3. Mitigation of ever increasing fuel costs

### **Examples/Case Studies of Fleets that have used Strategy**

1. Snohomish County HB1303 Compliance
  - a. Began using B20 at one location in January 2006 & began acquiring hybrids
  - b. Expanding in 2008 to 70% of the diesel fleet & replacing 15% of the non-law enforcement fleet annually with green fleet vehicles (e.g. hybrids, B20 compatible, E85 compatible)
  - c. By 2010 expand B20 to 100% of the diesel fleet
  - d. By 2012 start a pilot with B40 biodiesel at one location
  - e. 2013 to 2015 expand B40 to the entire diesel fleet; complete replacement of 100% of non-law enforcement vehicles

### **Key Uncertainties**

1. New fuel type development (e.g. algae, switchgrass, hydrogen, etc.)
2. Battery technological improvements
3. Vehicle manufacturer technological improvements
4. Solar power technological improvements
5. Actual implementation by the State of HB 1303's requirement

### **Performance Measures or Metrics**

The fleet could provide a copy of the strategy or plan resulting from this process. The fleet could also provide purchase orders or delivery receipts for the various green fuels that it uses.

## Strategy 12

### **Implement a method to ensure flex-fuel, bi-fuel and/or dual-fuel vehicles are fueled with green fuel to the greatest extent possible**

#### **Strategy Description**

This strategy encourages fleets with flexible-fuel, bi-fuel or dual-fuel vehicles to actually use alternative fuels in them as much as possible.

#### **Strategy Design**

There is considerable flexibility with this strategy. One option would be to concentrate flexible fuel, etc., vehicles around alternative fuel pumps, so the fuel is easily accessible. Another option would be to launch an education campaign to raise awareness among operators about the vehicles and how and where they can be refueled with alternative fuels. The fleet may want to start tracking the fuel use in the vehicles that can use alternative fuel to see how much alternative fuel is used versus conventional fuel. Once problems are identified through this data collection, then the fleet can start to identify and implement solutions.

#### **Potential Costs**

Staff time to develop the method and implement it. There could also be costs if outreach materials are developed.

#### **Additional Benefits**

It's one thing to have flexible-fuel vehicles, and quite another to actually use alternative fuels in them. This strategy helps fleets "walk the talk" and circumvent some of the negative backlash associated with fleets that claim 'green' status by purchasing FFVs, but never or rarely use actual alternative fuels in them.

#### **Examples/Case Studies of Fleets that have used Strategy**

N/A

#### **Key Uncertainties**

Fuel availability is often a problem.

#### **Performance Measures or Metrics**

Documentation of the method developed to ensure flexible fuel vehicles are fueled with alternative fuels as much as possible.

## **Strategy 13**

### **Implement a data management system to track fuel consumption and vehicle/equipment use**

#### **Strategy Description**

A major part of this green fleet standard is the collection and reporting of data on fleet fuel and vehicle/equipment use. In order to accomplish this and provide credible data, the fleet needs a system of tracking and managing data on fuel consumption and vehicle/equipment use.

#### **Strategy Design**

The implementation of this strategy is heavily dependent on the size and resources available to each fleet. For small fleets, an electronic spreadsheet may suffice as a data management system. For larger fleets, there are entire software systems that can be used for this purpose. The fleet should identify the best system that it is available and appropriate to meet its needs. It is highly recommended to talk to other fleets in the area on what systems they use and how well each works for its intended purposes.

#### **Potential Costs**

A data management system may need to be purchased, which can be of considerable cost, depending on the system. Staff will then need to be trained on how to use and maintain the system.

#### **Additional Benefits**

The use of a robust data management system can sometimes identify wastes of resources (either fuel or over/underutilization of fleet resources), which when addressed and/or eliminated, can have financial benefits to the fleet.

#### **Examples/Case Studies of Fleets that have used Strategy**

It is likely that every fleet uses some sort of data management system. The system may not be adequate for its intended purpose, though, so other fleets should be contacted as sources of information and evaluation of other systems.

#### **Key Uncertainties**

N/A

#### **Performance Measures or Metrics**

Documentation or other evidence of the data management system in use.

## **Strategy 14**

### **Implement fleet use efficiency measures**

#### **Strategy Description**

This strategy aims to achieve emission reductions through various fuel conservation and efficiency measures. Examples include trip/route planning, instituting a dispatch system, installing idle shutdown timers, vehicle telematics, etc.

#### **Strategy Design**

Strategy design will vary based on the particular technology or measure selected. Idle shutdown timers can be added to the specifications when purchasing a new vehicle or piece of equipment. These timers can also be added to existing vehicles and equipment.

Other idle reduction tools can be specified at the time of purchase or added afterwards as well. For example, trip/route planning software tools can be purchased from larger manufacturers. Alternately, a fleet manager of a small fleet could use free internet mapping tools to achieve some aspects of trip/route optimization.

Vehicle telematics are an add-on that is purchased from various technology providers. A device is installed in each vehicle and a software program is used (likely at the main fleet office) to collect and interpret the data provided by the devices in each vehicle. This can include information such as driving speed, idling times, etc.

Most of these measures require infrastructure in the form of technology, often both on the vehicle or piece of equipment and on a central computer.

#### **Potential Costs**

The various devices and software have initial costs to purchase and install them.

#### **Additional Benefits**

The fuel savings from implementing this strategy are likely to yield financial benefits as well.

#### **Examples/Case Studies of Fleets that have used strategy**

The City of Seattle and others use idle shutdown timers.

The City of Olympia and Snohomish County have used vehicle telematics, as have Tiz's Doors in Everett and Weyerhaeuser, among others.

#### **Key Uncertainties**

Specific costs for each system and financial returns have not been quantified as yet.

#### **Performance Measures or Metrics**

Documentation or other evidence of the technology installed, or data generated, such as fuel use and idle time.

## **Strategy 15**

### **Implement a diesel emission reduction program**

#### **Strategy Description**

This strategy targets exhaust emissions from diesel vehicles and equipment. The options for reducing these emissions are frequently referred to as “retrofits” but are actually five different approaches:

- Retrofit – install devices that reduce exhaust and engine emissions, such as filters and catalysts
- Repower – install new engine
- Rebuild – upgrade engine, e.g., upgrade kits provide new computer programming
- Refuel – use cleaner fuels, e.g., biodiesel
- Replace – purchase new equipment

#### **Strategy Design**

A good diesel emission reduction program will start with a review of the diesel vehicles and equipment in the fleet. This will inform the most appropriate emission reduction solution. Fleets and equipment should be inventoried to determine age, engine type and usage. Fleet managers are encouraged to contact the Puget Sound Clean Air Agency for information about their Diesel Solutions program, which helps fleets implement retrofits. More information on Diesel Solutions is included in the Examples/Case Studies section below. More information on exactly what technologies are considered retrofits is provided [here](#).

