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The Evergreen Fleets Initiative

Puget Sound Clean Air Agency
and
Puget Sound Clean Cities Coalition
2008

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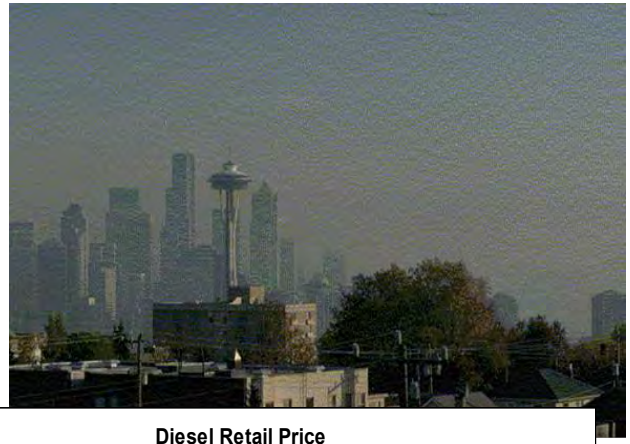
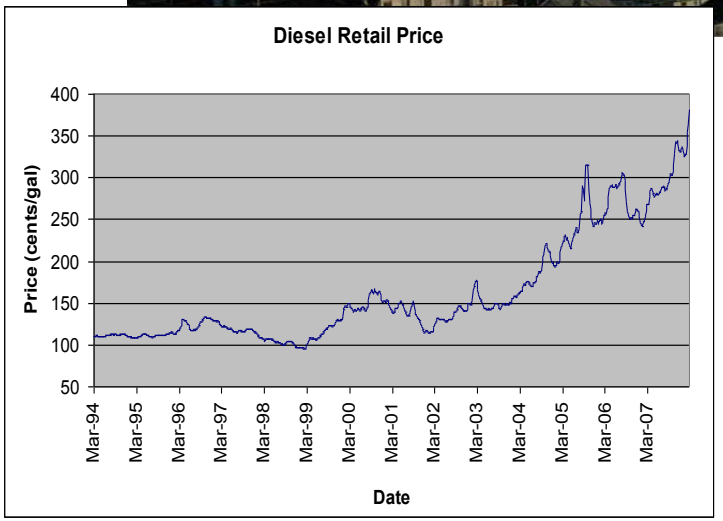
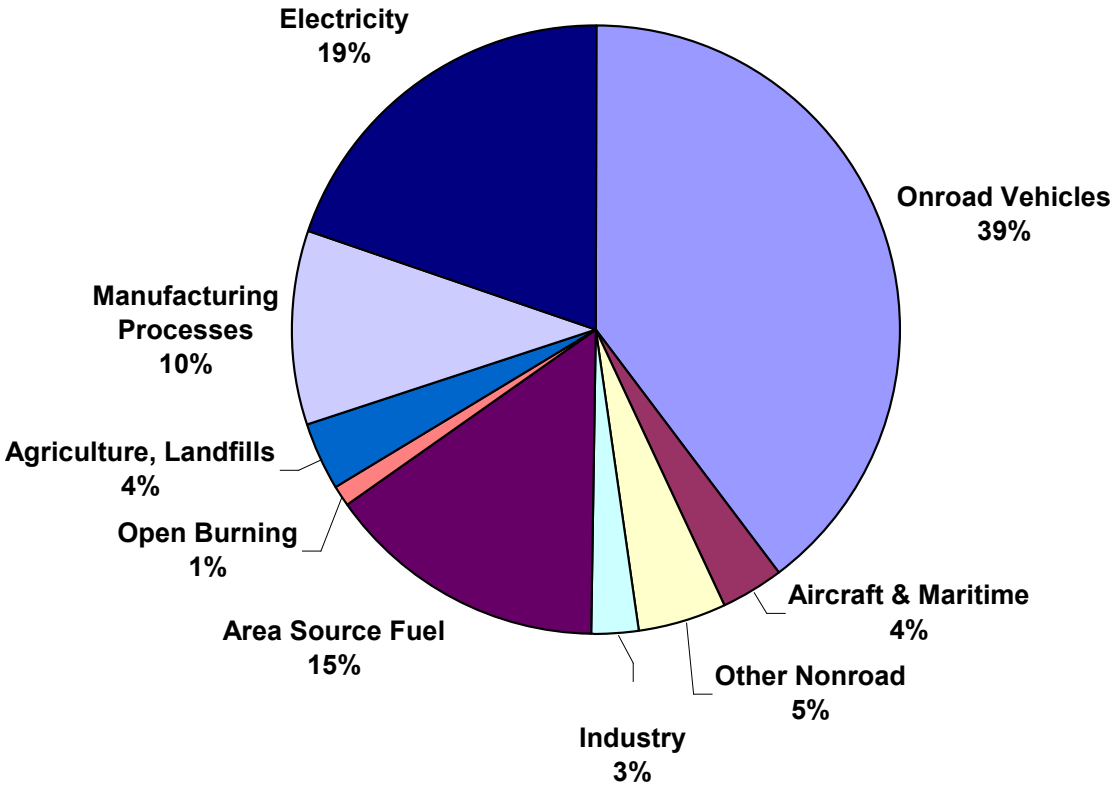
Why fleets?

