TECHNICAL ASSISTANCE NOTE **No. T-06-09**

Department of Education
John L. Winn, Commissioner

School Business Services
School Transportation Management Section

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Ultra Low Sulphur Diesel Fuel

DATE: **May 15, 2006**

TO: **School District Transportation Directors**

FROM: **Charlie Hood, Director, School Transportation Management Section**

SUBJECT: **Ultra Low Sulphur Diesel Fuel**

Transporting students efficiently, while ensuring their health and safety, is a critical component of access to learning. Beginning in July 2006, school districts will begin to experience the phasing in of Ultra Low Sulphur Diesel (ULSD) fuel. The transition to ULSD is to comply with the requirements of Title 40 CFR Part 80, requiring manufacturers to reduce airborne particulate emissions from diesel-powered vehicles. With this upcoming transition, a number of questions have arisen. This Technical Assistance Note answers frequently asked questions about the transition to ULSD.

1. Q. When will the change to ULSD occur?

A. "Diesel fuel meeting the new specification will be required at terminals by September 1, 2006, and at retail stations and wholesalers by October 15, 2006." [1, 2]

2. Q. Will this new fuel cost more?

A. The U.S. Department of Energy reports that, "Some refiners may be able to produce ULSD at a cost of about 2.5 cents more per gallon; however, at the volumes needed to meet demand, costs are estimated at 5.4 to 6.8 cents more per gallon, and they could be higher if supply falls short of demand and consumers bid up the price." Additionally, the Department of Energy reports that companies "[that operate] oil pipelines will incur large incremental capital and operating costs in distributing the new diesel fuel." [1]

[1] "The Transition to Ultra-Low-Sulfur Diesel Fuel: Effects on Prices and Supply," U.S. Department of Energy, Washington, DC, May 2001

[2] 40 CFR Part 80

3. Q. When will I have to have ULSD?

A. Although current diesel engines could continue to operate on the current higher sulphur diesel fuel, the engines that will be produced starting January 1, 2007, **must** use ULSD. The particulate traps attached to some of these engines may plug up quickly if operated on fuels containing more than 15 parts per million (ppm) of sulphur. The current 500-ppm diesel fuel will continue to be available through certain channels, but only in limited quantities and mostly for off-road, marine, and locomotive use.

4. Q. Will I have to clean out my stationary and mobile storage tanks before switching to ULSD?

A. No. Assuming that you make the switch by October 2006, or at least several months before delivery of vehicles requiring ULSD, you should not have to clean your storage tanks. By the time your district receives vehicles requiring ULSD, use of ULSD should have purged any remaining higher sulphur fuel from your system. You may wish to test the fuel at your pumps about a month in advance of receiving buses or other vehicles with 2007-certified diesel engines to ensure that all higher sulphur diesel fuel has been purged.

5. Q. How will ULSD affect my current diesel-powered fleet and support equipment?

A. Generally, the newer the engine, the less the effect on the fuel system. Conversely, some older engines in the fleet may experience leakage and failure of fuel system related seals. They may also experience injector pump problems related to the potential lower lubricity of the fuel, although the newest American Society for Testing and Materials (ASTM) diesel specification requires all diesel fuel to meet a minimum lubricity specification. Fuel providers will automatically use lubricity additives for ULSD, because they cannot meet the requirements without an additive. Some of the reduced lubricity of ULSD may be mitigated by running a five percent mixture of biodiesel (B5) in the fuel. In areas where additives are injected at the fuel terminal rack, you may have the option of specifying biodiesel as the lubricity additive. If you decide to use biodiesel, be aware that it has a detergent effect that will clean your fuel system. The side effect of this cleaning may be premature failure (plugging) of the fuel filter. Normally, this is experienced only once in the conversion process.

6. Q. Is there anything else I need to know if I decide to use a biodiesel mixture in my diesel-powered vehicles?

A. Yes. All diesel engine manufacturers have approved the use of biodiesel up to a concentration of B5. Some manufacturers have indicated that anything up to a B20 mixture is acceptable, but no manufacturer has officially approved it, since the ASTM has not yet published an official specification for B20. Additionally, concentrations above B5 may cause fuel gelling in extremely cold conditions (below freezing).

7. Q. Will ULSD be available during and after a natural disaster like a hurricane?

A. Currently it is not possible to answer this question. Like any motor fuel, it is possible that ULSD will be in short supply after a disaster. We recommend that you take steps to ensure that your district has an adequate supply of ULSD prior to any foreseeable emergency, such as a hurricane.

8. Q. My district does not have fuel tanks of its own, but relies on outside contractors to provide fuel. What steps should I take?

A. You should ensure that your contract requires your provider to provide your fleet with ULSD well in advance of receiving vehicles that require it. If needed, the provider should test and certify the fuel on an ongoing basis to ensure that levels of sulphur above 15 ppm or other contaminants are not introduced into your fuel.

9. Q. Where can I find the documents referenced in this Technical Assistance Note and additional information?

A. The following is a list of links to other resources on ULSD:

http://www.eia.doe.gov/oiaf/servicerpt/ulsd/pdf/ulsd.pdf#search='ULSD

http://www.chevron.com/products/prodserv/fuels/diesel/ulsd.shtml#A2

http://www.eia.doe.gov/oiaf/servicerpt/ulsd/chapter5.htm

http://bulktransporter.com/mag/transportation_ulsd_fuel_may/

http://www.access.gpo.gov/nara/cfr/waisidx_05/40cfr80_05.html

http://www.epa.gov/otaq/regs/hd2007/frm/f00057.pdf

http://www.epa.gov/EPA-AIR/2005/November/Day-22/a22807.htm

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cc: School District Superintendents
School District Fleet Service Managers
Charter Schools