

**University of North Carolina  
at Asheville**

One University Heights  
Asheville NC 28804

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Fleet Information	
Total Leased Vehicles	14
Total County Titled Vehicles	0
Total State Titled Vehicles	31
Total Other Vehicles	44

Fuel Information		
State Titled Vehicles Only		
Fuel Type	Gallons	Pet. Eqv.
Gasoline	11,049	11,049
E10	0	-
E85	0	-
Diesel	3,443	3,443
Off-road Diesel	0	-
B5	0	-
B20	0	-
B100	0	-
CNG	0	-
Propane	0	-
Other	0	-
	Quarts	
Petroleum Motor Oils	512	128
Syn & Rec Motor Oils	1	-
	Total	14,620

Breakdown of State Titled Vehicles Only		
Vehicle Type	Quantity	Miles
Gasoline Only	25	68,230
Diesel	4	4,777
Hybrids	0	
Flex-fueled Vehicles	2	7,875
Comp Natural Gas	0	-
Propane	0	-
Electric	0	-
Other	0	-
10% Eligible	0	-
<b>Totals</b>	<b>31</b>	<b>80,882</b>

Fueling Infrastructure			
Location	Age	Size	Fuel
	1998	275	Gas
Physical Plant	1998	275	Diesel
Riverside	1998	1500	Gas
Warehouse	1998	500	Diesel
Campus	1998	275	Diesel
Generator	1998	275	Diesel

**Instructions**  
Fill out all information (exception - miles if N/A)  
Complete with data from fiscal year 2004-2005  
Please note if fuel includes more than State Vehicles  
Count hybrids and FFV's only once in the breakdown,  
do not count them as gasoline vehicles  
10% Eligible vehicles include police & emergency  
10% eligible educational vehicles must have  
specific modifications for instructional purposes

**Notes/Comments**  
  
300 lb of propane is used for forklifts in the warehouse or by  
Housekeeping staff for buffing floors.

Potential for Biofuels Expansion			
Location	Space	Tk Size	Fuel
Sam Millar	Allocated	1000	BioD
Complex	Allocated	2500	Ethanol
Riverside			BioD
Warehouse			Ethanol

Potential Reduction in Petroleum use for your organization;		Projected Reduction		
Conservation	Reduce speeds, efficient cars, task pooling	439	gallons	= 3.00%
E10	Using E10 for all gasoline vehicles	1,105	gallons	= 7.56%
E85	Using E85 for all flex-fueled vehicles	696	gallons	= 4.76%
E10 to E85	Switching from E10 to E85 for all FFV.	614	gallons	= 4.76%
B5	Using B5 for all diesel vehicles	172	gallons	= 1.18%
B20	Using B20 for all diesel vehicles	689	gallons	= 4.71%
B50	Using B50 for all diesel vehicles	1,722	gallons	= 11.77%
B100	Using B99 for all diesel vehicles	3,409	gallons	= 23.31%
B20 to B50	Switching from B20 to B50 from all vehicles.	1,033	gallons	= 7.06%
B50 to B99	Switching from B50 to B99 from all vehicles.	1,687	gallons	= 11.54%
B20 to B99	Switching from B20 to B99 from all vehicles.	2,720	gallons	= 18.60%
B100	Using B100 in 1/10th of your diesel vehicles	344	gallons	= 2.35%
FFV	Replace one gasoline vehicle with an E85.	321	gallons	= 2.19%
CNG/Propane	Replacing one vehicle with a CNG/LPG car	472	gallons	= 3.23%
Electric	Replacing one vehicle with an electric car	472	gallons	= 3.23%
Syn & Rec Oils	Using all synthetic and recycled motor oils	512	quarts	= 0.88%

**Petroleum  
Displacement  
Goal : 20.0%**  
2,924 gallons

**CHANGES**

\*\* Change to Baseline due to the fact that two vehicles are E85 compatible.