- Air quality impacts
  - "Traditional" pollutants
  - Greenhouse gases
- Energy security
- Rising fuel costs
- Opportunity to lead by example





Why Fleets?


Electricity
19%
Onroad Vehicles
39%
Manufacturing
Processes
10%
Agriculture, Landfills
4%
Open Burning
1%
Area Source Fuel
15%
Aircraft & Maritime
4%
Other Nonroad
5%
Industry
3%

Climate Change

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- Greenhouse gas reporting requirements
- Aggressive targets for our local governments and communities
  - US Cool Counties Agreement
  - US Mayor's Climate Agreement
  - Washington State Legislature and Governor Executive Order commitments
  - Regional groups, CCX, Western Climate Initiative
  - Federal action?

Public & Environmental Health

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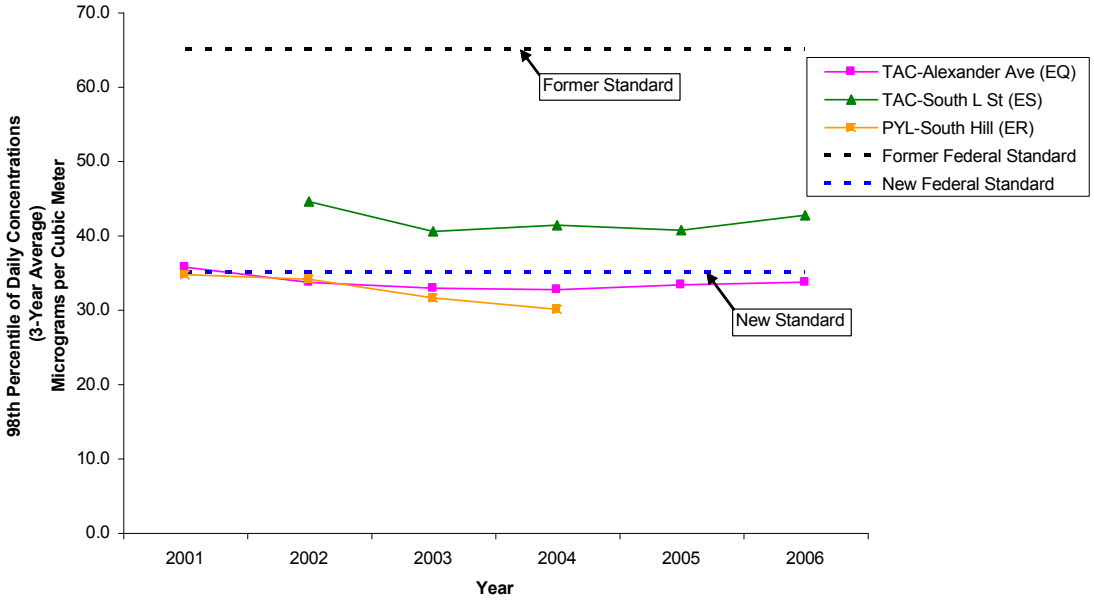
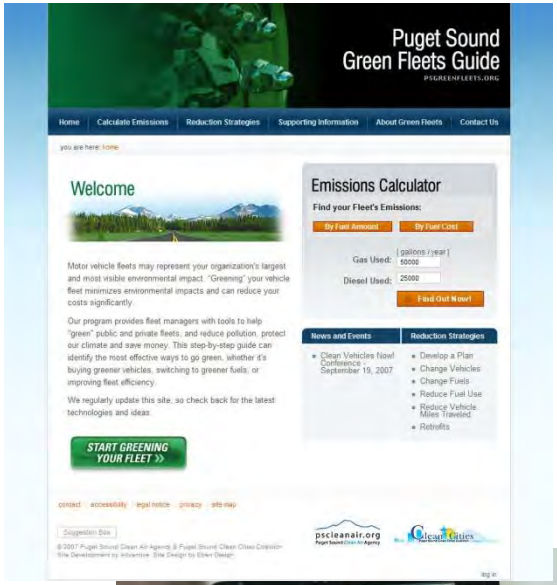
$PM_{2.5}$ Daily for Pierce County
3-year average of the 98th percentile of daily concentrations
Reference and Continuous Methods