The retrofit approach is the most widely used and includes the following technologies:

- Diesel Particulate Filter (DPF) – Leads to the most reductions of fine particle emissions (>90%). Has specific operating requirements, such as minimum threshold exhaust temperatures that limit its application. Requires maintenance.
- Diesel Oxidation Catalyst (DOC) – Most commonly used technology. Results in the much less emissions reductions (~25-30%). Works in widest range of situations and equipment. Does not require maintenance.
- Diesel multi stage filter (DMF) – Emission reductions fall between those of a DPF and a DOC (50-80%).
- Crankcase Filter System (CFS) – Returns crankcase blow-by gases to engine and results in the least emissions reductions (10-15%). Similar to oil filters in technology and maintenance.

Repower can include

- Removing the current engine and replacing it with one that meets more-stringent emission standards.
- Providing electrical power to replace diesel engine power in certain circumstances, e.g., when truck drivers are in mandatory rest periods at port or when locomotives are in maintenance yards.

Rebuild can include

- Computer programs that alter engine combustion parameters and reduce emissions.
- Smaller auxiliary engines, known as auxiliary power units, for low-load activities.

## **Potential Costs**

Replacing an existing muffler with a DOC costs about \$1,200, while a DPF retrofit costs about \$7,500 and DMF about \$5,000. Retrofits for off-road equipment cost a little more because the installation is generally more difficult. Repowers cost \$30,000 to \$40,000. Rebuilds can cost \$500 to \$2,500 although rebuilds involving auxiliary power units will have costs closer to repowers. Some of the solutions involve maintenance which can range from installing replacement crankcase filters at a cost of a few tens of dollars to removing, cleaning and reinstalling filters, which can cost a few hundreds of dollars. Crankcase filters are replaced about as frequently as oil filters. DOCs do not need cleaning or replacing under normal operating conditions. How frequently DPFs and DMFs are cleaned depends on the type of equipment and how it is used.

## **Additional Benefits**

Some of the retrofit solutions, such as crankcase filter systems, can reduce the amount or frequency of maintenance needed.

## **Examples/Case Studies of Fleets that have used strategy:**

Since 2001, the Puget Sound Clean Air Agency has been working with fleets through its voluntary Diesel Solution program to determine the most appropriate emission reduction solution and implement retrofits. To date Diesel Solutions has helped transit agencies, school districts, cities and counties, ports and private fleets clean up their fleets and equipment. More information about the Diesel Solutions program and its partners can be found at [dieselsolutions.org](http://dieselsolutions.org).

## **Key Uncertainties**

New applications of these technologies can result in technical problems for existing equipment or poor performance of the retro-fit equipment. Fleet managers must work closely with technical staff and manufacturers to ensure that diesel retrofit technologies operate effectively, particularly if applied to a new type of equipment or vehicle.

## **Performance Measures or Metrics**

Performance metrics for this strategy could include diesel vehicles that have high performing diesel retrofit equipment or technologies, along with receipts for diesel emission reduction equipment as well as contracts or invoices for services.

We also recommend that fleets reducing overall diesel emissions by 25 percent receive approximately three of the five possible points for this strategy. Fleets that reduce diesel by 50 percent or more qualify for the total five points.

We also recommend that fleets use the U.S. Environmental Protection Agency's diesel emissions calculator to estimate their emissions and potential reductions (see <http://cfpub.epa.gov/quantifier/view/index.cfm>).

## **Strategy 16**

### **Implement a preventative maintenance program**

#### **Strategy Description**

A preventative maintenance (PM) program is essentially a method of tracking the usage of a vehicle or piece of equipment, recording this data and comparing it to the manufacturer's recommended service intervals to determine when service is required for optimal service life and performance. This strategy applies both to fleets that perform their own maintenance and to fleets that outsource to external service providers.

#### **Strategy Design**

This strategy can be as simple as implementing a paper work order and file system or as sophisticated as a computer maintenance software program that is real-time linked to the fueling system and GPS tracking.

To implement, a fleet manager needs to:

1. Document usage of vehicles and equipment. Measure miles driven and/or hours operated. This can be done by manually using window decals and a paper work order system, or with electronic work orders and an Electronic Fuel Interface.
2. Store the data. Develop an electronic or hard copy filing system where the data can be safely stored and accessed, as needed.
3. Develop a reporting system. The fleet manager or a technician can use to access the data and compare it with a PM schedule for optimal service intervals.

Several items need to be in place to aid with the implementation of a PM program. A work order system, whether hand written or inputted directly into your maintenance software is a good place to start. Next a fleet needs to adopt PM schedules. Many managers can choose to use the manufacturer's parameters. This is a good policy for maintaining your warranty status or you can adopt intervals that meet your fleet's unique situation or other industry standards. These PM parameters need to be attached to the vehicle file; most software programs have a report that will alert you when a PM is near, due or overdue.

Before beginning a PM program, associated costs and staffing needs must be considered. A manual, hand-written program would cost less than \$1,000 to implement. All that is really needed are several hundred work orders and a good filing cabinet; however, this type of system will consume many hours of writing and file work. At the higher end, in terms of up-front costs, the research, purchase and implementation of a maintenance software program which, depending on fleet size, can range in cost from roughly \$2,000-\$30,000. Though the decision may ultimately be driven by fleet and budget size, a software maintenance program would be the better choice.

#### **Potential Costs**

Additional staff to manage the PM program; increase in Technician labor to maintain proper service intervals; potential increase in parts budget to meet intervals; high up front cost of capital associated with software purchase.

### **Additional Benefits**

Implementation of this strategy stands to: increase vehicle life, because the equipment is being maintained appropriately; reduce downtime; save money through better accounting; and potentially prevent injury through improved fleet safety.

### **Examples/Case Studies of Fleets that have used strategy**

There are many examples in western Washington area of fleets that have implemented Preventative Maintenance programs. There are also many vendors that sell PM maintenance software. Case studies could come from members of the Evergreen Fleet Initiative such as King County, the City of Snoqualmie, the City of Everett, or the City of Mercer Island.

### **Key Uncertainties**

Staff time needed to implement may be difficult to budget. Capital costs associated with software purchase vary greatly depending on additional needs.

### **Performance Measures or Metrics**

There will be several signs that a successful Preventative Maintenance program has been implemented. A fleet manager should see a reduction in the number of overdue services, an increase in miles per gallon, a reduction in unscheduled repairs and longer lifecycles. An applicant agency must show proper documentation indicating that a comprehensive PM program is in place and being utilized. A program may be electronic or on paper. Regardless of who performs maintenance, the verifying agency will require documentation of a program around preventative maintenance in order for the fleet to receive points for this strategy.

