

Petroleum Displacement Plan Summary

By 2010 the North Carolina State Fleet will have to reduce petroleum to 21.3M gallons based on the 2005-06 baseline data that showed 25.8M gallons of petroleum use. In 2006-07 the State Fleet achieved a 7.2% reduction to 24.0M gallons of petroleum products. While this reduction in one year is admirable, it may be partially attributed to travel restrictions from hurricanes Katrina and Rita. The overall state plan to meet the reduction requirement must utilize conservation, more fuel-efficient vehicles including hybrids, E10 and B20 at state fueling sites, and an expanded use of E85 in flex-fueled vehicles. Most state organizations have developed petroleum displacement plans, initiated better monitoring practices, and started on simple measures, but must now take on more aggressive petroleum reduction strategies to meet individual and state-wide goals set by the 2005 State Budget Provision.

PDP Plan Requirements

The 2005 State of North Carolina Budget Provision 19.5 requires that State agencies, universities and community colleges develop and implement a plan to **achieve a 20% reduction or displacement of their current petroleum by January 1, 2010**. This directive applies to fleets of greater than ten on-road, State-titled vehicles. Emergency and educational vehicles must meet a 10% displacement of petroleum use. Petroleum Displacement Plans (PDPs) are due annually by September 1 to the Department of Administration. A report is then due to the Joint Legislative Commission on Governmental Operations by November 1, 2006, and annually thereafter on November 1, reporting on the agencies' progress in meeting their displacement goals. PDP requirements shall not impede agency mission and are to take into consideration all manner of circumstance, such as cost and feasibility. The appendix has the complete budget provision that was passed by the state legislature in 2005.

Baseline Data-Gathering

FY 2004-05 is the baseline year for State fleets reporting in relation to petroleum displacement plan requirements. State entities (including state departments, agencies, community colleges and universities) were requested to submit FY 2004-05 baseline reporting information comprised of the number and types of vehicles, number of miles driven annually, gallons of petroleum and alternative fuels used including gasoline, diesel, B20, E10, E85, and petroleum-based and/or synthetic/recycled motor oil, and fueling sites. In addition to providing baseline year information, agencies were also asked to develop a PDP to meet their individual goals of reducing 10% to 20% of the petroleum they used in FY 2004-05. A total of 100 State agencies participated in the PDP process¹. Of this total:

- 36 agencies submitted some or all of the data required to establish baseline year information, petroleum displacement plans and FY 2005-06 vehicle use information; and
- 64 entities (50 community colleges, 14 State agencies) requested exemption from the petroleum displacement plan requirement because they do not operate ten or more State-titled vehicles. Exemption requests from the 64 entities represents 161 State-titled vehicles, over 14,094 regular route school buses² and 660 vehicles that are titled to the counties in which they operate.

All participating agencies, whether or not they requested an exemption from the PDP process, were asked to submit plans to promote conservation in the vehicles that they do operate. Table 1 in the appendix summarizes the total number of vehicles and gallons of fuel used (by fuel type) that each participating agency submitted for the baseline year FY 2004-05. The total number of State-titled vehicles subject to the PDP is 26,244. Of this total, 10,742 (41%) are gasoline, 4,490 (17%) are diesel, 4,783 (18%) are FFVs, 192 are propane, 78 are hybrids, 14 are CNG, and 13 are electric. In addition, 5,932 vehicles are subject to just 10% petroleum displacement requirements due to training or emergency/law enforcement use. In cases where an agency may have some vehicles that are eligible for a 10% reduction and some that require a 20% reduction, an overall reduction plan goal of somewhere between 10-20% may be established which represents the proportionate mixture of emergency/law enforcement vehicles in their fleet.

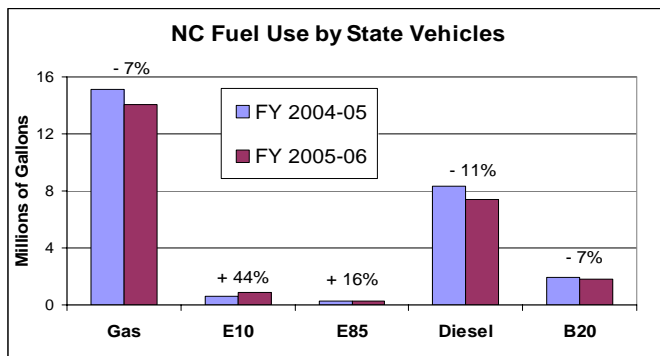
The total amount of fuel used in the FY 2004-05 baseline year was 26.5M gallons. Of this total, approximately 15.1M gallons of gasoline were utilized, including charges through the Voyager card at non State-owned pumps. Other fuels utilized included 8.3M gallons of diesel; 0.6M gallons of E10; 0.24M gallons of E85; 1.9M gallons of B20; 3,322 gasoline gallon equivalents of CNG; 55,880 gallons of propane; 38,115 gallons of motor oil; and 2,965 gallons of synthetic motor oil. This represents 25.8M gallons of petroleum products. To reach the petroleum displacement goal set by this legislative act, the state must reduce petroleum by 17.5% (factors in training and emergency/law enforcement vehicles) to 21.3M gallons by 2010.

¹ Additional follow-up is needed to clarify whether remaining organizations are exempt due to less than 10 vehicles. The organizations with incomplete data are Alamance, Edgecombe, Isothermal, Pamlico, and Wilkes Community Colleges; Department of Cultural Resources, Department of Justice; and several small agencies.