Note: All South L data are FRM from 2000- 2006. Alexander Avenue data are FRM from 1999- 2002 and nephelometer from 2003-2006.
South Hill data are FRM from 1999-2002 and nephelemeter from 2003-2004; incomplete nephelometer data was collected from South Hill in 2005.

Background

- Debuted at King County's Clean Vehicles Now Conference in September 2007
- Public fleet managers agreed to work together to share data, develop standard, etc.



Puget Sound Green Fleets Guide

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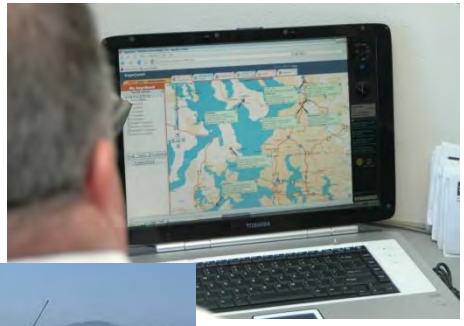
- Checklist of steps
- Workbook style
  - Explains each step
  - Walks you through the process
- Section on green fleet practices
  - Change your vehicles
  - Change your fuel(s)
  - Increase your efficiency
  - Decrease your utilization



Puget Sound Green Fleets Guide

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Welcome

Motor vehicle fleets may represent your organization's largest and most visible environmental impact. "Greening" your vehicle fleet minimizes environmental impacts and can reduce your costs significantly.

Our program provides fleet managers with tools to help "green" public and private fleets, and reduce pollution, protect our climate and save money. This step-by-step guide can identify the most effective ways to go green, whether it's buying greener vehicles, switching to greener fuels, or improving fleet efficiency.

We regularly update this site, so check back for the latest technologies and ideas.

START GREENING YOUR FLEET »

Emissions Calculator

Find your Fleet's Emissions:

By Fuel Amount | By Fuel Cost

[gallons / year]

Gas Used: 50000

Diesel Used: 25000

Find Out Now!

News and Events

- Clean Vehicles Now! Conference - September 19, 2007

Reduction Strategies

- Develop a Plan
- Change Vehicles
- Change Fuels
- Reduce Fuel Use
- Reduce Vehicle Miles Traveled
- Retrofits

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Evergreen Fleets Performance Standard

- ***Purpose***
  - Define what is a “Green Fleet” for Puget Sound fleets
  - Recommend a suite of strategies and greenhouse gas reduction targets
  - Develop a certification process and tools to assist fleets

- ***Process***
  - Advisory Committee: fleet managers and leadership from regional municipalities
  - Agency and Coalition staff led meetings, provide technical support

- ***Phase I: January – June 2008***
  - Develop a working draft “Green Fleets Performance Standard”

- ***Phase II : July – February 2009***
  - Conduct Pilot Program with voluntary fleets
  - Develop certification processes
  - Revise performance standard to reflect lessons learned in the pilot project

Washington State Greenhouse Gas Reduction Goals

Legislature and Governor's Goals

- **SB 6001/ESSHB 2815: Mitigating the Impacts of Climate Change**
- **Reach 1990 levels by 2020**
- **50% below 1990 levels by 2050 *which is ~55% below 2007 levels by 2050***