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## Strategy 17

### Implement a recover, reduce and reuse program for maintenance products and processes

#### Strategy Description

This aim of this strategy is to reduce the environmental impacts of vehicle and equipment maintenance by ensuring fleets recover, reuse and reduce maintenance products, when appropriate. This strategy applies both to fleets that perform their own maintenance as well as those that outsource to external service providers.

#### Strategy Design

Develop and implement a program to manage fleet maintenance products. Most fleets likely have most, if not all, of such a program already in place. Fleets operate under various restrictions in how they can use, reuse and dispose of certain products. Fleets should ensure their programs to manage maintenance are up to date and cover all appropriate products. Whenever possible, fleets should have procedures in place to recover and reuse maintenance products. In addition, fleets should examine their current maintenance products and processes to determine if there are opportunities to reduce the amount (number or volume) of products that are used in vehicle and equipment maintenance.

#### Potential Costs

Dependent on the fleet's current maintenance practices and the extent to which they'd need to be modified. Potential costs related to staff training on new maintenance procedures

#### Additional Benefits

This program could reduce the environmental liabilities from vehicle maintenance if it helps avoid spills or limits improper disposal of maintenance products.

#### Examples/Case Studies of Fleets that have used Strategy

N/A

#### Key Uncertainties

N/A

#### Performance Measures or Metrics

- If a fleet performs its own maintenance, the fleet must prove implementation of the strategy in its own operations for points to be awarded.
- If a fleet outsources vehicle maintenance (to Jiffy Lube, for example), the fleet must document that it did one of the following.
  - Required the maintenance provider to follow the spirit of this strategy, if not exactly the letter. This could be achieved by requiring a recover, reduce and reuse program in bid or contract documents.
  - Communicated the fleet's policy on green maintenance and encouraged the service provider to offer green maintenance as soon as possible in order to avoid the risk of

losing business. This will only be allowed in special cases where a fleet demonstrates limited ability to influence maintenance providers.

During the early phase of the Evergreen Fleet Standard's implementation, points awarded for the above efforts will be largely at the discretion of the verifying agency. Criteria will be adapted and firmed up as the Evergreen Fleet Standard is refined.

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## Strategy 18

### Utilize environmentally-friendly products in vehicle maintenance

#### Strategy Description

This strategy seeks to reduce hazardous waste and minimize exposure to harmful substances by encouraging the use of environmentally-friendly products in vehicle maintenance. We define environmentally-friendly products as those recommended by the USEPA Environmentally Preferable Purchasing Program or the USDA BioPreferred Products list (see Appendix E for more detailed descriptions of these programs). This strategy applies both to fleets that perform their own maintenance and to fleets that outsource to external service providers.

#### Strategy Design

The strategy design has some flexibility, but should involve an assessment of the eco-friendliness of current products routinely used in vehicle maintenance and whether more environmentally-friendly alternatives are available. Consider the products employed for various shop functions, such as parts cleaning, vehicle washes, shop cleaning, vehicle painting, etc. Fleets can refer to the programs listed above or review product MSDS (Material Safety Data Sheet). Other considerations might include planning and providing for infrastructure modifications, if needed.

In designing the strategy, it may be helpful to list the factors that might influence product purchases (cost, operational efficiency, emissions, etc.) and track the benefits of switching to more environmentally-friendly options. See the following sample table, as an example:

Measurement categories	Description	Outcomes
Hazardous waste reduction	Measurement of waste reduction compared to using conventional product	e.g. deletion of lead based product use in fleet
Emission reduction	Reduction in green house gas and other harmful emissions	
Operation costs	Decrease in operations cost based on waste reduction	
Fleet maintenance cost	Decrease in fleet/equipment maintenance costs	
Operational efficiency	Improvement in operational efficiency	
Product satisfaction	Describe if shop staff is satisfied with the product	
Other benefits	Describe other benefits	

#### Potential Costs

Any upfront equipment purchases, as well as installation and operating costs.

#### Additional Benefits

Improved safety, operational efficiency gains, enhanced level of environmental awareness among fleet staff, improved customer service and other political benefits.

### **Examples/Case Studies of Fleets that have used strategy**

Fleet managers should research if there are any other fleets in the Puget Sound region using some of these products to gain knowledge and review lessons-learned by other fleet managers.

### **Key Uncertainties/risks**

Some of the potential barriers using new eco-friendly product may be higher costs and resistance to from the fleet staff. Risk categories may include cost, schedule, safety, and other operations issues.

### **Performance Measures or Metrics**

- If a fleet performs its own maintenance, the fleet must prove implementation of the strategy in its own operations for points to be awarded. For example, a written policy and observable systems such as tracking sheets or product receipts would be key components of an effective program.
- If a fleet outsources vehicle maintenance (to Jiffy Lube, for example), the fleet must document one of the following:
  - Require maintenance provider to follow the spirit of this strategy, if not exactly the letter. This could be achieved by requiring the use of environmentally friendly products in bid or contract documents.
  - Communicated the fleet's policy on green maintenance and encouraged the service provider to offer green maintenance as soon as possible in order to avoid the risk of losing business. This will only be allowed in special cases where a fleet demonstrates limited ability to influence maintenance providers.

During the early phase of the Evergreen Fleet Standard's implementation, points awarded for the above efforts will be largely at the discretion of the verifying agency. Criteria will be adapted and firmed up as the Evergreen Fleet Standard is refined.

## Scoring Category III: Achieving Greenhouse Gas Reductions

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To receive points in this category, fleets must demonstrate reductions in greenhouse gas (GHG) emissions as a result of their green fleet efforts.

To achieve the platinum level, a minimum of 2.2 percent reduction is required, over the assumed baseline year of 2009.

To achieve the gold level, measurable reductions up to 2.2 percent over the baseline year of 2009 are required.

A few things are worth noting about the scoring system and process.

- Fleets using a post-2009 baseline year will have a greater annual GHG reduction target than 2.2 percent, which will be calculated and explained to the fleet by the verification agency.
- If a fleet is able to provide the verifying agency with adequate proof of fuel use for one or several consecutive years prior to joining the initiative, the earliest year may be used as the baseline. This year would be the basis for calculating the annual GHG reductions required to achieve platinum status.
- “Banking” of credits for GHG reductions is permitted when a fleet achieves more than the minimum GHG emissions reduction for the platinum level. As an example, if a fleet that joined in 2009 shows a 5 percent GHG reduction in 2010, that fleet will likely qualify for the platinum level for two years in a row. The exact numbers around banking will vary based on the baseline year for the fleet and the year of the reductions. Again, the verification agency will do these calculations and communicate the results to the fleet.