² School buses are titled to the counties instead of the State and are considered "specialty vehicles". However, it should be noted that the NC Department of Public Instruction provides funding for fuel for school buses. NC public school buses used 25M gallons of diesel fuel last year.

FY 2005-06 Reporting

State agencies made strides in FY 2005-06 in implementing and reporting efforts at displacing petroleum use through conservation practices and utilizing more alternative fuels. Some progress has been made, as demonstrated in the following graph which compares baseline year fuel use³ with FY 2005-06 fuel uses. In FY 2005-06, **gasoline consumption was reduced by 7%** to 14.1M gallons from 15.1M during the baseline year. This reduction may have been partially caused by supply shortages and disruptions resulting from Hurricanes Katrina and Rita which forced State fleet travel restrictions in the late summer and fall of 2005. However, some of the reductions may be accounted for by conservation efforts and the transition to more renewable fuel use. **E10 use climbed 44%** to 863,000 gallons in FY 2005-06 from 598,000 gallons in FY 2004-05. Both diesel and B20 use declined with 8.3M gallons of diesel used in FY 2004-05, dropping to 7.4M in FY 2005-06. B20 use went from 1.9M gallons in the baseline year to 1.8M gallons in FY 2005-06, principally from the Department of Correction drop in use, likely from travel restrictions caused by the Katrina/Rita pipeline and production shortages. E85 fuel use showed a significant increase from 242,000 to 281,000 gallons, however E85 fuel represents only 1% of the total fuel use even though over 20% of the state-titled vehicles are flex-fueled. Individual agency achievements can be found in the appendix.



Overall, the state-titled vehicles in North Carolina used 24.7M gallons of fuel (a 6.9% reduction); of which 24.0M gallons were petroleum products (a 7.2% reduction). Although this shows positive progress towards the petroleum displacement goal, the majority of the reduction was due to less fuel consumption, which may have been caused primarily by the travel restrictions from Katrina and Rita. 2006-07 data will determine if the lower fuel consumption continues. But in any case, a much larger use of alternative fuels will be needed to meet the 20% reduction by 2010.

PDP Implementation and State Action Plan

Continued agency involvement and plan development is setting the stage for further success. Initiatives such as all DOT fueling sites transitioning to E10 and B20, plus plans to develop more State E85 refueling infrastructure, will result in significant petroleum displacement. With implementation of the following actions, 20% petroleum displacement versus the baseline year of FY 2004-05 can be achieved by January 1, 2010.

- Driving and operational strategies to **conserve fuel** can reduce overall petroleum consumption by as much as 3%, which can offset additional fuel consumption due to addition of vehicles to the fleet or increased mileage.
- Incorporation of smaller, fuel-efficient vehicles such as the Ford Focus into the State fleet
- Increased use of **hybrid electric vehicles**, which offer greater fuel efficiency, and can limit overall consumption of transportation fuels.
- 75% of gasoline fuel used by MFM cars (or 3M gallons) is currently purchased at retail sites instead of state-owned pumps. Therefore, a secondary push is needed to widely encourage all state gasoline vehicle drivers to **utilize DOT fueling sites whenever possible**, since all of these gasoline pumps will be dispensing E10 by the end of 2006. In addition, B20 availability will be expanded from the current 19 pumps to 108 DOT pumps by the end of 2007 and to 130 diesel fueling pumps by 2010.
- By 2010, there are expected to be at least 10,000 FFVs in the State fleet. Emphasis must be placed on **refueling at E85 pumps** (state and public) in order to meet 20% petroleum displacement.
- E85 needs to expand with new fueling sites to supply more FFVs. With the increase of FFVs and stations, consumption of E85 should increase to 1M gallons in 2006-07, 2M in 2007-08, 3M in 2008-09, and 5M gallons per year by 2010. Existing gasoline pumps and tanks, if installed since 1998, could be utilized for E85.
- Additional production of ethanol and biodiesel fuels will reduce cost compared to petroleum and eliminate current additional incremental costs for B20, E10, and E85. Encouragement and support of in-state production of alternative transportation fuels will boost economic development as well.
- The new Wright Express credit card system, available in January, 2007, for use in State-vehicle fuel purchases at retail sites, will track type of fuel (E10, E85, gasoline, B20, diesel) as well as location and vehicle number as part of the transaction information to better monitor agencies' fuel choices.

³ Three agencies have not reported FY 2005-06 data (Elizabeth City State University, NC State Ports Authority, and UNC Hospitals), which accounted for 106,000 gallons (0.4%) of petroleum in the baseline.

Strategies to meet PDP Requirements

A resource summary of available alternative fuel and advanced transportation options for State government fleets was created for FY 2005-06 and updated for 2006-07. The current document accompanies this report and will provide further information on the strategies summarized below

Conservation

Conservation is stressed as an effective method to achieve reductions in petroleum use while realizing bottom line operational savings. It is estimated that fleets can achieve a 3% petroleum displacement when employing conservation strategies. Some may achieve far greater efficiencies. Many State agencies are including fuel conservation practices in new employee orientations and agency-wide education programs.

Conservation Success Story: In 2006, NC DENR's Soil and Water Conservation team (eight vehicles) achieved a **43%** reduction in fuel use by ending idling on the side of the road. Idling of vehicles can be a major source of fuel consumption, often resulting from historical practice as opposed to demonstrated need.