Program Entry Requirements

- Baseline data
  - Vehicle Classes
    - Cross-referenced with NAFA, ICLEI, APWA
  - Fuel use and fleet utilization
  - Number of retrofit diesel vehicles
  - Greenhouse gas emissions data
- Green fleets work plan
- Signed commitment from high level in the organization

Strategies

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- **Policy, Communication and Training**
  - Idle reduction policy or program
  - Training on fuel-efficient driving
  - Incentive or reward program around fuel use and/or vehicle/equipment utilization
  - Advances in green fleet management (for bonus points)
- **Vehicle and Equipment Purchasing**
  - "Right-size" requirement or procedure for fleet purchases
  - Green fleet purchasing program
  - Green fleet provisions into bid criteria

Strategies

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- **Vehicle and Equipment Use/Fuel Use**
  - Green fuel procurement strategy
  - Ensure flex-fuel, bi-fuel and/or dual-fuel vehicles are fueled with green fuels
  - Data management systems
  - Fleet use efficiency measures
  - Diesel emission reduction program
- **Vehicle & Equipment Maintenance**
  - Preventive maintenance program
  - Recover, reduce, reuse program for maintenance products
  - Environmentally friendly products in vehicle maintenance

Recommended Scoring

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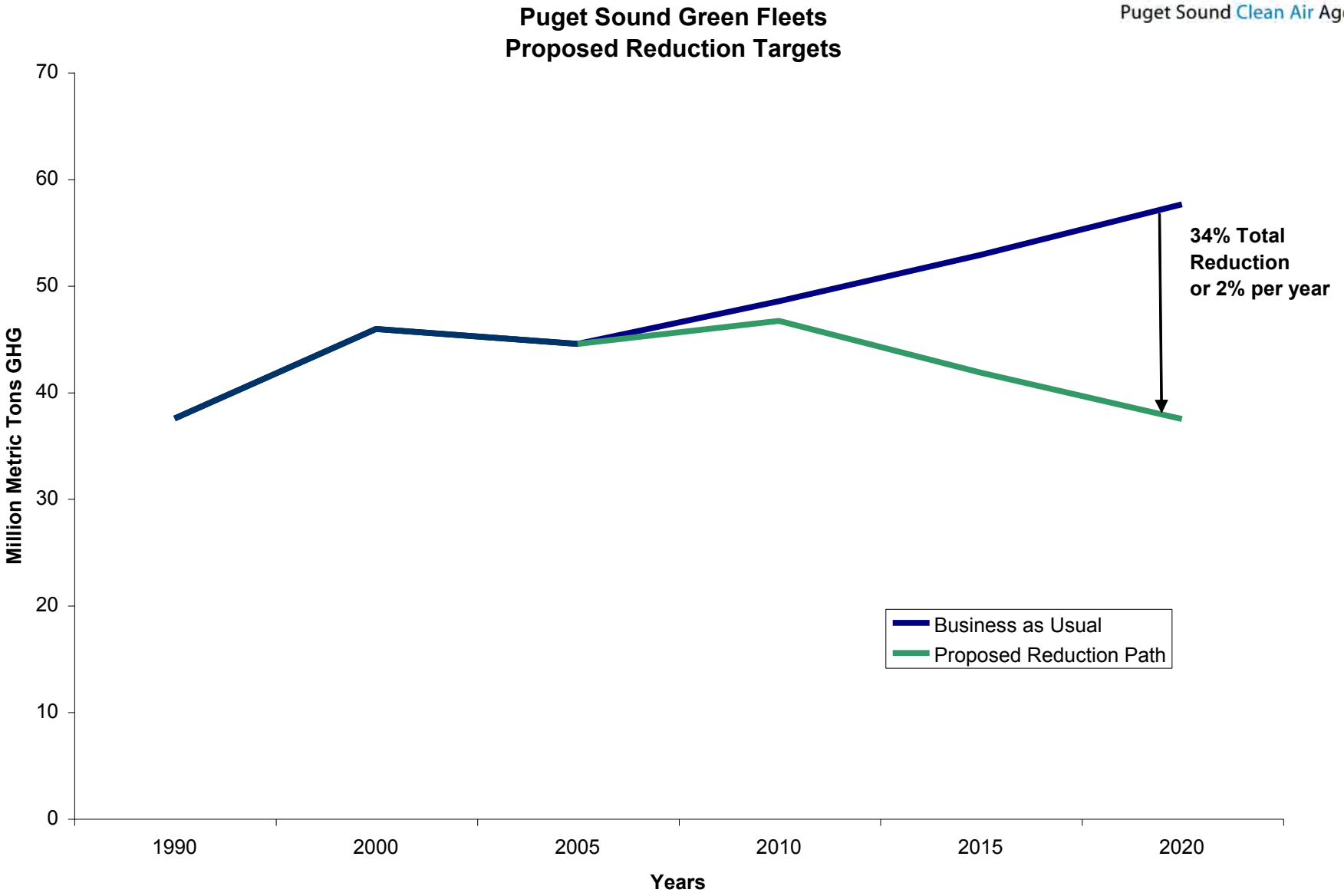
Level	Numeric Goal	Strategies
Membership	None	Reporting requirement Green fleet plan Signed commitment
Silver	Obtains highest score for each strategy but does not reduce absolute GHG levels. 50% of diesel vehicles meet minimum requirements set in standard.	Implements all required strategies
Gold	Absolute reduction of 2% per year from 2011 to 2020. 75% of diesel vehicles meet minimum requirements set in standard.	Implements all required strategies
Platinum	Absolute reduction greater than 2% per year from 2011 to 2020, able to bank future reduction credits. 90% of diesel vehicles meet minimum requirements set in standard. Light-duty vehicles have average air pollution score of 6 or better.	Implements all required strategies


