egon/Washington



### Sustainable Fleet Management

"WE cannot afford more of the same timid politics when the future of our planet is at stake. This is not the future I want for my daughters. It's not the future any of us want for our children. And if we act now and we act boldly, it doesn't have to be."

Barack Obama, Portsmouth, NH, 10/08/07

- Merge efficient Management Systems that embrace the intent of President's Executive Orders 13423 and 13514
- •Use Preventative Maintenance Checks and Services (PMCS).
- Plan-Do-Check-Act, Environment Management System (EMS)
- · Pool a percentage of your fleet.
- Use Reservations Systems to end sense of "ownership"
- Use resources such as GSA Fleet Drive Through
- Bridge the infrastructure gap by using Hybrid Technology, Flex Fuel Vehicles (E85), Compressed Natural Gas (CNG)
- Navigation Errors in Fleet Management: "The 1-in-60 rule applies. For every degree you get off-course, you're a mile away from your goal at 60 miles." (figuratively speaking) (EMS)







#### "TARGETS OF OPPORTUNITY"



#### Fleet Managers have many "targets of opportunity" exist for reducing fleet costs, for example:

- Eliminate vehicles from the fleet that are not being properly utilized or that are unnecessary to meeting your agency's mission. Consider not only the vehicle's monthly mileage, but also the time a vehicle is used.
- Increase fleet utilization through pooled use of vehicles rather than numerous vehicles assigned to individuals or single departments.
- Encourage the use of local modes of transportation such as taxis, public transit, and shuttle services.
- Downsize to vehicles that will still enable your drivers to perform their duties. The acquisition of 4 x 4 sport utility vehicles should be carefully analyzed to investigate whether or not a smaller 4 x 2 may be more appropriate.
- Justify maintaining medium and heavy vehicles that have very low utilization (time and mileage). Consider pooling
  these vehicles for centralized use or partner with other agencies to lease the equipment on an as needed basis.
- Utilize Load Plans and standardization for your Pool Fleet
- Use Fleet Reservation Programs for maximum Fleet Utilization
- Plan, Do, Act, Check (EMS)
- Utilize Preventative Maintenance Checks and Services (PMCS) before, during, and after checks
- Utilize Hybrid, Flex Fuel Vehicles, and CNG vehicles
- Bridge Infrastructure gaps with Hybrid Vehicles
- Involve your employees in PMCS and EMS
- Encourage ECO Driving Techniques
- Pool a percentage of your Fleet to improve your utilization









#### **BAD HABITS IN FLEET MANAGEMENT**



#### Fleet Managers have the potential to develop some bad habits, for example:

- Highly decentralized vehicle assignment policies- vehicles and equipment are owned and maintained by numerous independent units of a government entity.
- Vehicles that are assigned to individuals rather than used as a pool vehicle decrease vehicle utilization.
- Determining your fleet size based on peak demand. Fleet operations that meet 100% demand in the middle of the week may have many idle vehicles at the beginning and end of the week.
- Employees drive to all their meetings instead of using local modes of transportation. A short trip to an all day meeting means a vehicle has less utilization.
- Inadequate maintenance programs. This means excessive downtime for vehicle repairs and requires a larger fleet to provide replacement vehicles for drivers, and a larger Carbon Foot Print.
- Unresponsive to changing technology and working conditions. Retaining vehicles that are not suited to the work requirements may increase fleet costs and reduce worker productivity.
- Utilizing Privately Owned Vehicles can drive up your costs at .34 per mile, or at the existing reimbursement rate.

These are just some examples of fleet management bad habits to look for when reviewing your fleet OPS.