There are numerous opportunities, although less striking than DENR's example, to conserve fuel when using State vehicles without decreasing job effectiveness. They include keeping tires properly inflated, performing regular vehicle maintenance, eliminating idling, reducing unnecessary weight, driving at posted speeds, car-pooling, combining trips, and providing non-travel options such as conference calls. Adoption of fuel-efficient habits will require employee education and commitment.

Adding Efficient Vehicles to the Fleet

Agencies must continue to seek appropriate fuel-efficient vehicles to match transportation applications. For example, a hybrid SUV could meet driver need for 4-wheel drive while providing greater fuel efficiency. Compact cars with higher mileage will have a place in the State's fleet. Recently, organizations have come across the dilemma of purchasing a larger flex-fueled truck that can use E85 or a smaller, more efficient truck (currently there are no small trucks available with the FFV option). Vehicle purchase decisions in the future will be based partially on the amount of petroleum fuel displaced.

Hybrid Electric Vehicles (HEVs)

Hybrid electric vehicles typically cost more initially than the comparable gasoline-only or flex-fuel vehicles used in the State fleet today. However, hybrids present a good investment for the State since they save on gasoline by having a much higher miles-per-gallon performance; have lower maintenance costs (due to the advanced technology used and extended warranties); and retain a higher resale value at the end of their useful life. As calculated by the City of Charlotte, this results in a payback of the extra purchase cost within 2.5 to 5.5 years, depending on the model chosen and miles driven.

HEV Success Story: In 2005-06, DOA Motor Fleet Management (MFM) had 108 HEVs in their fleet. Using an average of 12,600 miles per year, the Toyota Prius at 45 miles per gallon can save approximately 400 gallons of petroleum per year if it replaced a typical conventional gasoline vehicle at 18.5 miles per gallon. This represents a 41,000 gallon displacement of petroleum each year these vehicles are used. The appendix shows MFM's projected HEVs.

Electric Vehicles

Several State agencies are transitioning gasoline-powered utility trucks to electric utility vehicles. Many neighborhood electric vehicles (NEVs) are legal on streets zoned for up to 35 mph and can be simply charged in a 110-volt outlet. Typically, the NEVs cost more than utility all-terrain vehicles but less than small pickups or passenger sedans. Using these to replace a state-titled vehicle can save money on purchase cost in addition to displacing petroleum, reducing tailpipe emissions, reducing noise, and offering utility and flexibility.

NEV Success Story: In the first eight months of operation of a neighborhood electric vehicle (NEV), UNC-Charlotte's Facilities Department⁴ realized \$789 savings in fuel and preventive maintenance costs compared to a gasoline utility vehicle. The NEV also has the benefit of a larger load capacity.

⁴ UNC-Charlotte has over 30 NEVs currently in use. 11 of these are replacing on-road vehicles in the campus fleet.

Flex-Fuel Vehicles (FFVs)

In order to meet Energy Policy Act (EPAct) requirements, the Department of Administration's MFM has focused its purchase of alternative fuel vehicles on expanding the State's fleet of E85-capable flex-fuel vehicles (FFVs). There is no additional cost, or incremental cost, to purchase a FFV model versus a gasoline-only vehicle that is the same make and model. In the baseline year, 4,797 FFVs were operated in the State fleet, principally by MFM. The number of FFVs then grew to 5,758 in FY 2005-06 and, by 2010, it is anticipated that State fleets will purchase an additional 5,314 FFVs. By 2010, some older FFVs will be retired from the State fleet, but around 10,000 should still be active, which would represent about one-third of the total state-titled vehicles.

Ethanol

E10 can be used in any gasoline engine, demonstrates no decrease in vehicle performance or efficiency, and displaces 10% of petroleum use. By the end of 2006, NC DOT gasoline tanks dispensed E10 at 111 fueling sites across the state. Attached in the appendix is a listing with a map of some easily accessible DOT sites off the major highways. After inserting directions to the DOT site closest to your main location, place a copy of this in every vehicle to encourage the use of E10. Sites operated by other agencies will bring the number of E10 pumps to 216 by 2010. With numerous State-owned refueling options available, more drivers are expected to refuel with E10 rather than use the credit card at retail sites. The following organizations operate E10 fueling pumps: Appalachian State University, NC Department of Agriculture and Consumer Services, NC Department of Health and Human Services, NC Department of Administration's Motor Fleet Management, NC Department of Correction, and NC Department of Transportation.

E85 should be used in all of the state-titled FFVs whenever available. Even though 20% of the state fleet is made up of FFVs, only 1% of the fuel use, or 281,000 gallons of E85 were used in 2005-06. In order to meet the 20% petroleum displacement goal, E85 use must increase to 5M gallons (20% of the total fuel use) by 2010, which would be possible with the anticipated number of FFVs growing to 10,000 and 30 new E85 stations installed in the State. Currently, there are 10 stations throughout NC that sell E85, but these have not been properly utilized by state-titled vehicles. In the appendix is a listing of current and pending privately-owned E85 service stations as well as a document listing of the current sites with their location and maps that should be placed in every state-titled FFV to encourage E85 use.