Puget Sound Green Fleets
Proposed Reduction Targets
Million Metric Tons GHG
70
60
50
40
30
20
10
0
1990
2000
2005
2010
2015
2020
Years
34% Total Reduction or 2% per year
Business as Usual
Proposed Reduction Path

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Implementation of Phase II: Pilot Program

- **Participants:** 5 volunteer municipalities of different sizes, needs
  - King County
  - Snohomish County
  - City of Snoqualmie
  - City of Tacoma
  - City of Kirkland
- **Verifying Agency:** Clean Air Agency, Clean Cities Coalition
- **Goals:**
  - Test and refine reporting requirements and scoring system
  - Develop certification processes

Implementation Tools

- Reporting Template
  - Vehicle information by class
  - Fuel use
  - Greenhouse gas emissions
- Implementation Checklist

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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)	Biodiesel blend	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														
Police														
Fire														

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Comparison of Fleet Information

	Large Fleet	Small Fleet
# of Vehicles	954	119
Gallons of Fuel	984,226	31,072
2007 CO2-eq Emissions (metric tonnes/year)	10,062	379
Target Emission Reduction per Year Platinum Certification (metric tonnes)	180	7
Target Emission Reductions for 2020 Platinum Certification (metric tonnes)	2,527	95

Common Issues with Fleet Reporting

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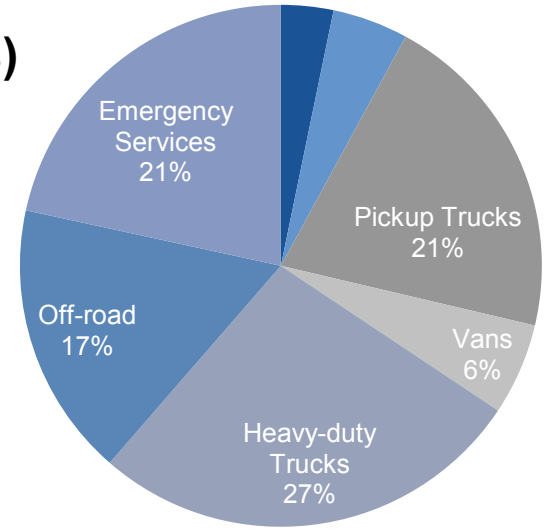
- **Vehicle Categories that Contribute to 10% or more of GHG Emissions**
  - **Emergency Vehicles (Police, Fire)**
  - **Off-road and Construction Equipment**
  - **Pickup Trucks**
  - **Heavy-duty Trucks (some fleets)**