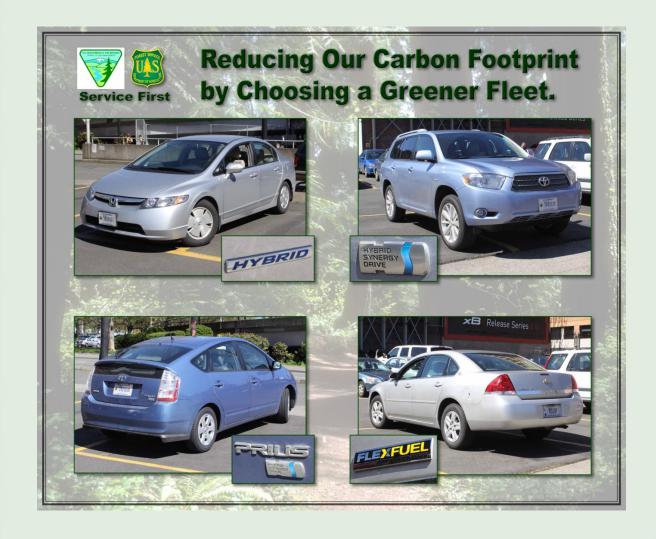




regon/Washington



## Reduce your Carbon Footprint by using Hybrids and Flex Fuel Vehicles











#### **Embrace Executive Orders 13423 & 13514**

"We cannot afford more of the same timid politics when the future of our planet is at stake.

Barak Obama, Portsmouth, NH, 10/8/07

- Energy Intensity Reduction
- Energy Efficiency
- Renewable Energy
- Vehicle Efficiency reduce fleet total consumption of petroleum products by 2%/yr
- Increase non-petroleum-based fuel consumption 10%/yr
- Use plug-in hybrid vehicles when commercially available
- Implementation of sustainable practices





#### **Energy Impact Score**

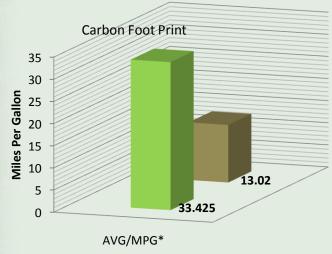
#### Did you know?

- The U.S. uses more than 20 million barrels of oil each day
- . 60% of our oil is imported
- · 68% is used for transportation
- · Oil imports cost us \$270 billion annually

The Energy Impact Score shows the number of barrels of petroleum the vehicle will likely consume each year.\*

Annual Petroleum Consumption

(1 barrel=42 gallons)



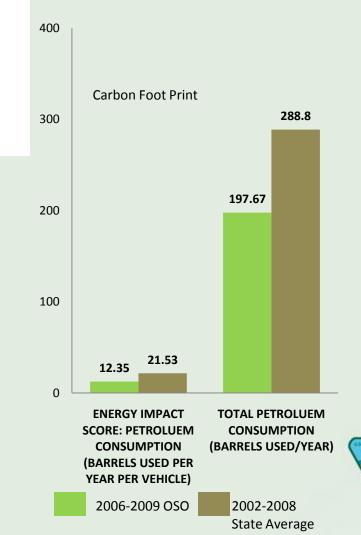
2002-2008

State Average

\*Based on FuelEconomy.gov

2006-2009 OSO

The Oregon/Washington
BLM State Director is
committed to changing the
BLM Carbon Footprint, and
improving the Environment





### If you are still not convinced about going **GREEN** . . . .

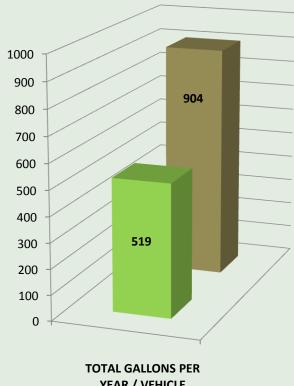
#### **Lets talk MONEY \$\$\$\$**

➤ The average fuel cost per vehicle from 2002-2008 for the Non-Green Fleet" was \$7,815.57 (averaging about \$0.66/mile)

➤ The average fuel cost per vehicle from 2006-2009 for OSO Green Fleet was \$3,582.12 (averaging about \$0.30/mile)

➤ The average fuel consumption per employee for the Non-Green Fleet was 60 gallons of gasoline per employee each year

➤ While the OSO Green Fleet only consumed 21.8 gallons of fuel per employee each year



**YEAR / VEHICLE** 







Our nation has both an obligation and self-interest in facing head-on the serious environmental, economic and national security threat posed by global warming.

John McCain





## My Dad served on the USS Saratoga in WWII.



The USS Saratoga had a unique Carbon Footprint during its WWII service: CV3 1941-1946

Global warming: "How much carbon dioxide is enough, Einstein?"

Some studies have shown that inconceivable catastrophic changes in the environment will take place if global temperatures increase by more than 2° C (3.6° F)

Your environment can affect your future – it did for my Dad!