The NC Alternative Fuels Consortium, a group of State agencies and interested stakeholders convened by the State Energy Office, has formed a subcommittee dedicated to expanding E85 infrastructure for State fleets. The E85 Infrastructure Subcommittee is comprised of representatives of the State Energy Office, NC DOT Equipment Unit, MFM, DENR's Office of the Secretary, Triangle Clean Cities Coalition, and the NC Solar Center at NC State University. The subcommittee determined that in order to effectively meet the needs of the State's FFVs, E85 refueling infrastructure should be expanded to: NC DOT locations; privately-owned service stations that are convenient to, or currently frequented, by State fleets; and university, community college and other state agency sites that have enough MFM-leased FFVs and university-owned FFVs to assure sufficient use of E85. In the appendix, there is a figure showing the distribution of state-titled FFVs by county in NC along with a listing of potential E85 DOT fueling sites that are being evaluated.

There is a fuel economy penalty when using E85. Vehicle engines are designed for gasoline optimization and do not have a compression ratio that favors the use of E85. Furthermore, a gallon of ethanol does not have as many BTUs as a gallon of gasoline, so a vehicle may use 15-25% more E85 than gasoline. It is very difficult to predict future fuel prices for petroleum or ethanol. Recently on the state contract, the price of E85 has been close to that of gasoline or E10, but during the last half of 2006 E85 was \$.23 more per gallon, or 12% higher. However, it is anticipated that E85 prices will come down again as production capacity increases across the US and production actually begins in North Carolina. Historically, E85 sells at a comparable price to gasoline commercially in NC and actually is less than gasoline in states that have their own ethanol production.

Biodiesel

Any diesel engine can utilize B20. Existing diesel tanks and pumps can be used for B20. Most diesel engine vehicles in the State fleet refuel at their home base. Therefore, having B20 available in the former diesel tanks assures 20% displacement of diesel fuel. Diesel fuel currently accounts for about one-third of petroleum use in the State fleet. B20 availability will be expanded from the current 19 pumps to 108 DOT pumps by the end of 2007 and to 130 fueling pumps by January 1, 2010. The following organizations currently operate B20 fueling pumps: NC Agriculture & Technical State University, NC Department of Correction, NC Department of Transportation, Appalachian State University, and NC State University.

Petroleum Displacement Plan Opportunities and Resources

In addition to monitoring the PDP program, the State Energy Office and the North Carolina Solar Center are working to help state organizations meet the 20% displacement requirement. Individual agencies have the responsibility for meeting the PDP goal as outlined in Budget Provision 19.5. However, we will assist in expanding the availability of alternative fuels throughout the state and provide information about the most current petroleum reducing options. The following list of opportunities and efforts should be supported and utilized by all state organizations to help meet their PDP.

E85 and Biodiesel Corridor Development (Triangle Clean Cities)

Triangle Clean Cities Coalition (TCCC) won a \$590,000 award on behalf of six Clean Cities coalitions in the four states of Georgia, Tennessee, North Carolina and South Carolina. The grant is one of 13 given by the U.S. Department of Energy to support alternative fuels infrastructure. The funds will be used to open 21 public E85 and 14 B20 pumps at existing gas stations along heavily traveled corridors in the four states. The grant will fund eight E85 ethanol installations and nine B20 biodiesel installations in North Carolina around Raleigh, Roanoke Rapids, Charlotte, Asheville, and Lenoir – increasing the number of public E85 stations by 66% and B20 stations by 56% in North Carolina.

Proposed E85 Stations

Name	Address	Location	County
Kounty Line # 1 (Exxon)	441 Airport Road	Arden	Buncombe
Kounty Line # 2 (BP)	2251 Hendersonville Road	Arden	Buncombe
Gas Up	405 Haywood Road	Asheville	Buncombe
New Dixie	I-95 Exit 176	Gaston	Northampton
Penn Mart	1600 S. Main Street, 28144	Salisbury	Rowan
Holiday Foods #1	440 Blowing Rock Blvd.	Lenoir	Caldwell
Flip's Kwik Stop	334 W. Franklin Blvd.	Gastonia	Gaston

* One additional site in Raleigh is being proposed, although an exact location has not been determined

Clean Fuel & Advanced Transportation (CFAT) Program (NC Solar Center)

The North Carolina Solar Center is seeking proposals from vehicle and fleet operators and fuel providers for transportation-related projects that reduce emissions in North Carolina's non-attainment and maintenance counties for National Ambient Air Quality Standards. Both public and private entities whose mobile emission reduction projects take place in the following counties are encouraged to apply for CFAT funding: Cabarrus, Catawba, *Chatham, Davidson, Davie, Durham, Edgecombe, Forsyth, Franklin, Gaston, Granville, Guilford, * Haywood, *Iredell, Johnston, Lincoln, Mecklenburg, Nash, Orange, Person, Rowan, *Swain, Union, Wake (*represents partial counties). The 2007 call for proposals period is March 15 - July 16, 2007. Approximately \$625,000 will be available for 2007 projects such as;

- **Up to 80% of the total purchase price of AFVs including CNG, propane, and electric vehicles for public entities (80% of the incremental costs of AFVs for private entities)**
- **Incremental cost of heavy duty hybrid electric vehicles (including buses)**
- **Infrastructure to dispense and store alternative fuels (B20-B100, E85, CNG, LNG, LPG)**
- Technologies to reduce truck idling (mobile and stationary technologies)
- Diesel retrofit technologies (diesel oxidation catalysts, crank case filtration systems, diesel particulate filters)

All applicants must provide a minimum of 20% cost share on proposed projects. Cost share funds must be non-federal dollars and directly related to the project. All CFAT projects will be evaluated on: cost versus regulated emission reductions; cost-share contribution; continued use & policy commitment; public awareness and education; and the diversity of projects and users. A link to the RFP can be found in the appendix.