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### *Rationale for scoring*

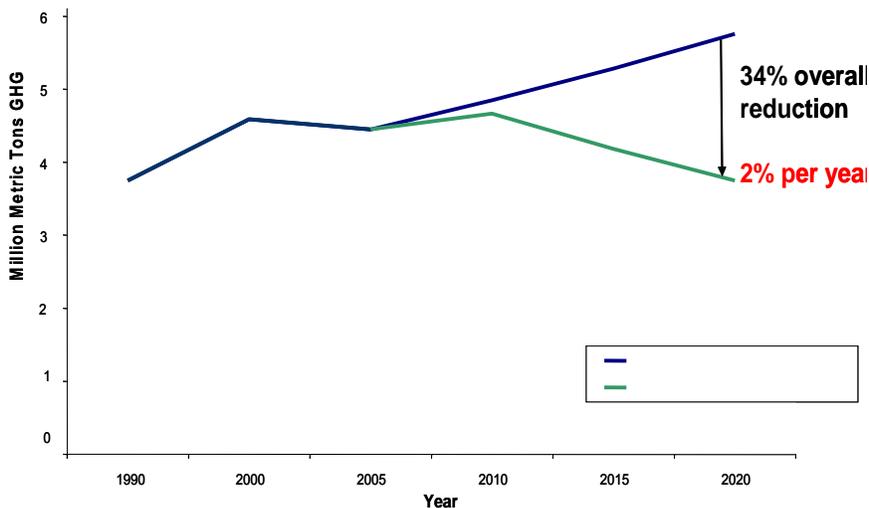
As stated previously, the Advisory Committee used the State Legislature’s goals for GHG reductions to guide its work. This required analysis to determine a percent reduction that a fleet would have to achieve in order to meet the Legislature’s goal of reaching 1990 emission levels by 2020. The analysis relied on a December 2007 report from the Washington State Department of Community, Trade and Economic Development (CTED) and the Department of Ecology (Ecology) produced a report in Dec. 2007 titled *Washington State Greenhouse Gas Inventory and Reference Case Projections, 1990-2020*. The report broke down GHGs by year and by sector allowing for analysis of business as usual (BAU) emissions until 2020 and what reductions would be required to bring this BAU level down to 1990 levels.

The initial analysis focuses on a fleet that joins the initiative in 2009, which would become the baseline year for that fleet. The fleet would then be expected to show GHG reductions starting in 2010 in order to reach the gold or platinum level of the standard. The CTED/Ecology report has historic estimates of emission levels for the transportation sector from 1990 through 2005 as well as projections out to 2020 based on an average, annual growth rate. Using this growth rate, it is possible to calculate the emissions from the transportation sector in 2009. Then, a percent

reduction is calculated to determine how much must be reduced from 2010 to 2020 to reduce emissions back to the 1990 level. These calculations show that a 2.2 percent reduction per year is required to reach 1990 levels in 2020. The calculations could be rerun for any starting year between 1990 and 2020 and would return a different percent reduction required per year.

**Analysis shows that if a fleet were to join the Evergreen Fleet Initiative in 2009, the fleet will have to reduce its greenhouse gases by at least 2.2% per year starting in 2010 to meet the goal of returning to 1990 levels in 2020.**

*Puget Sound Regional Green Fleet Initiative Reduction Goals*



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**Appendices**

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# Appendix A

## Evergreen Fleets Advisory Committee Charter

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### Purpose

The Evergreen Fleets Advisory Committee will recommend to the Puget Sound Clean Air Agency and the Puget Sound Clean Cities Coalition a suite of policies and criteria that can be used to define a “green fleet” for public fleets in the region.

The Agency and Coalition will use this information to create the Evergreen Fleet Standard for public fleets, which will be a voluntary standard that public fleets can use to reduce their greenhouse gas (GHG) and air pollutant emissions.

### Principles

In addition to evaluating and recommending strategies that comprise a green fleet, the members of this advisory committee also agree on the following principles:

- Public fleets have a responsibility to reduce GHGs as part of the commitment made by our elected officials, as led by our cities and counties. For example:
  - Cities throughout the Puget Sound region have endorsed the U.S. Conference of Mayors Protection Agreement or have adopted similar resolutions seeking significant greenhouse gas emission reductions.
  - King County launched a Cool Counties program in 2007, which includes a pledge to reduce regional greenhouse gas emissions to 80 percent below current levels by 2050.
  - Washington State has committed to long range climate stabilization goals of 50 percent below 1990 levels by 2050.
- Serious commitment to address global warming in our region must powerfully address emissions from our transportation sector, which represents approximately 50 percent of all regional greenhouse gas emissions.
- We must reduce our dependence on fossil fuels through green fleet strategies. These strategies also increase our energy security, save taxpayer dollars, and promote our regional economy.
- Economic benefits for investing in municipal vehicle fleets that have lower greenhouse gas emissions are compelling, from the near-term economic gains of fuel savings to the long-term climate stabilization.

### Process

- The Advisory Committee is comprised of participants from a broad range of jurisdictions across the Puget Sound region.
- Agency and Coalition staff will lead the meetings and provide the Committee with technical information necessary to support the Committee’s discussions.
- In addition, Committee members will complete tasks agreed to at meeting and within an agreed upon timeline.

- Throughout its dialogue, the Committee will strive to reach consensus. However, if consensus cannot be reached, the opinions of different members will be respected and reflected in the Committee's efforts.
- The process is comprised of one Advisory Committee and smaller sub-committees as necessary. The sub-committees will discuss in greater detail the technical components of the green fleet standard and will make recommendations to the Committee for its consideration.
- The Committee will work with the Agency and the Coalition to deliver a final report. The report will describe the group's process and the "Green Fleet" classification system developed by the group. The Committee will also recommend additional steps or tasks the Agency and Coalition should pursue in order to implement the Evergreen Fleet Standard.
- The process is anticipated to consist of six meetings, held once per month, from January 2008 through June 2008. Other sub-committee meetings will be held as necessary.

### **Scope and Objectives**

- The Advisory Committee will focus on reduction strategies that can be implemented within the 5-county region (King, Kitsap, Pierce, Snohomish and Thurston). The Committee may also examine strategies that could reduce fleet emissions here, but need assistance from parties outside the 5-county region. The Committee may also consider activities or projects developing elsewhere that could help fleets reduce GHG and air pollution in the Puget Sound region.
- An important element of the Committee's discussions will be to consider projects that could benefit from regional collaboration among public fleets, highlighting strategies that might benefit from regional funding efforts or coordinated legislative assistance.