Strategy Implementation

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- Green fleet strategy examples from pilot fleets
  - Executive Order
  - Resolution
  - Budget Approval
  - Climate Action Plan
- What we're looking for…
  - Approval at the highest level
  - Addresses entire fleet
  - Financial resources

Vehicle Purchasing

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- **Green Fleet Purchasing – Examples**
  - **Policy to replace 15% of non-law enforcement vehicles with vehicles powered by biofuels or electricity**
  - **New Fleet Replacement Policy defines fuel mileage threshold for future vehicles by vehicle class**
- **What we're looking for:**
  - **Meets one of these criteria:**
    - **Vehicles listed as a "Smartway" vehicle in EPA's Green Vehicle Guide**
    - **Vehicles that achieve at least 25 percent better-than-average miles per gallon (mpg) for each vehicle class**
    - **Vehicles that operate on renewable fuel (including electric).**
    - **Exception because of performance requirements (fully documented)**

Vehicle Purchasing

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- "Right Size" Requirement – Examples
  - Work with users to ensure replacement vehicles match work requirements
  - New Fleet Replacement Policy would address the process to define right sizing of equipmentWhat we're looking for:
- What we're looking for:
  - Requirement or procedure in place for new procurement request
  - Communication to appropriate audiences

Communication and Training

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- **Idle Reduction – Examples**
  - **Anti-idling policy**
  - **Training**
- **What we're looking for:**
  - **Idle-reduction policy statement**
  - **Education/enforcement program**
  - **Mechanism in place to measure effectiveness unless automated**

Vehicle Purchasing

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- Conduct Training on Fuel-Efficient Driving Practices–Examples
  - Communication with department heads and elected officials
  - Provide fuel saving tip sheets to drivers
- What we're looking for:
  - Communication with drivers

Advances in Green Management

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- **Examples**
  - Lead Infrastructure Development
  - Joined the Plugin Center PHEV Pilot Project
  - Purchased first medium duty diesel electric hybrid service truck
  - Retrofit for Ethanol Fueling
  - CNG Slow Fill & Vehicles
  - Test a plug-in hybrid
- **What we're looking for:**
  - Innovation
  - Taking a risk

Implementation Checklist

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- Assists fleets in rating their fleet – common understanding
- Used by Clean Air Agency/Clean Cities Coalition to verify fleet information

Questions to be addressed

- Organizational Boundaries (transit fleets)?
- Is there a difference in expectations between a small fleet and a large fleet?
- Recognizing work that has been done in previous years?
- Setting minimum requirements for the existing fleet
  - Onroad Diesel Vehicles – Percentage of fleet needs to meet the following criteria:
    - 2007 or Newer Model
    - Retrofit
    - Repower
    - Replace with alternative fuel vehicle
  - "Smog" Rating
    - Use EPA's Green Fleet Vehicle Guide

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Next Steps

***November - December 2008*: Finish pilot project, work with advisory committee to finalize standard**

***January – March 2009*: Update website, ensure agency certification processes in place. Begin outreach to private fleets**

***April 2009*: Officially launch Evergreen Fleet Standard!**

Case Study: Small Manufacturing Business

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- Building industry sector
- Implemented Fleet Management Software for product delivery

Initial cost of software:	$3,000	
Monthly charges: $147 *18 months	$2,646	
Total Costs	***$5,646***	
Cost Savings over 18 months:		
$1,500 per month in labor and fuel savings * 18 months		$27,000
$1,300 per day (fixed costs) * 4 days/mo= $5,200/mo * 18 mos		$93,600
Total Savings (18 mos)		***$120,600***
Costs		***$5,646***
Net Benefit:		**$114,954**

Case Study: Snohomish County Public Fleet

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- Vehicle and fuel strategies (1,400 fleet vehicles)
  - 70% of diesel vehicles run on B20; remainder on ULSD
  - 133 diesel vehicles retrofitted with DOCs by 2009
  - Replace a minimum of 37 vehicles per year with clean vehicles
- "Fleet Management Solutions GPS/AVL" software for solid waste vehicles
- Fleet growth of approximately 14% in past 7 years
- No increase in fuel use
  - Due to vehicle upgrades and fleet management software

Questions?

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