Energy Policy Act (EPAAct) Credit Banking and Selling Program (SEO)

The State will soon be able to sell excess EPAAct credits to expand the use of alternative fuel in State fleets. It is estimated that over 750 credits are available to sell, each with a value of approximately \$1,000. The final rules should be effective by May 1. It is anticipated that as many as \$350,000 of credits could be sold in 2007. The Alternative Fuel Consortium and the Credit Selling Working Group (MFM, DOT, SEO, and any other agency that generates EPAAct credits) will develop recommendations on dispersing the revenue to any State department, institution, or agency as to maximize the overall benefit to the State.

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Statutory Directive for Petroleum Displacement Plans

SL2005-276

STATE FLEETS SHALL DEVELOP AND IMPLEMENT PLANS TO IMPROVE USE OF ALTERNATIVE FUELS, SYNTHETIC LUBRICANTS, AND EFFICIENT VEHICLES

SECTION 19.5.(a) All State agencies, universities, and community colleges that have State-owned vehicle fleets shall develop and implement plans to improve the State's use of alternative fuels, synthetic lubricants, and efficient vehicles. The plans shall achieve a twenty percent (20%) reduction or displacement of the current petroleum products consumed by January 1, 2010. Before implementation of any plan, all affected agencies shall report their plan to the Department of Administration. The Department of Administration shall compile a report on the plans submitted and report to the Joint Legislative Commission on Governmental Operations. Agencies shall implement their plans by January 1, 2006. Reductions may be met by petroleum or oils displaced through the use of biodiesel, ethanol, synthetic oils or lubricants, other alternative fuels, the use of hybrid electric vehicles, other fuel-efficient or low-emission vehicles, or additional methods as may be approved by the State Energy Office, thereby reducing the amount of harmful emissions. The plan shall not impede mission fulfillment of the agency and shall specifically address a long-term cost-benefit analysis, allowances for changes in vehicle usage, total miles driven, and exceptions due to technology, budgetary limitations, and emergencies.

SECTION 19.5.(b) For the purposes of this section, a State-owned vehicle fleet consists of more than 10 motor vehicles, as defined by G.S. 20-4.01, that are designed for highway use and titled to one of the aforementioned entities. Specialty vehicles, as defined by G.S. 20-4.01, that are used for educational purposes, and vehicles exempted under U.S. Executive Order 13149 are subject to ten percent (10%) reductions.

SECTION 19.5.(c) Agencies shall report by September 1, 2006, and annually thereafter on September 1, to the Department of Administration on the efforts undertaken to achieve the reductions. The Department of Administration shall compile and forward a report to the Joint Legislative Commission on Governmental Operations by November 1, 2006, and annually thereafter on November 1, on the agencies' progress in meeting their plans.

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Table 1: Summary of the total number of vehicles and gallons of fuel used (by fuel type) that each participating agency submitted for the baseline year FY 2004-05.

Fiscal Year 2004 - 2005	Vehicles		Total Fuel use in thousands of Gallons							PDP Provision 19.5	
	E/Ed 10%	Total	Gas	E10	E85	Diesl	B20	Total Fuel	Total Petro	% Reduction Required	Total Petro Goal
Appalachian SU	0	188	98	0	0	28	0	126	126	20.0%	101
Caldwell CC & TI	22	22	0	0	0	36	0	37	37	10.0%	33
Cape Fear CC	23	24	0	0	0	16	0	17	17	10.2%	15
Davidson County CC	0	16	6	0	0	24	0	30	30	20.0%	24
Durham Technical CC	0	20	4	0	0	0	0	4	4	20.0%	3
Eastern Carolina U	0	350	107	0	0	132	0	240	240	20.0%	192
Elizabeth City SU	0	25	18	0	0	0	0	18	18	20.0%	14
Fayetteville SU	0	45	16	0	0	2	0	18	18	20.0%	15
Johnston CC	23	23	0	0	0	21	0	21	21	10.0%	19
NC A&T	0	99	46	0	0	6	5	56	55	20.0%	44
NC Arboretum	0	15	3	0	0	1	0	4	4	20.0%	3
NC Central University	0	70	34	0	0	3	0	38	38	20.0%	30
NC Dept. of Admin. (MFM)	1123	8546	4077	534	242	0	0	4855	4594	18.7%	3737
NC Dept. of Ag & CS	0	530	294	17	0	140	0	519	517	20.0%	414
NC Dept. of CC & PS	2295	2295	3165	0	0	11	0	3188	3188	10.0%	2869
NC Dept. of Correction	1390	1652	945	15	0	676	126	1804	1746	10.9%	1556
NC Dept. of Envir. & NR	950	1397	1007	0	0	120	0	1279	1279	12.8%	1115
NC Dept. of Health & HS	9	865	291	2	0	65	0	362	362	19.9%	290
NC Dept. of J Justice & DP	0	90	27	0	0	0	0	32	32	20.0%	26
NC Dept. of Transportation	0	8135	4020	30	0	6937	1720	12734	12360	20.0%	9888
NC Sch for Sci and Math	0	17	6	0	0	2	0	7	7	20.0%	6
NC School of the Arts	0	53	13	0	0	2	0	15	15	20.0%	12
NC State Ports Authority	0	74	46	0	0	0	0	46	46	20.0%	37
North Carolina State Univ	0	254	296	0	0	0	70	367	353	20.0%	282
Rowan-Cabarrus CC	14	14	2	0	0	0	0	2	2	10.0%	1
UNC Asheville	0	31	11	0	0	3	0	15	15	20.0%	12
UNC Chapel Hill	0	628	263	0	0	13	1	279	279	20.0%	223
UNC Charlotte	0	104	92	0	0	4	0	96	96	20.0%	77
UNC Greensboro	14	169	37	0	0	11	0	49	49	19.2%	39
UNC Hospitals	6	55	27	0	0	15	0	42	42	16.2%	35
UNC Pembroke	0	24	10	0	0	4	0	14	14	20.0%	11
UNC TV	0	60	44	0	0	4	0	48	48	20.0%	39
UNC Wilmington	0	126	42	0	0	0	0	43	43	20.0%	34
Western Carolina Univ	0	133	64	0	0	20	0	84	84	20.0%	67
Wilson Technical CC	62	62	6	0	0	35	0	44	41	10.0%	37
Winston-Salem SU	1	33	10	0	0	1	0	10	10	20.0%	8
Totals	5932	26244	15126	598	242	8332	1922	26543	25831	17.5%	21309