Petroleum Displacement	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	Initial Cost	Yearly Cost
1.50%	Purchase four bicycles for department use & one gas Scooter (70 mpg).					\$3500 [a]	100 [b]
1.00%	Use 725 gallons of B20 instead of diesel					\$1600 [c]	\$0
1.50%	Switch all Motor Oils to Synthetics					\$0	900 [e]
3.00%	Purchase 5 electric golf carts and 3 diesel mules.					\$6000 [k]	\$0
10.00%	Reduce miles driven					\$0	\$0
11.77%		Use B50 for all diesel vehicles				\$0	-\$755 [m]
3.23%		Purchase of 5 electric vehicles.				\$87,000	-\$1800 [d]
3.23%		Purchase of one CNG vehicle				9000 [i]	-\$4800 [l]
7.56%		Switch all gasoline to E10				\$15,077.60	-\$4,090
4.76%		Fill all AFVs from E10 to E85				4800 [c]	\$0
3.32%		Convert a gasoline vehicle to CNG.				9000 [i]	-\$4800 [l]
0.00%		Install CNG slow fill pump				\$5,000	\$0
3.32%		Convert a gasoline vehicle to CNG.				\$9000 [i]	-\$4800 [l]
<b>Totals</b>	<b>17%</b>	<b>35%</b>	<b>51%</b>	<b>54%</b>		<b>\$154,778</b>	<b>-\$19,745</b>

Possible additional vehicle purchases from 2006 - 2010

Year	Quantity, Vehicle Type and Description	Purpose	Fuel / Hybrid	Additional Cost
2006/07	Electric lawn mower to replace older mower.	facilities	electric	0
2007-2009	Replace eight off-road mules.	facilities	diesel or electric	0
2007/08	FFV vehicle to replace older vehicle	facilities	diesel or E85	0
2007/08	FFV vehicle to replace older vehicle	facilities	diesel or E85	0
2007/08	FFV vehicle to replace older vehicle	facilities	diesel or E85	0
2007/08	FFV vehicle to replace older vehicle	facilities	diesel or E85	0
2008/09	FFV vehicle to replace older vehicle	facilities	Hybrid	\$5,000
2008/09	FFV vehicle to replace older vehicle	facilities	diesel or E85	0
2008/09	FFV vehicle to replace older vehicle	facilities	diesel or E85	0

- [a] Cost of purchase. These items have already been purchased and are working great for some of our staff.
- [b] Cost of maintenance.
- [c] Cost of cleaning the tanks (not absolutely necessary).
- [d] Cost difference of offsetting one gasoline vehicle at 3.79/gal.
- [e] Cost of purchasing all synthetic motor oils.

[f] Cost of creating incentives and purchasing items & prizes. Promoting the positive health effects of walking & cycling, including an aware program with the Health & Wellness department, using pedometer, incentive programming. Smart driving guidelines (Task pooling/combining errands, car-pooling, eliminate unnecessary idling, maintain speed limit, remove excess weight from vehicle, use overdrive gears, use cruise control when possible, perform routine maintenance on vehicles and fuel tanks, and purchase correct fuel.)

- [g] Cost difference from B20 (\$1.93/gallon) to B99 (\$0/gallon).
- [h] Cost difference from Gasoline (\$2.25/gallon) to E10 (\$1.77/gallon from State Contract).
- [i] Cost of converting gasoline vehicle to run on CNG.
- [j] Cost of switching from E10 to E85. E85 produces less MPG but cost less per gallon.
- [k] Cost difference of purchasing diesel mules versus gasoline (~\$2000 each)
- [l] Cost saving of purchasing CNG vs. gasoline
- [m] Cost difference from diesel (\$4.68/gallon) to B50 from Blue Ridge Biofuels (\$4.32/gallon)

Figures from 2008-2009 Reporting

Annual diesel use	2,097	Cost difference	
Diesel/gallon	\$2.5900	Diesel to B20	-\$1,384.02
Est. Annual diesel cost	\$5,431.23	Diesel to B99	-\$5,431.23
B20/gallon	\$1.93 Sam Bailey, UNC Asheville	B20 to B99	-\$4,047.21
Est. Annual B20 cost	\$4,047.21	B20 to B50	-\$4,047.21
B50/gallon	\$0.00 (not currently used)		
Est. Annual B50 cost	\$0.00		
B99/gallon	\$0.00 (not currently used)		
Est. annual B99 cost	\$0.00		

Annual Gas use	8,020	Cost difference	
Gas/gallon (August 2009)	\$2.39 Est. state contract transport	Gas to E10	-\$4,090.20
Est. Annual gas cost	\$19,167.80	Gas to E85	\$401.00
E10	\$1.88	E10 to E85	\$4,491.20
Est. Annual E10 cost	\$15,077.60		
E85	\$2.44 (Thomas Petroleum, Shelby, NC - does not include shipping)		
Est. Annual E85 cost	\$19,568.80		

Switching two vehicles to E85	
Miles 08/09	9,751
Average miles/gallon	#REF!
Gallons used/year	#REF!
Cost to from Gas to E85	#REF!