# Appendix B

## Puget Sound Green Fleets Standard Advisory Committee Roster

Organization	Participant Name	Email	Phone
<b>Bainbridge Island</b>	Aaron Claiborne	<a href="mailto:aclaiborne@ci.bainbridge-isl.wa.us">aclaiborne@ci.bainbridge-isl.wa.us</a>	206.780.3585
<b>Bellevue</b>	Pete Bednar	<a href="mailto:p.bednar@ci.bellevue.wa.gov">p.bednar@ci.bellevue.wa.gov</a>	425.452.4880
	Nora Johnson	<a href="mailto:njohnson@bellevuewa.gov">njohnson@bellevuewa.gov</a>	
<b>Bothell</b>	Doug Jacobsen	<a href="mailto:doug.jacobson@ci.bothell.wa.us">doug.jacobson@ci.bothell.wa.us</a>	425.486.2769
<b>Bremerton</b>	Jim Orton	<a href="mailto:jim.orton@ci.bremerton.wa.us">jim.orton@ci.bremerton.wa.us</a>	360.473.5359
<b>CTED</b>	Tim Stearns	<a href="mailto:tims@cted.wa.gov">tims@cted.wa.gov</a>	206.256.6121
<b>Ecology</b>	Brett Rude	<a href="mailto:brud461@ecy.wa.gov">brud461@ecy.wa.gov</a>	360.407.7534
	Bob Saunders	<a href="mailto:rsau461@ecy.wa.gov">rsau461@ecy.wa.gov</a>	360.407.6888
<b>Everett</b>	Bill DeRousse	<a href="mailto:wderousse@ci.everett.wa.us">wderousse@ci.everett.wa.us</a>	425.257.8802
<b>Federal Way</b>	Neal Beets	<a href="mailto:neal.beets@cityoffederalway.com">neal.beets@cityoffederalway.com</a>	
	Scott Pingel	<a href="mailto:scott.pingel@cityoffederalway.com">scott.pingel@cityoffederalway.com</a>	253.835.2403
	Chris Pyle	<a href="mailto:chris.pyle@cityoffederalway.com">chris.pyle@cityoffederalway.com</a>	253.835.2434
<b>Fife</b>	Kirt Haspenthal	<a href="mailto:khospenthal@cityoffife.org">khospenthal@cityoffife.org</a>	253.896.8210
<b>General Administration</b>	Bryan Bazard	<a href="mailto:bbazard@ga.wa.gov">bbazard@ga.wa.gov</a>	360.407.0977
<b>Issaquah</b>	Mary Joe deBeck	<a href="mailto:maryjoed@ci.issaquah.wa.us">maryjoed@ci.issaquah.wa.us</a>	425.837.3417
<b>Kent</b>	Ron Green	<a href="mailto:rgreen@ci.kent.wa.us">rgreen@ci.kent.wa.us</a>	
<b>King County</b>	Melody Bennett	<a href="mailto:melody.bennett@kingcounty.gov">melody.bennett@kingcounty.gov</a>	206.205.1160
	Jim Lopez	<a href="mailto:jim.lopez@kingcounty.gov">jim.lopez@kingcounty.gov</a>	206.296.4048
	Win Mitchell	<a href="mailto:windell.mitchell@kingcounty.gov">windell.mitchell@kingcounty.gov</a>	206.296.6521
	Elizabeth Willmott	<a href="mailto:elizabeth.willmott@kingcounty.gov">elizabeth.willmott@kingcounty.gov</a>	206.296.4301
<b>Kirkland</b>	Tim Llewellyn	<a href="mailto:tllewellyn@ci.kirkland.wa.us">tllewellyn@ci.kirkland.wa.us</a>	
	Dave Ramsay	<a href="mailto:dramsay@ci.kirkland.wa.us">dramsay@ci.kirkland.wa.us</a>	425.587.3020
<b>Lakewood</b>	Terry Neumann	<a href="mailto:tneumann@cityoflakewood.us">tneumann@cityoflakewood.us</a>	253.584.1765
<b>Marysville</b>	Mike Shepard	<a href="mailto:mshepard@ci.marysville.wa.us">mshepard@ci.marysville.wa.us</a>	360.363.8106
<b>Mercer Island</b>	Glenn Boettcher	<a href="mailto:glenn.boettcher@mercergov.org">glenn.boettcher@mercergov.org</a>	
	Rich Conrad	<a href="mailto:rich.conrad@mercergov.org">rich.conrad@mercergov.org</a>	206.275.7660
<b>North Bend</b>	Ron Garrow	<a href="mailto:rong@ci.northbend.wa.us">rong@ci.northbend.wa.us</a>	
<b>Olympia</b>	Dave Seavey	<a href="mailto:dseavey@ci.olympia.wa.us">dseavey@ci.olympia.wa.us</a>	360.753.8256
<b>Pierce County</b>	Alan Kies	<a href="mailto:akies@co.pierce.wa.us">akies@co.pierce.wa.us</a>	253.798.6805

<b>Organization</b>	<b>Participant Name</b>	<b>Email</b>	<b>Phone</b>
<b>PS Clean Air Agency</b>	Leslie Stanton	<a href="mailto:leslies@pscleanair.org">leslies@pscleanair.org</a>	206.689.4022
<b>PS Clean Cities</b>	Mark Brady	<a href="mailto:markb@pscleanair.org">markb@pscleanair.org</a>	206.689.4055
<b>Renton</b>	David Hohn	<a href="mailto:dhohn@ci.renton.wa.us">dhohn@ci.renton.wa.us</a>	425.430.7440
<b>Snohomish</b>	Larry Bauman	<a href="mailto:bauman@ci.snohomish.wa.us">bauman@ci.snohomish.wa.us</a>	360.282.3154
	Sam Belcher	<a href="mailto:belcher@ci.snohomish.wa.us">belcher@ci.snohomish.wa.us</a>	360.282.3164
	Rob Root	<a href="mailto:root@ci.snohomish.wa.us">root@ci.snohomish.wa.us</a>	
<b>Snohomish County</b>	Allen Mitchell	<a href="mailto:allen.mitchell@snoco.org">allen.mitchell@snoco.org</a>	425.388.6061
<b>Snoqualmie</b>	Mike Roy	<a href="mailto:mroy@ci.snoqualmie.wa.us">mroy@ci.snoqualmie.wa.us</a>	425.766.0565
<b>Tacoma</b>	Fred Chun	<a href="mailto:fchun@cityoftacoma.org">fchun@cityoftacoma.org</a>	253.591.5553
<b>Thurston County</b>	Dick Weston	<a href="mailto:weston@co.thurston.wa.us">weston@co.thurston.wa.us</a>	360.786.5495
<b>University Place</b>	Gary Cooper	<a href="mailto:gcooper@cityofup.com">gcooper@cityofup.com</a>	253.460.6494
<b>WSDOT</b>	Greg Hansen	<a href="mailto:hanseng@wsdot.wa.gov">hanseng@wsdot.wa.gov</a>	360.705.7862
	Jim Laughlin	<a href="mailto:laughlj@wsdot.wa.gov">laughlj@wsdot.wa.gov</a>	206.440.4643
	Jonathan Olds	<a href="mailto:oldj@wsdot.wa.gov">oldj@wsdot.wa.gov</a>	
	Mia Waters	<a href="mailto:waters@wsdot.wa.gov">waters@wsdot.wa.gov</a>	206.440.4541