The breakdown of fuel use by type does not include CNG, Propane, or Motor Oils, but these are included in the total fuel and total petroleum numbers. % Required Reduction is based on the number of vehicles (or miles driven when available) for both the normal 20% reduction and the educational or emergency/law enforcement vehicles (E/Ed) that are only required to displace 10% of their petroleum use.

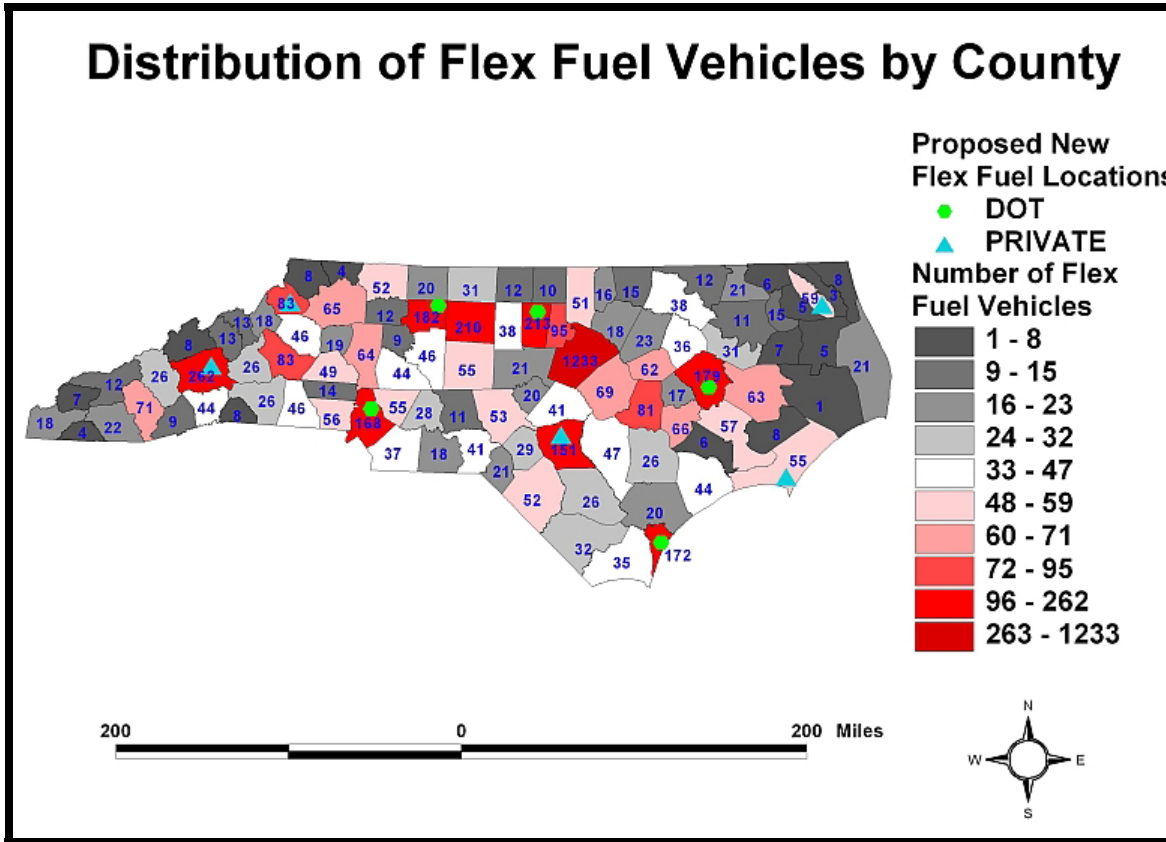
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Table 2: Summary of individual achievements for FY 2005-06. Data compiled September, 2006.