Figures from 2008-2009 Reporting

Annual Gas use of Department with NEW CNG	8,020	Cost difference	
Gas/gallon (August 2009)	\$2.39 Est. state contract transport	Gas to CNG	-\$5,213.00
Est. Annual gas cost	\$19,167.80		
CNG	\$1.74 City of Asheville tanks		
Est. Annual CNG	\$13,954.80		
E10	\$4.06		

Switching two vehicles to E85	
Miles 08/09	9,751
Average miles/gallon	#REF!
Gallons used/year	#REF!
Cost to from Gas to CNG	#REF!

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Fleet and Fuel Reporting

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Fleet Information	2005-2006*		2006-2007		2007-2008		2008-2009		2009-2010		2010-2011	
Vehicle Type	Total #	Miles	Total #	Miles	Total #	Miles	Total #	Miles	Total #	Miles	Total #	Miles
Gasoline	25	96,319	25	58,652	30	68,001	25	61,783	30	74,140	27	59,340
Diesel	4	10,938	4	6,961	4	12,266	7	29,405	9	37,806	8	33,666
Hybrid	-	-	-	-	-	-	-	-	-	-	-	-
Flex-fueled Vehicles	2	11,490	2	7,342	2	6,630	2	5,228	2	5,228	2	4,322
Comp Natural Gas	-	-	-	-	1	2,208	1	3,417	1	3,417	1	3,653
Propane	-	-	-	-	-	-	-	-	-	-	-	-
Electric	-	-	3**	-	-	-	1	1,040	13	5,000	13	unknown
Emergency/Ed (10%)	-	-	-	-	-	-	-	-	-	-	-	-
<b>Totals</b>	<b>31</b>	<b>118,747</b>	<b>31</b>	<b>72,955</b>	<b>37</b>	<b>89,105</b>	<b>36</b>	<b>100,873</b>	<b>55</b>	<b>125,591</b>	<b>51</b>	<b>100,981</b>
	<b>0%</b>	<b>47%</b>	<b>0%</b>	<b>-10%</b>	<b>19%</b>	<b>10%</b>	<b>16%</b>	<b>25%</b>	<b>77%</b>	<b>55%</b>	<b>65%</b>	<b>25%</b>

Fuel Information	2005-2006		2006-2007		2007-2008		2008-2009		2009-2010		2010-2011	
Fuel Type	Gal	Petr.	Gal	Petr.	Gal	Petr.	Gal	Petr.	Gal	Petr.	Gal	Petr.
Gasoline	10,169	10,169	9,022	9,022	8,020	8,020	6,108	6,108	6,500	6,500	5,752	5,752
E10	-	-	-	-	-	-	361	325	-	-	276	248
E85	-	-	-	-	-	-	-	-	-	-	-	-
Diesel	2,217	2,217	1,019	1,019	-	-	-	-	-	-	-	-
B5	-	-	-	-	-	-	-	-	-	-	-	-
B20	-	-	725	580	-	-	-	-	-	-	1,845	1,476
B50	-	-	1,105	553	2,097	1,049	3,006	1,503	2,000	1,000	3,690	1,845
B100	-	-	-	-	-	-	-	-	-	-	-	-
CNG	-	-	-	-	260	-	276	-	252	-	321	-
Propane	-	-	-	-	-	-	-	-	-	-	-	-
	<b>Qrts</b>		<b>Qrts</b>		<b>Qrts</b>		<b>Qrts</b>		<b>Qrts</b>		<b>Qrts</b>	
Petroleum Motor Oils	179	45	71	18	55	14	-	-	-	-	-	-
Syn & Rec Motor Oils	441	-	861	-	163	-	218	-	300	-	400	-
<b>Total Petroleum Use</b>		<b>12,430</b>		<b>11,191</b>		<b>9,082</b>		<b>7,936</b>		<b>7,500</b>		<b>9,321</b>
<b>% Change in PDP</b>		<b>-15%</b>		<b>-23%</b>		<b>-38%</b>		<b>-46%</b>		<b>-49%</b>		<b>-36%</b>

**PDP goal by 2011: -20.0%**

ref line # 31 JON

\*All Values for 2005/06 are estimates based on six month petroleum use.