#### **USS Saratoga CV3**

Armored ship running @ 38,746 tons, carrying crew of 2,122

**Powered by 16 boilers (300 psi)**; geared turbines and electric drives; 4 shafts; 180,000 shp (design)

Built to go 10,000 nautical miles @ 10 knots; top speed 33.25+ knots

4 twin 8"/55 gun mounts; 12 single 5"/25 gun mounts and 90 aircraft

**Fuel Capacity 55,400 Barrels** 

#### **Fuel Consumption CV3 Class Carrier (Saratoga)**

R. <i>P.M.</i>	Gal./hr.	<b>Knots</b>	Gal./eng. mi
100	2,654	11	245.7
301	31,572	31.1	1,182.5 "Battle Stations"









# Time Magazine January 14, 1994 INVESTIGATIONS: THE WIDENING FALLOUT (Operations Crossroads)

By JILL SMOLOWE (Reported by Sheila Gribben/Chicago, Scott Norvell/Atlanta, Bruce van Voorst/Washington and Susanne Washburn/New York)

Stanfill followed orders in 1946 to board the USS Saratoga CV3 after two 23 Kiloton Nuclear blasts went off nearby during "Operation Crossroads".

His orders detailed his role in Operation Crossroads near the Bikini atoll in the western Pacific. Target Coordinator's Memorandum did not pretend that the mission was risk-free.

It warned, "Do not pick up any souvenir pieces . . . they may be radio-active and may cause serious illness and even death." The next instruction: "Do not eat food and drink water . . . until it has been inspected."

Stanfill and the other 11 members of "Team Able" were not alarmed by this peacetime mission to inspect the pipes aboard the U.S.S. Saratoga.

Paragraph 5 assured, "Before Team Able comes aboard to do its work, the ship will have been inspected for radio-activity by qualified technicians . . . who will notify the proper authorities that the ship is safe for reboarding."





40,000 Servicemen were involved in this test. Atmospheric changes affect everyone.

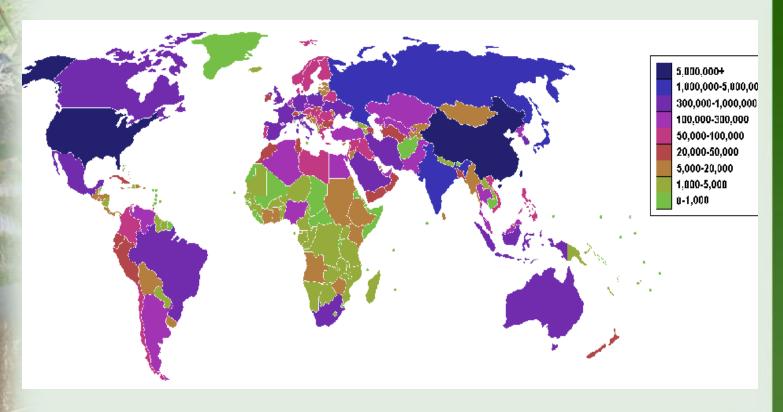
Carbon Dioxide (CO2) and Hydrocarbons go hand in hand.
Hazardous Air Pollutants (toxic air pollutants) can cause cancer
and other serious health effects such as birth defects.

Examples of air pollutants found in gasoline are benzene, toluene, and xylenes. Particulate Matter affects health.





# Carbon Footprint by Nation in thousands of "Metric Tons"



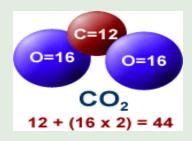




# How can a gallon of gasoline produce 20 pounds of carbon dioxide?

A gallon of gasoline weighs about 6.3 pounds Can produce 20 pounds of carbon dioxide (CO2) when burned.

Most of the weight of the CO2 comes from oxygen in the air. Carbon and hydrogen separate when gasoline burns



Each molecule of CO2 has an atomic weight of 44 (12 from carbon and 32 from oxygen)

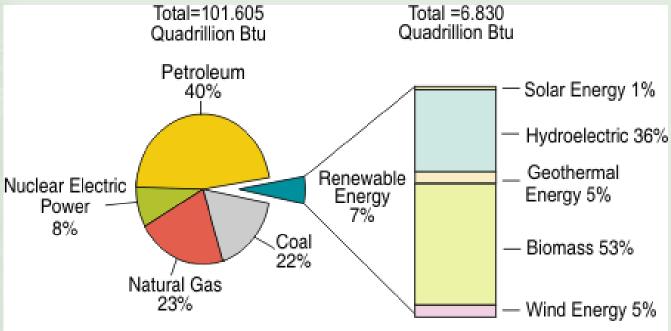
Calculate the CO2 produced from a gallon of gasoline by multiplying by 44/12 or 3.7.