State Organization	Petroleum Use	% of Goal	Petroleum Displacement Achievements
Caldwell CC & TI	-36%	361%	29% decrease in the miles driven by state vehicles
Johnston CC	-17%	167%	Decreased idling time by instructors & students in driver training
UNC Charlotte	-24%	121%	Broke ground for new tank that will hold E85 and E10
NC School of the Arts	-24%	120%	
Wilson Technical CC	-10%	99%	Implemented Conservations Initiatives, bought 1 GEM vehicle
UNC Asheville	-15%	73%	Switched to synthetic motor oils
NC Dept. of CC & PS	-6%	62%	Switched 50% of diesel to B20 & 1.5% of gas to E10
NC Dept. of Transportation	-12%	61%	Switched over all gasoline tanks to dispense E10, 3 for B20
NC Dept. of Corrections	-6%	58%	Initiated Conservation Awareness and Consolidated transports
NC Dept. of Envir. & NR	-6%	51%	Soil & Water Conservation ended idling & reduced fuel by 43%
UNC TV	-9%	46%	Initiated Conservation Awareness and reduced mileage by 9%
Fayetteville SU	-9%	45%	Eliminated vehicle warm-up time (idling)
UNC Pembroke	-9%	44%	
NC Central University	-5%	25%	5% decrease in the miles driven by state vehicles
Appalachian SU	-5%	23%	Significant decrease in miles driven by state vehicles
NC Arboretum	-4%	22%	
PDP Target Goal	-4%	20%	After 1/5th of implementation time, -4% should be displaced
UNC Chapel Hill	-4%	20%	Campus station switched to E10, Busses use town's B20
Rowan-Cabarrus CC	-2%	18%	
NC Dept. of Health & HS	-2%	11%	
UNC Greensboro	-2%	8%	Switched over entirely to E10 and B20
UNC Wilmington	-1%	3%	Reduced idling on campus, consolidated supply trips
Davidson County CC	0%	0%	
NC School of Sci and Math	0%	0%	Cancelled unnecessary travel and combined essential trips
Western Carolina Univ	0%	0%	
NC Dept. of Admin. (MFM)	4%	-19%	Replaced 192 gas vehicles with 30 hybrids and 162 FFVs
North Carolina State Univ	4%	-22%	Used B20 for all diesel vehicles
Cape Fear CC	2%	-23%	
NC A&T	5%	-26%	
NC Dept. of Ag & CS	5%	-27%	Blended about 3,000 gallons of B100 into diesel fuel use
Eastern Carolina U	8%	-40%	Started transitioning to use E10 instead of gasoline
Durham Technical CC	10%	-48%	Required carpooling for staff attending the same event
Winston-Salem SU	18%	-88%	
NC Dept. of J Justice & DP	66%	-330%	*Includes vehicles not accounted for in baseline year
Elizabeth City SU	N/A	N/A	
NC State Ports Authority	N/A	N/A	
UNC Hospitals	N/A	N/A	

FY '05-'06 PDP Summary Report Appendix

Figure 1 – Distribution of FFVs by County for All State Agencies with Potential E85 Sites



In rank order, by county, the largest numbers of FFVs are: Wake at 1233; Buncombe at 262; Orange at 213; Guilford at 210; Forsyth at 182; Pitt at 179; New Hanover at 172; Mecklenburg at 168; Cumberland at 151; Durham at 95; Watauga at 83; Burke at 83; and Wayne at 81.

Table 3- NC DOT Fuel Sites Currently Under Evaluation for E85 Expansion

DOT refueling sites most frequented by outside agencies	Annual fuel use/location details
Greenville	Hwy 13 (135,000 gallons NC DOT; twice as much used by other state agencies)
Smithfield	Incomplete data
Hillsborough	(20,000 gallons NC DOT; 109,000 other state agencies use – may not have room for E85)
* Marion	(63,000 gallons NC DOT; 189,000 other state agencies – easy location ½ mile from I-40)
Morganton	Incomplete data
Statesville	Incomplete data
Charlotte	Incomplete data

* = DOT has verified that there is sufficient space for E85 tank & dispenser

FY '05-'06 PDP Summary Report Appendix

Table 4 - Petroleum Conservation Measures

Step 1: Adopt Fuel-Efficient Operations

1. Keep fleet vehicle tires properly inflated and aligned.
2. Get regular tune-ups, filter changes, and engine lubes.
3. Provide transit incentives for employees to ride public transit.
4. Offer employees a telecommuting option.
5. Offer ride-sharing incentives for car-pooling, van pooling, etc.
6. Offer safe bicycle storage; arrange safe bicycling instruction.
7. Require fleet vehicles be driven at posted speed limit.
8. Encourage combining multiple out-of-office errands/trips.
9. Establish a fuel-efficient vehicle procurement policy.
10. Use only low-rolling resistance (LRR) tires on fleet vehicles.
11. Establish idle reduction policies; eliminate unnecessary idling.
12. Reduce unnecessary weight in vehicle such as storage in trunk.

Step 2: Educate Employees

1. Integrate efficient driving habit tips into new employee orientations.
2. Place reminders in vehicles to observe conservation strategies.
3. Share conservation strategies in newsletters or other organization-wide publications.

Step 3: Encourage public adoption through State leadership by example, public workshops for fleet managers and individuals, car care classes, etc.