For the collective State Report 5/8 of the B50 is counted as B20, and 3/8 is counted as B100 (to show the equivalent displacement)

\*\* These three electric vehicles are used for shuttling contractors and staff around campus. Even though these are not on-road vehicles we are reporting them because in the past an on-road petroleum vehicle would have been used for this purpose.

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Results Noted (by FY 2009-10) as relate to your PLAN

Plan for FY 2011-12

all PDP participating fleets results to 2009-10

Overall Results from all participating fleets				
	FY 2004-05		FY 2009-2010	
Fuel Type	thousand	of gallons	thousand of gallons	% change
Gas		14,935	3,165	-79%
E10		598	11382	1803%
E85		242	398	64%
Diesel		8,526	1602	-81%
B5		-	7	
B20		1,870	8157	336%
B100		-	2	
Total Biodiesel as B20		1,870	8,167	337%
CNG		3	0	-92%
Propane		56	5	-91%
Petroleum Motor Oils		48	35	-27%
Syn & Rec Motor Oils		3	6	115%
Total Fuel		26,283	24,760	-5.8%
Total Petroleum		25,581	21,638	-15.4%
T.Fuel (adj. for growth)		26,877	24,760	-7.88%
T.Petro (adj for growth)		26,153	21,638	-17.26%

vehicles reported in PDP				
	FY 2004-05		FY 2009-2010	
Vehicle Types	#	#	% change	
Gasoline	10,816	9,436	-13%	
Hybrid	78	129	65%	
Flex-fueled Vehicles	4,752	7,018	48%	
Comp Natural Gas	14	5	-64%	
Diesel	4,498	5,066	13%	
Propane	192	150	-22%	
Emergency/Ed (10%)	6,007	5,871	-2%	
Electric	13	199	1431%	
<b>Total</b>	<b>26,370</b>	<b>27,874</b>	<b>6%</b>	

**Of the Overall 17.5 % petroleum reduction:**  
 3.95% displaced by reduced mileage (conservation)  
 4.01% displaced through E10 use  
 0.49% displaced through E85 use  
 4.7% displaced through biodiesel use  
 4.3% displaced through efficiency

Your organization result to date

University of North Carolina at Asheville					results to date (2009-10)										% Reductions Caused by PDP Actions (by FY 09-10 as reported)									
% of Goal	State Organization	Petro Use	Petroleum Displacement Achievements	PDP Actions (Petroleum Reduction)	Miles	E10	E85	B5	B20	B100	CNG	Prop	Syn Moil											
242%	UNC Asheville	-48%	exceeded goal by more than 2x	focus on alt fuels, conservation	55.3%	0.0%	0.0%	0.0%	0.0%	11.3%	2.9%	0.0%	0.8%											

your organization plan to date

University of North Carolina at Asheville									
report progress					plan next year and forward				

Petroleum Displacement	2005 thru2007	2007-2008	2008-2009	2009-2010	2010-2011	beyond 2011
Actual	-23%	-38%	-46%	-49%	-36%	

55.3%	increased miles, not helping PDP					Switch all gasoline to E10
0.0%	E10 use,none reported					Fill all flex-fuel vehicles with E-85
11.3%	Biodiesel use contributing toward PDP					Convert at least 2 vehicles to CNG
2.9%	CNG alt fuel contributing toward PDP					Install CNG slow fill pump
0.8%	synthetic motor oil contributing toward PDP					Install new fuel pumps (gas/diesel)
						Install fuel management system
						Develop vehicle purchasing policy
						Develop tracking system for Evs

Previously Noted	
1.50%	Purchase four bicycles for department use & one gas Scooter (70 mpg).
1.00%	Use 725 gallons of B20 instead of diesel
1.50%	Switch all Motor Oils to Synthetics
3.00%	Purchase 5 electric golf carts and 3 diesel mules.
10.00%	Reduce miles driven
11.77%	Use B50 for all diesel vehicles
3.23%	Purchase of 5 electric vehicles.
3.23%	Purchase of one CNG vehicle