Carbon in a gallon of gasoline weighs 5.5 pounds: weight of the carbon multiplied by 3.7 equals 20<sup>#</sup> of CO2!





### **Energy Consumption by Source 2007**



Note: Sum of components may not equal 100 percent due to independent rounding.

Source: EIA, Renewable Energy Consumption and Electricity Preliminary 2007 Statistics, Table 1: U.S. Energy Consumption by Energy Source, 2003-2007 (May 2008).



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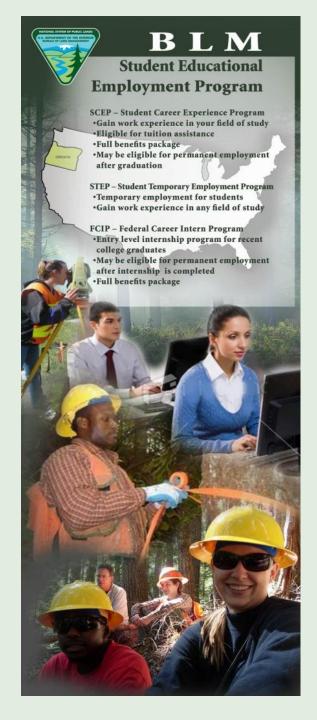


## **Carbon foot Prints**









Whose future is at stake?



## People are important, their safety is important







#### **Reduce your Carbon Foot Print Eco-Driving**



#### **Eco-Driving**



What exactly is eco-driving? Eco-driving is a style of driving that significantly reduces the impact of gasoline on the environment. It does this by reducing fuel consumption and improving the automobile's efficiency.

What are the benefits of eco-driving? By practicing eco-driving you can be a safer driver, reduce exhaust emissions, save fuel, and save yourself some money at the gas pump.

How does Eco-driving work? Eco-driving is classified as a style or type of driving. It works by reducing an automobile's exhaust emissions through the automobile's operation or driving. The United Kingdom plans in the near future to require an eco-driving test to accompany their standard driver's license test. Listed below are a few helpful tips to becoming an eco-driver.

- Accelerate and decelerate smoothly. By accelerating and decelerating smoothly, an automobile is able to make more efficient use of its power. This also means better fuel mileage, which translates into a reduced consumption of fuel.
- Avoid excess idling in non-traffic situations. While sitting at a drive-through or other stopped or parked situation, it is best to shut off an automobile. This will reduce fuel consumption and wear on the automobile's engine.
- Observe the posted speed limits. Drive either at or under the posted limit. The EPA estimates a 10-15 percent improvement in gas mileage by driving
   55 mph instead of 65 mph. In addition to saving gas by observing the posted speed limit, there is a reduced risk of getting a speeding ticket as well as a reduced risk of getting in a fatal accident.
- Keep tires properly inflated to the recommended pressure. This alone can reduce the average amount of fuel you use by 3-4 percent.
- Maintain a steady speed. The use of cruise control on the highway is helpful (except in hilly terrain), because it decreases gas pedal activity.
- Air conditioning should be used selectively to reduce the load on your engine.
- Remove excess weight. All unnecessary weight (such as unneeded items in the trunk) makes the engine work harder, consuming more fuel.
- · Plan and consolidate your trips. This will enable you to bypass congested routes and will lead to less idling, fewer start-ups, and less stop-and-go traffic.
- Share a ride and/or carpool. This reduces the total number of vehicles in operation. The fewer vehicles in operation at any given time will result in fewer congested roads, less pollution, less gasoline use, and reduced travel time.
- Avoid "topping-off" the gas tank when refueling. Overfilling your gas tank could result in spilled gasoline that contributes to air pollution when it
  evaporates.
- Today's engines don't need to be warmed up in the winter. Prolonged idling creates excess emissions and wastes fuel.

By following these simple tips you are on your way to saving time, money, and the environment we all live in.

The information in this handout was provided from Forest Service Engineering Manual 7130-2, "Driver Operator Guide"





EMS is a "Significant Driving Force!" BLM and USFS are collocated in many locations.