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# Appendix C

## Required Documentation for Verifying Strategy Use

Strategy	Examples of Documentation to be Provided for Verification
1. Develop a Green Fleet Work Plan or Strategy Document	Work plan or strategy document
2. Obtain top-level approval of green fleet effort	Signed document from a high level in the organization expressing support for the green fleet work; e.g., resolution, executive order, interoffice memo, etc.
3. Communicate top-level approval of green fleet effort	Document from whatever distribution means was used to tell staff of top-level support, e.g., all staff email, interoffice memo, etc.
4. Implement an idle reduction policy or program	Signed anti-idling policy statement and/or documentation on an anti-idling program that is implemented, such as outreach materials, pictures of anti-idling signs, etc. To document training, documentation could include course outlines, training materials, class attendance records, participant's feedback, and photos/videos of sessions.
5. Conduct training on fuel-efficient driving practices	Course outlines, training materials, class attendance records, participant's feedback, and photos/videos of sessions.
6. Implement an incentive or reward program around fuel use and/or utilization	Various documents could be provided for this strategy. For example, organizations could submit the documentation that is distributed to departments or groups to explain the program, documentation explaining the criteria to be eligible for incentives or rewards, announcements of rewards, photos of award ceremonies, etc.
7. Advances in green fleet management (for bonus points)	This strategy is non-specific so required documentation cannot be listed. An organization should provide whatever information/documentation describes in detail what the organization did and the impact that it had. If technology is purchased, provide purchase orders, receipts or such. If a new procedure/process is developed, provide copy of procedure and proof it was communicated appropriately. It is expected that follow-up will be required to verify implementation of any advances in green fleet management.
8. Implement a "right-size" requirement or procedure	Procedure that ensures vehicles are appropriate for the application, documentation people must complete to verify vehicle is appropriate for the application, etc. Proof that requirement has been communicated to appropriate audiences (emails, staff newsletters, staff meeting agendas, etc.).
9. Implement a green fleet purchasing strategy	May include 1) inclusion of green vehicle purchase options and resources for making such purchases in manuals, 2) language that endorses the purchase of green vehicles in the fleet budget, 3) POs or receipts for vehicles purchased. When purchasing vehicles that do not meet green criteria, provide written justification for why non-green vehicle was necessary, such as couldn't find a green vehicle that meets the application; immediate need for a new vehicle; budget constraints that prohibit the purchase of a green vehicle, despite proven attempts to procure funding and full financial analysis of costs and benefits; etc.
10. Incorporate green fleet provisions into bid criteria	Bid documents and/or purchase orders with green fleet provisions highlighted.
11. Implement an alternative fuels procurement strategy	Strategy document or procedure that covers green fuel procurement. Purchase orders or delivery receipts for green fuels the organization uses. Proof that strategy has been communicated to appropriate audiences (emails, staff newsletters, staff meeting agendas, etc.).

12. Implement a procedure to ensure flex-fuel, bi-fuel and/or dual-fuel vehicles are fueled with green fuel to the greatest extent possible	Procedure that supports choice of green fuel over conventional fuels. Proof that strategy has been communicated to appropriate audiences (emails, staff newsletters, staff meeting agendas, etc.).
13. Implement a data management system to track fuel consumption and vehicle and equipment use	If a computer software system is purchased/used, provide documentation showing the system used (receipt from purchase of system, copy of inside page of user manual, screen shot, etc.). Also, a report that the system outputs or some other output that clearly comes from whatever data management system is used should be provided.
14. Implement fleet use efficiency measures	Purchase orders/receipts for technologies that are purchased. If computer software is used, could provide a report/output from system. Performance metrics for the strategy could be fuel use, idle time and/or VMT.
15. Implement a diesel emission reduction program	Inventory of diesel vehicles and equipment in fleet with explanation of what retrofits have been installed and notes on what vehicles/equipment has not been retrofitted and why. Schedule to implement uncompleted retrofits. Purchase orders for retrofit technologies.
16. Implement a preventative maintenance program	Description of preventive maintenance program. Evidence of communication to appropriate staff. Proof that vehicles/equipment undergoes maintenance on schedule. Procedures for ensuring vehicles that are late for maintenance undergo needed maintenance.
17. Have a recover, reduce, reuse program for maintenance products and processes	Procedure(s) that address recovering and reusing maintenance products. Description of steps taken to reduce the number and/or amount of maintenance products used.
18. Utilize environmentally friendly products in vehicle maintenance	Purchase orders/receipts from environmentally friendly products. Descriptions of steps taken to incorporate environmentally products into maintenance program.

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# Appendix D

## Sample Green Fleets Initiative Resolution

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### **A RESOLUTION OF COMMITMENT TO THE PUGET SOUND GREEN FLEETS INITIATIVE ESTABLISHING GOALS, METHODOLOGIES AND BEST PRACTICES FOR REDUCING EMISSIONS FROM MUNICIPAL FLEETS.**

WHEREAS, the threat of global climate change is now universally recognized as one of the most pressing issues facing local and regional governments today;

WHEREAS, Washington State and the Puget Sound region stands to lose over \$200 million dollars per year by 2020 from climate impacts such severe droughts and floods, sea level rise, pest infestations, increased forest fires and a permanent loss of half our snowpack in the Olympic and Cascade Mountains;

WHEREAS, local, regional, and state government elected officials throughout the United States are adopting emissions reduction targets and programs as a response to these potential impacts;

WHEREAS, the U.S. Conference of Mayors has endorsed the U.S. Mayors Climate Protection Agreement with over 600 mayors signing this agreement which commits cities to reduction of global warming emissions to 7 percent below 1990 levels by 2012, and calls for a federal limit on emissions;

WHEREAS, many Puget Sound cities have endorsed the U.S. Conference of Mayors Protection Agreement or have adopted similar resolutions seeking significant greenhouse gas emission reductions;

WHEREAS, Washington State has committed to long range climate stabilization goals of 50 percent below 1990 levels by 2050;

WHEREAS, Washington State has adopted clean vehicle technology requirements by adopting the California tailpipe standards and requiring minimum use of biofuels;

WHEREAS, the elected leaders of Puget Sound's local governments are committed to adopting best business practices in order to meet their adopted emissions goals;

WHEREAS, any serious commitment to address global warming in our region must powerfully address emissions from our transportation sector which comprises approximately 50 percent of all regional greenhouse gas emissions;

WHEREAS, reducing our dependence on fossil fuels through green fleet strategies can increase our energy security, save taxpayer dollars, and promote our regional economy;

WHEREAS, economic benefits for investing in municipal vehicle fleets that have lower greenhouse gas emissions are compelling, from the near-term economic gains of fuel savings to the long-term climate stabilization;

WHEREAS, the Puget Sound Clean Air Agency in partnership with the Puget Sound Clean Cities Coalition are recognized experts in reducing pollution from motor vehicles and are participating in the Initiative by assisting local government fleets with energy saving and emission reduction strategies;

NOW, THEREFORE, BE IT RESOLVED, the City of \_\_\_\_\_ is hereby committed to participate in the Puget Sound Regional Green Fleets Initiative, which will work to develop a set of uniform green fleet standards by:

- Establishing specific targets, goals, and strategies regarding the purchase of clean vehicle technologies and the reduction of fossil fuels.
- Adopting policies that promote best practices in fleet design and operation.
- Share information on the total type and quantity of fuel consumed and vehicle miles traveled on an annual basis.
- Communicating the values of this commitment throughout the organization.
- Directing staff to implement policies and practices as determined by the Initiative membership.