PLAN	
0.00%	Switch all gasoline to E10
0.00%	Fill all AFVs from E10 to E85
3.32%	Convert a gasoline vehicle to CNG.
0.00%	Install CNG slow fill pump
3.32%	Convert a gasoline vehicle to CNG.

space for Plan notes



08-'09	09-'10	10-'11
5.57	5.57	
10.410	14.230	
86.89%	155.48%	

**Conservation and Efficiency**

defining steps taken to reduce petroleum consumption

your fleet efficiency appears to have improved tremendously

In the process of reporting PDP results we have been able to directly attribute petroleum use changes due to: mileage; alternative fuel use; number of vehicles; use of synthetic or recycled motor oil. Indirectly we have been attributing any other change to "change in efficiency", a positive change may be called "conservation". To better define what portion of PDP performance is due to "change in efficiency or conservation" Please answer the following:

Has your agency/ department/ organization initiated any steps, **not previously reported**, intended to improve fleet vehicle efficiency? Please place "X" as appropriate

YES	2009-'10	2010-'11	NO	2009-'10	2010-'11
	X				X

what did you change? Place "X" in appropriate box(es)

examples: a mechanical change could include equipment changes to vehicles or fueling infrastructure to make them more efficient. New hybrid autos or new fuel card reader systems would be mechanical. Process change could be an accounting system change, vehicle reassignment, or a carpooling system. Behavior could be drivers improving fuel economy by driving more efficiently or drivers combining errands or carpooling to reduce mileage.

		2009-'10		2010-'11	
		yes	no	yes	no
1a	changed vehicle types	X		X	
1b	use fuel management system		X		X
1c	use on-board idle reduction mechanism		X		X
1d	other mechanical system change		X		X

		2009-'10		2010-'11	
		yes	no	yes	no
2a	changed fuel accounting system		X		X
2b	reduced on-board weight		X		X
2c	set carpooling policy		X		X
2d	reassigned vehicles to reduce fuel use		X		X
2e	check tire pressure routinely		X		X
2f	evaluate MPG performance by vehicle		X	X	
2g	other process system change		X		X

		2009-'10		2010-'11	
		yes	no	yes	no
3a	trained drivers on economical driving		X		X
3b	reminded drivers to save fuel		X		X
3c	set policy on idle reduction		X		X
3d	evaluate driver behavior (on economy)		X		X
3e	carefully observe speed limit		X		X
3f	reward economical driving or punish inefficient driving		X		X
3g	other behavior change		X		X

when did you first change it? Place "question #" in box best marking when process began. There may be multiple marks.

mechanical	before 2005	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	FY 10-11
1a, 1d								

process	before 2005	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	FY 10-11

behavior	before 2005	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	FY 10-11

How did you change it? Please note question # you are referring to.

examples may include new procedures, training, or directives affecting vehicle choice or vehicle use; installation of new equipment to dispense fuel or account for its use.

mechanical
1A-We replaced several gas and diesel fueled vehicles with B50, Electric, E85, CNG and E10 1D-Change to purchasing B50, CNG, E10, E85 1D-Change to purchasing B50, CNG, E10, E85 <b>new in FY 2010-'11:</b> A 2007 diesel dump truck was purchased in July 2011 with the expectation that it would replace a 23 year-old gasoline dump truck. However, at the time of report submission, the gasoline truck is still in service.

process
<b>new in FY 2010-'11:</b> The newly created Transportation and Parking Services Office has been working with our Facilities Management department to digitize fuel purchase receipts, allowing us to track MPG/vehicle.

behavior
<b>new in FY 2010-'11:</b> No new activities.

From your Results Noted tab you are now aware of what portion of your PDP performance change (positive or negative) was attributed to efficiency and conservation last year.

Your '09-'10 PDP report indicated 155.48% was attributed to change in efficiency. Of the noted changes in each of these three categories what part will you attribute to current and future activities in each? Your answers may total 0% if not applicable, otherwise the total will be 100%.

FY	2009-10	mechanical	100%
FY	2010-11	mechanical	90%
FY	2011-12	mechanical	

FY	2009-10	process	
FY	2010-11	process	10%
FY	2011-12	process	

FY	2009-10	behavior	
FY	2010-11	behavior	0%
FY	2011-12	behavior	