### What is EMS?

"A systematic approach to identifying and managing an organization's environmental obligations and issues."





# The PMCS program has its roots in WWII. PMCS will improve proficiency and efficiency. It will identify problems and trends!







## PREVENTATIVE MAINTENANCE CHECKS & SERVICES (PMCS)

#### **Before Operation**

- Inspect Vehicle
  - Check Tire Pressure
  - Check Fluid Levels

#### **During Operation**

- Annotate Fuel Purchase
- Retain Receipts
- Check Fluid Levels
- Manage Risk

#### **After Operation**

- Vehicle Fueled
- Dome Light Off
- Annotate Ending Miles
- Remove Garbage

If the vehicle is unsafe to operate for any reason, return keys to Fleet Manager, and make a new reservation utilizing a different vehicle.

Wear Seat Belts & Drive Defensively

Have a Safe Trip



regon/Washington



This old Army Jeep was converted to a Fire Fighting vehicle back in the day. BLM and US Forest Service have stepped up to the H1- HUMVEE's, Heavy's, and other types of vehicles. This vehicle, sustained in the Military by PMCS for years, is still functional!





## **BLM Heavy**





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# H1 HUMVEE – not to be confused with the H2







Be Organized.

Get the PMCS Standard in front of every vehicle.

Every operator can inspect their vehicle before they leave.

Do they? Some do, most don't.

You must facilitate the culture change to safety, and build the Team! Employee lives depend on your actions.



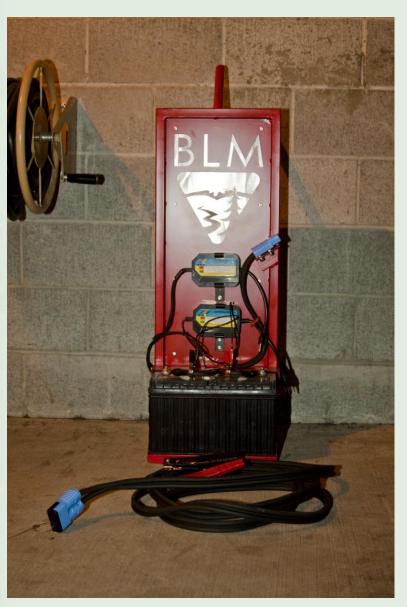


# Sustain your Fleet with the right equipment – it's important!





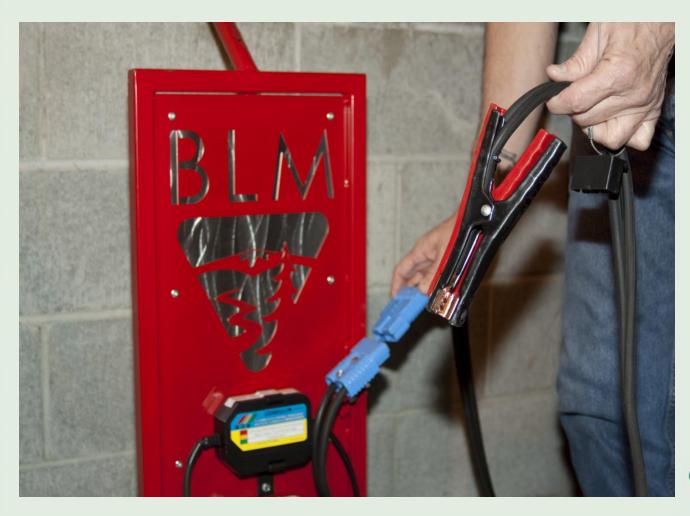




Jump Battery, Trickle Charger in one. Have the right equipment for the right job to accomplish the Mission. Some **Hybrid Batteries have** to be Trickle Charged for 24 hours once dead, before they are mission capable!



## Use technology to Continue the Mission





## Slave Cable, why lift your hood







Encourage employees to get involved in PMCS and EMS. "Change the Culture in favor of PMCS/EMS, and Safe practices will follow.





#### **PMCS Lessons learned in Vietnam**

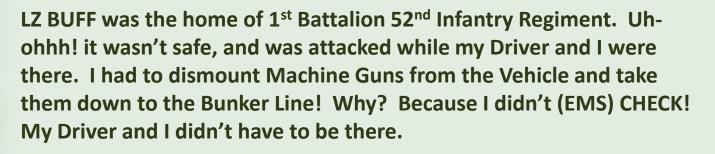
As a young Buck Sergeant in Vietnam, PMCS shaped my future – that is – failure to follow PMCS.