ADOPTED this \_\_\_\_\_ day of \_\_\_\_\_, 2008

\_\_\_\_\_  
Mayor

# Appendix E

## EPA Green Vehicle Ratings

*Option 1. Purchase vehicles listed in the top 2 of EPA's annual list of green vehicles for each class*

Class	EPA 2008 Green Vehicle Rankings							
	#1				#2			
	Make and Model	Air Pollution	GHG	MPG	Make and Model	Air Pollution	GHG	MPG
<b>SMALL CAR</b>	Honda Civic Hybrid	9.5	10	42	Honda Civic CNG	9.5	9	28
<b>MIDSIZE CAR</b>	Toyota Prius	9.5	10	44	Nissan Altima Hybrid Toyota Camry Hybrid	9.5	9	34
<b>LARGE CAR</b>	Honda Accord (4 cyl)	9.5	7	25	Chevy Impala (6 cyl) Ford Taurus (6 cyl) Honda Accord (6 cyl) Mercury Sable (6 cyl)	9.6	6	22
<b>STATION WAGON</b>	VW Jetta Wagon (5 cyl) Volvo V50 (5 cyl)	9.5	7	22	Pontiac Vibe (4 cyl) Toyota Matrix (4 cyl)	7	8	27
<b>MINIVAN*</b>	Mazda 5 (4 cyl) Honda Odyssey (6 cyl)	7	6	21	Chrysler Town & Country (6 cyl) Dodge Caravan (6 cyl) Hyundai Entourage (6 cyl) Kia Sedona (6 cyl) Nissan Quest (6 cyl) Toyota Sienna (6 cyl)	7	5	19
<b>MINIVAN (on E85)*</b>	Chevy Uplander (6 cyl FFV)	6	7	14	Dodge Caravan (6 cyl FFV) Chrysler Town & Country (6 cyl FFV)	6	6	18
<b>SUV - 2WD</b>	Ford Escape Hybrid Mazda Tribute Hybrid Mercury Mariner Hybrid	9.5	9		Lexus RX 400h (6 cyl) Nissan Rogue (4 cyl)	9	7	
<b>SUV - 4WD</b>	Ford Escape Hybrid Mazda Tribute Hybrid Mercury Mariner	9.5	8		Toyota Highlander Hybrid	9	8	

	Hybrid							
<b>PICKUP TRUCK 2WD*</b>	Chevy Colorado (4 cyl) Ford Ranger (4 cyl) GMC Canyon (4 cyl) Isuzu I-290 (4 cyl) Mazda B2300 (4 cyl)	7	6		Chevy Colorado (5 cyl) GMC Canyon (5 cyl) Isuzu I-370 (5 cyl) Nissan Frontier (4 cyl)	7	5	
					Toyota Tacoma (4 cyl)	6	6	
<b>PICKUP TRUCK 2WD (on E85)*</b>	Chevy Silverado 15 (8 cyl FFV) GMC Sierra 15 (8 cyl FFV)	7	6		Chevy Silverado 15 (8 cyl FFV) GMC Sierra 15 (8 cyl FFV)	6	6	
<b>PICKUP TRUCK 4WD*</b>	Chevy Colorado (4 cyl) GMC Canyon (4 cyl)	7	5		Chevy Colorado (5 cyl) Chevy Silverado 15 (8 cyl) Ford Ranger (6 cyl) GMC Canyon (5 cyl) GMC Sierra 15 (8 cyl) Honda Ridgeline (6 cyl) Isuzu I-370 (5 cyl) Nissan Frontier (6 cyl)	7	4	
					Toyota Tacoma (6 cyl)	6	5	
<b>PICKUP TRUCK 4WD (on E85)*</b>	Chevy Silverado 15 (8 cyl FFV) GMC Sierra 15 (8 cyl FFV)	6	6		Chevy Silverado 15 (8 cyl FFV) GMC Sierra 15 (8 cyl FFV)	6	6	
<b>VAN*</b>	Chevy Van 1500 (6 cyl) Chevy Van 2500 (6 cyl) GMC Savana 1500 (6 cyl) GMC Savana 2500 (6 cyl)	6	4		Chevy Van 1500 (8 cyl) Chevy Van 2500 (8 cyl) GMC Savana 1500 (8 cyl) GMC Savana 2500 (8 cyl)	6	3	
<b>VAN (on E85)*</b>	Chevy Van 2500 (8 cyl FFV) GMC Savana 2500 (8 cyl FFV)	6	5		Chevy Express 1500 (8 cyl FFV) Chevy Express 2500 (8 cyl FFV) GMC Savana 1500 (8 cyl FFV) GMC Savana 2500 (8 cyl FFV)	6	4	

*\*None of these vehicles is really very green, but they are best options in these categories.  
Only automatic transmission vehicles were considered in these rankings.*

# Appendix F

## Fleet Maintenance Products

**Option 1: EPA Database of Environmental Information for Products and Services.**

<http://yosemite1.epa.gov/oppt/epstand2.nsf/Pages/DisplayAisle.html?Open&Vehicles%20and%20Transportation%20Store&Fleet%20Maintenance&Type=4>

### Vehicles and Transportation Store - Fleet Maintenance

**PLEASE NOTE: Linking to these lists does not constitute "endorsement" of these products or companies on the part of the EPA's Environmentally Preferable Purchasing Program.**

Program and Contact, Vendor List, Eco-Label Designation, Standard/Criteria, Attributes, Methodology and Date Finalized are provided on the EPA website for each of the following product categories:

Absorbents and Adsorbents (hydrocarbon)	Lubricant (synthetic industrial)
Alternative Fuels	Lubricant (vegetable-based - scroll down to view specifications)
Anticorrosion Product (for mechanical vehicles)	Lubricants
Automotive Care Products	Lubricants (all-purpose)
Automotive Cleaners: GSA Environmental Products and Services Guide -- Automotive Products (cleaners and maintenance)	Manual-grade Strapping
Car Care Products	Mechanical Filters
Car Wash Facilities	Mechanical Fluids
Car Wash Services	Motor Filters
Car Washes (self-service)	Motor Fluids
Cleaners (automotive)	Motor Oil
Cleaners (windshield)	Motor Oil
Coolant (automobile and light duty engines)	Oil (forming)
Coolant (heavy duty engines)	Oil (lubricating)
Coolant (universal engine)	Oil (re-refined lubricating)
Diesel Fuel Additives	Rebuilt Vehicular Parts
Diesel Fuel Additives	Recyclables: California State Agency Buy Recycled Program (scroll down for lubricating oil products)
Engine Coolants	Recycled Rubber Products Catalog: Vehicle Floor Mats
Engine Fluid Protectants (oil and power steering)	Retread Tire Buyers Guide
Engine Fluid Protectants (oil and power steering)	RV and Marine Holding Tank Additives
Engine Oil (automotive)	Tire Replacement
Ethanol-Blended Gasoline (automotive)	Tires
Filters (mechanical)	Tires
Filters (motor)	Tires (low noise and fuel saving automobile tires)
Fluids (mechanical)	Tires (retread)
Fluids (motor)	Tires (retread) (GSA vendor list)
Fuel (automotive)	Two-Cycle Engine Oil
Hydraulic Fluids	Vehicle Cleaning (exterior)

Hydraulic Fluids (all-purpose, high-performance, and transmission applications)	Vehicle Wash
Hydraulic Fluids (non-industrial)	Vehicle Washes (self-service)

**Option 2: USDA BioPreferred Products.**

<http://www.biopreferred.gov/?SMSESSION=NO>

Welcome to the BioPreferred website. This site was designed as a resource for producers of biobased products, federal agencies required to purchase them, and others interested in renewable products. It includes information on submitting products for designation, instructions on meeting requirements to purchase biobased materials, and many other useful topics. The Farm Security and Rural Investment Act (FSRIA) was signed into law in 2002. A goal of that legislation is to increase the government's purchase and use of biobased products. In addition to lessening our national dependence on foreign oil, use of biobased materials promotes economic development by creating new jobs in rural communities and providing new markets for farm commodities. As part of the FSRIA mandate, the U.S. Department of Agriculture was directed to develop and implement a comprehensive program for designating biobased products. The USDA has already designated several items as "preferred," and will be adding significantly to that list in the coming months. Many government agencies are now using these products, and have found them to have comparable or superior performance to their petroleum counterparts.



Close

## Catalog

The content of this catalog is limited to products in those items which have been designated for preferred this catalog will increase as more items gain preferred procurement status.

- Furniture and Furnishings
- Industrial Supplies
  - Fuels
    - Diesel Fuel Additives
  - Lubricants
    - Hydraulic Fluids
    - Penetrating Lubricants
  - Sealants and Coatings
    - Roof Coatings
    - Water Tank Coatings

Keywords:

Select

All Loss

Bio Hydraulic Fluids

Biodegradable

Cable

Caterpillar Fluid

Chain

Chain and Cable

Dexron III®

Energy Conserving

Energy Star

environmental

Extreme Temperature

Fire Resistant

Fluid

Foaming

Food Grade

Green

High Oleic

Hydraulic

Close

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    - Hydraulic Fluids
    - Penetrating Lubricants
  - Sealants and Coatings
    - Roof Coatings
    - Water Tank Coatings

Keywords:

- Hydraulic
- hydraulic fluid
- Hypoallergenic
- ISO 32
- Liner
- Low Temperature
- Metal
- MIL-PRF-32073
- Multi-grade
- Non-toxic
- nontoxic
- Oil
- Penetrating
- Polyol Ester
- recycled vegetable oil
- Renewable
- Roof
- Rust and Oxidation
- SAE 10W40
- Stabilized High Oleic Base Stocks

## Catalog

The content of this catalog is limited to products in those items which have been designated for preferred procurement status. This catalog will increase as more items gain preferred procurement status.

- Furniture and Furnishings
- Industrial Supplies
  - Fuels
    - Diesel Fuel Additives
  - Lubricants
    - Hydraulic Fluids
    - Penetrating Lubricants
  - Sealants and Coatings
    - Roof Coatings
    - Water Tank Coatings

Keywords:

- recycled vegetable oil
- Renewable
- Roof
- Rust and Oxidation
- SAE 10W40
- Stabilized High Oleic Base Stocks
- Synthetic
- Ultimax
- Ultimax ISO 32
- Ultimax ISO 46
- Ultimax ISO 68
- Universal Tractor
- vegetable based
- waste vegetable oil
- Water Reservoir
- Water Tank
- Waterproof
- yellow grease
- Zinc-free Ashless
- Zinc-free Ashless Additives

# Appendix G

## Cross Reference of Vehicle Classification Systems

	<b>PUGET SOUND GREEN FLEETS</b>	<b>CLIMATE REGISTRY</b>	<b>APWA</b>	<b>NAFA</b>	<b>ICLEI</b>
<b>Vehicle Classification</b>	compact & subcompact cars	passenger cars	automobiles (1 <sup>st</sup> digit of code = A)	132x (& 131x)	CARBON CLASS-1 (Auto Compact)
	midsize cars			133x	CARBON CLASS-2 (Auto Intermediate)
	fullsize cars			134x	CARBON CLASS-3 (Auto Full Size)
	small SUVs	light trucks (vans, pickups, SUVs)	pick up trucks (1 <sup>st</sup> digit of code = B)	151x, 14xx	CARBON CLASS-9 (1/4 Ton Pickup, 1/2 Ton Vans)
	large SUVs			152x	CARBON CLASS-8 (1/2 Ton Pickup)
	small pickups			153x, 14xx	CARBON CLASS-7 (3/4 Ton Pickups, Utility Vans)
	large pickups			14xx, 24xx, 34xx, 44xx	CARBON CLASS-17 (Passenger Vans, Para-Transit Vans)
		heavy-duty vehicles	various categories of trucks (1 <sup>st</sup> digit of code = 1, 2, 3, 4, 5, 6 or 7)	5xxx, 6xxx, 7xxx, 8xxx	CARBON CLASS-4 (Sweepers, Flusher, Crane, Heavy Dump Trk., Large Box Trk., Fire Trks)
				27xx, 3xxx, 4xxx	CARBON CLASS-5 (Man-Lift Trk., Medium Dump Trk., Ambulances)
				2xxx, 3xxx,	CARBON CLASS-6 (Bucket Trk., 1 Ton Pickup, Utility Trks, etc.)
		buses	buses (1 <sup>st</sup> digit of code = 8 or 9)	579x, 679x, 779x, 879x	CARBON CLASS-16 (Transit Buses)
		I. construction equipment II. motorcycles III. other non-highway vehicles	motorcycles, scooters and ATVs (1 <sup>st</sup> digit of code = E) and various categories of equipment (1 <sup>st</sup> digit = G, J, K, P, R and S)	many different codes	CARBON CLASS-98 (Misc: ATV, Mower, Backhoe, Grader, Tractor, Sweeper, Compressor, Water Craft, Forklift, etc.)