Table 4 -Motor Fleet Management Hybrid Electric Vehicle Purchases

Year	Number of Hybrid Electric Vehicles in Fleet
FY 2004-05 (PDP baseline year)	78
FY 2005-06 (+30)	108
FY 2006-07 (+35)	143 (planned)
FY 2007-08 (+25)	168 (planned)
FY 2008-09 (+20)	188 (planned)
FY 2009-10 (+30)	218 (planned)

Additional Relevant Documents upon request or available at www.ncmobilecare.org under resources

[2006-2007 North Carolina State and Local Government Alternative Fuel & Advanced Technology Options:](#) availability and information about biodiesel, ethanol, CNG, LPG, hybrids, low speed vehicles, lubricants, and conservation

[Biodiesel Fact sheet:](#) what it is, how it works, the benefits, and where to find it

[Ethanol Fact sheet:](#) what it is, how it works, the benefits, and where to find it

[Natural Gas and Propane Fact sheet:](#) what it is, how it works, the benefits, and where to find it

[CFAT Fact sheet:](#) learn about the Clean Fuel Advance Technology (CFAT) grant program

[CFAT Request for Proposal:](#) \$625,000 available, deadline July 16, 2007

E10

NOW AT ALL DOTs

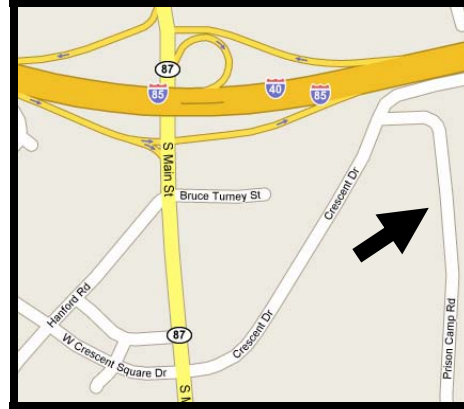
All listed here are open 24 hrs

Local DOT site

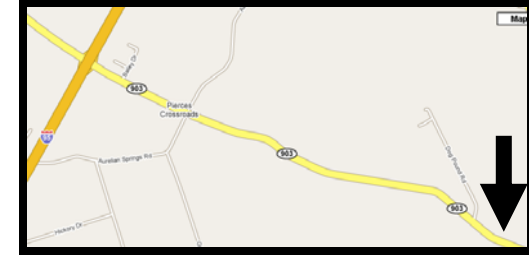
US 421: Yadkinville
Unifi Ind Rd. to Shacktown Rd.



I-85/40: Exit 147 - Graham
NC-87 S to Crescent to Prison Camp



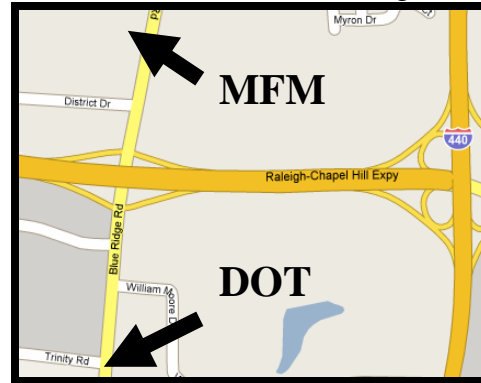
I-95: Exit 168 - Halifax
East on NC-903 for 3 miles



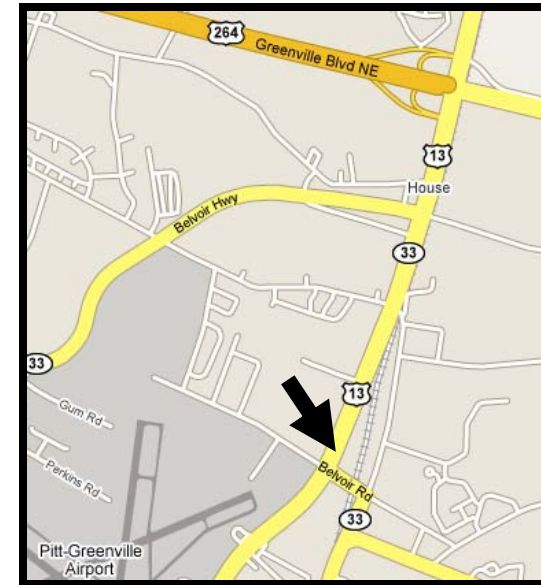
I-77: Exit 54 - Statesville
(2 miles north on I-77 from I-140)
North on US-21 for 0.5 miles



I-40: Wade Ave - Raleigh
DOT and MFM on Blue Ridge Rd.



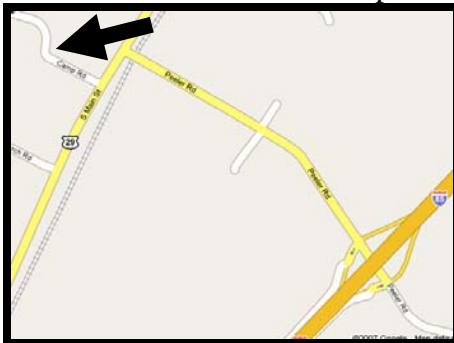
US-264: Greenville
South on US-13 for 1.5 miles



I-40: Exit 86 - Marion
South (left) on 226 for 0.5 miles



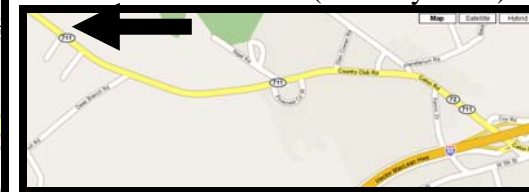
I-85: Exit 71 - Salisbury
Peeler Rd. to US-29 to Camp Rd.



I-40: Exit 398 - Burgaw
NC-53 S to W Bridges to N Smith



I-95: Exit 17 - Lumberton
NC-72 W to NC-711 (Country Club)



All DOT sites are listed
in the MFM Manual