On this occasion my Driver failed conduct PMCS for several days.

I had asked him if he had done PMCS, but I didn't check (EMS) his work! The vehicle broke down in the middle of a Mission. We were towed to LZ BUFF, which was near, and the rest of my crew was transferred to other vehicles for the duration of the Mission. My Driver and I stayed with the vehicle on LZ BUFF.

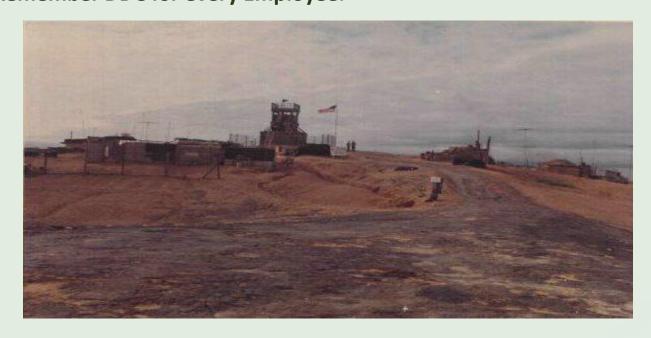






LZ BUFF was renamed LZ Stinson after it had been over run and the Commander was killed. Those lessons remain decades later, as a First Sergeant of an Armored Cavalry troop, and now as a Fleet Manager. PMCS, and EMS have a significant impact.

Keep Employees safe by conducting PMCS and EMS. You will avoid Accident Investigations! Plan, Do, Act, Check. Remember DDC for every Employee.







# The point is Fleet Managers have to Plan, Do, Check, Act (EMS)

### What is Plan Do Check Act?

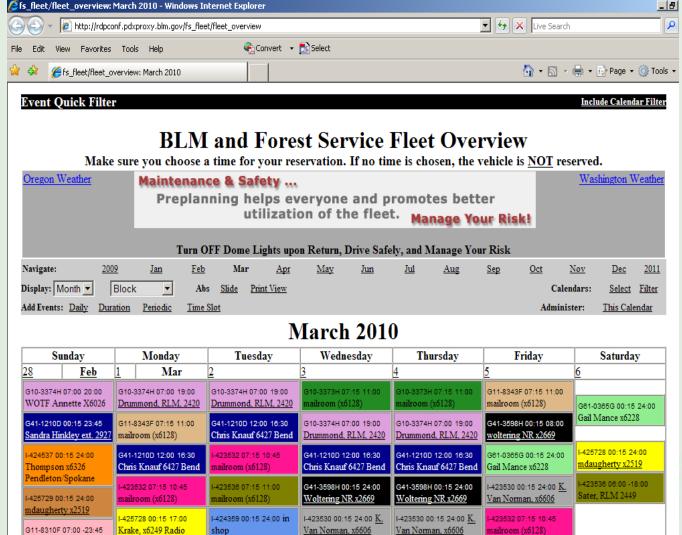
- Plan: establish objectives and processes in accordance with environmental policy
- **Do:** implement the processes
- Check: monitor and measure processes and report the results
- Act: take actions to continually improve performance of the environmental management system





ICal Fleet Reservation System: "Take Away Ownership" and you will increase your Utilization reducing your Carbon Footprint. POOL a percentage of Vehicles!

🌈 fs fleet/fleet overview: March 2010 - Windows Internet Explorer







## Pool a percentage of your Fleet to start improving "Utilization"

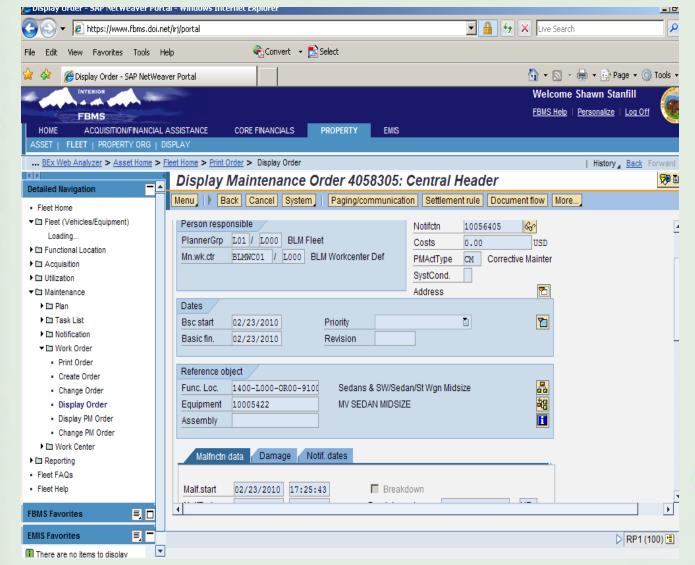
e Calendar -	- Windows Internet Explorer		_
		Available Calendars	
		(Group: fs fleet)	
Mini	Name	Title	
Mini	fleet overview	BLM and USFS Fleet Overview	
Mini	g103373h	G10-3373H (Pontiac G6 Sedan 30MPG) #76	
Mini	g103374h	G10-3374H (Pontiac G6 Sedan 30MPG) #17	
Mini	g103376h	G10-3376H (Malibu Hybrid, 29MPG) #30	
<u>Mini</u>	g103377h	G10-3377H (Malibu Hybrid, 29MPG) #27	
Mini	g118308f	G11-8308F (Chevy Impala) #18	
Mini	g118309f	G11-8309F (Chevy Impala) #13	
<u>Mini</u>	g118310f	G11-8310F (Chevy Impala) #12	
<u>Mini</u>	g118343f	G11-8343F (GM Impala) #20	
<u>Mini</u>	g411210d	G41-1210D (Dodge Van) #16	
<u>Mini</u>	g413598h	G41-3598H (Voyager Van, 24MPG) #39	
<u>Mini</u>	g610365g	G61-0365G (Jeep Cherokee-4WD) #15	
<u>Mini</u>	<u>i423530</u>	I-423530 (Toyota Prius) #25	
<u>Mini</u>	<u>i423532</u>	I-423532 (Toyota Prius Hybrid) #19	
<u>Mini</u>	<u>i423536</u>	I-423536 (Toyota Prius Hybrid) #24	
<u>Mini</u>	<u>i424359</u>	I-424359 (Toyota Camry Hybrid) #29	
<u>Mini</u>	<u>i424536</u>	I-424536 (Honda Civic Hybrid)#42	
<u>Mini</u>	<u>i424537</u>	I-424537 (Honda Civic Hybrid)#40	
<u>Mini</u>	<u>i424538</u>	I-424538 (Honda Civic Hybrid) #41	
<u>Mini</u>	<u>i425728</u>	I-425728 (Toyota Hylander) #28	
<u>Mini</u>	<u>i425729</u>	I-425729 (Toyota Hylander) #14	
		Available Groups	
Group:		Description	
Spokane	BLM	Spokane BLM Fleet Calender	
Spokane	GSA	Spokane GSA Fleet Calender	



Oregon/Washington



## Maintenance is Key to reducing your Carbon Footprint

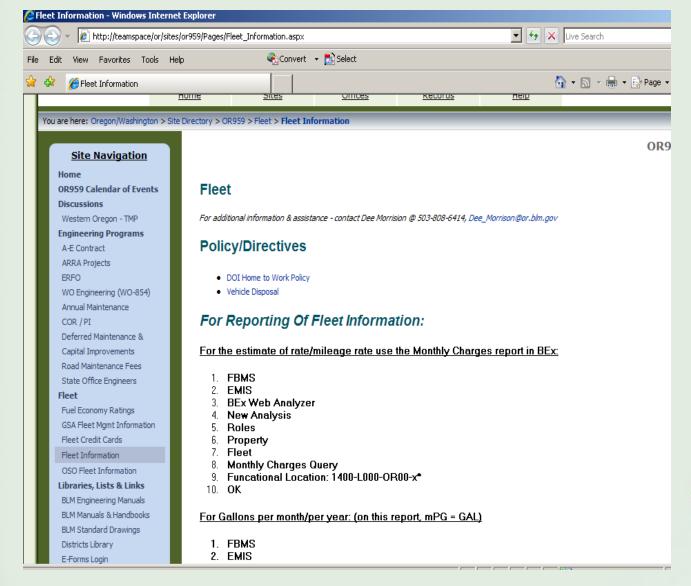




regon/Washington



## BLM Oregon State Office uses a SharePoint Site for Fleet (team space) data





· Repair Service and Vehicle

Maintenance (MCC)

#### **Utilize your GSA Fleet Representative**

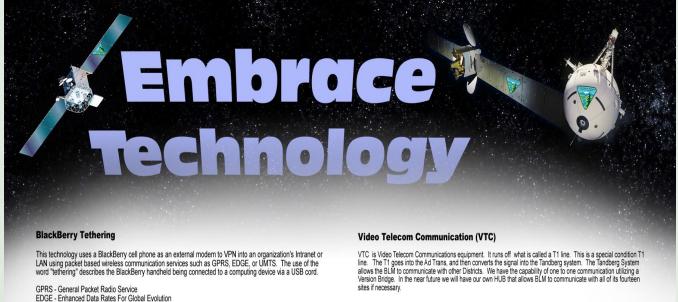


information for multiple vehicles at one time.



No Fear, "Embrace Technology" Why? Because it is the Future, and the Future is Now (Continuity of Operations, Quake 09)

"Humanity's future hinges in this century on its ability to utilize technology and change the environment"



UMTS - Universal Mobile Telecommunication Service

#### **Satellite Tethering**

This technology uses a satellite phone as an external modem connected to a computing device to connect to the Internet via a satellite provider's satellite network. Typically this technology is less versatile in that it requires direct line of sight to the skyline to establish communications short of an outside antenna cable run to the inside of a building. Currently the connection speeds of satellite tethering are too slow to enable a reliable VPN connection into an Intranet or LAN.

#### Satellite phone

A satellite telephone, satellite phone, or satphone is a mobile phone that communicates directly with orbiting communications satellites. Depending on the architecture of a particular system, coverage may include the entire Earth, or only specific regions.

- Satellite phones use a constellation of satellites to communicate.
- In the case of Iridium Satellite Phone they have constellation of 66 ea.
- The Global Star Satellite Constellation is significantly smaller at a lower orbit and is less effective.
- However, the Global Star Text messaging capabilities are at a somewhat higher bode rate that Iridium.
- There are pluses and bonuses depending on the system.

BLM - 55 repeaters on 10 districts using UHF or VHF radio frequencies - 20 of these. State Office (SO) can ONLY reach the Salem repeater. BLM has capability of reaching USACE and USCG frequencies if needed. Liason has been conducted.

#### What is an Aircard?

An Aircard is typically called a wireless data card. It is a computer add-on device that comes in a number of formats such as PCMCIA or USB. These cards give your laptop or notebook computer the ability to access the

Also Known As: mobile broadband card or connect cards.

#### Wireless Priority Service (WPS)

During emergencies cellular networks can experience congestion due to increased call volumes and/or damage to network facilities, severely curtailing the ability of National Security/Emergency Preparedness (NS/EP) personnel to

To place a call using the WPS dial \*\*272" plus the 10-digit number you are trying to reach. We recommend making a WPS test call to 703-818-3924 at this time.

If your WPS call does not complete in an emergency, use it with GETS to receive additional priority treatment. Dial \*272 + 710-NCS-GETS (627-4387), then press send. Enter your GETS card number at the tone prompt. Do not use GETS or WPS to dial 911. GETS and WPS call processing prevents the 911 operator from receiving information about the caller's location, and may even prevent the call from completing.

#### **Government Emergency Telecommunications Service (GETS)**

What is GETS? GETS is a Federal program that prioritizes calls over wireline networks. Users receive an access card (GETS card), which has both the universal GETS access number and a Personal Identification

To get priority status over cellular communications networks, you need to use the Wireless Priority Service (WPS) program. GETS and WPS can be used in combination.]





# "Charlie Mike" (Continue Mission) This Mission will never be completed!

Sustainable Fleet Management is Total Quality Management (TQM). You must have some certain capacity to Lead. Sustainable implies a continuous state.

"Change the Culture" Try to build a team involving your employees. You cannot be afraid to challenge the Culture in your respective organizations to improve your "Carbon Footprint".

What works for me may not work for you. You may have to improvise, adapt, and overcome obstacles.

I would like to thank you for the opportunity to speak with you today. I would be glad to answer any questions?

