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16. Abstract <p>The oil crisis of the 1970s forced Americans to reconsider using fossil fuels as a primary energy source. In the public transit arena, private transit companies found themselves unable to compete in the urban environment as rapidly rising oil prices negatively affected the economy and personal mobility. In response to the growing energy crises, the American government initiated policies designed to reduce the dependence on foreign oil. These new policies were implemented to reduce pollution, maintain fuel efficiency, and develop alternative fuels for use by private auto owners, governmental entities, and transit companies. This study offers a historical examination of the key legislation passed during the period of the 1970s - 2000s, provides a discussion of the types of alternative fuels developed and examines how transit agencies applied those technologies to try to meet the spirit of the legislation.</p>					
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**An Evaluation of Alternative Fuels Usage by
Public Transit Agencies**

by

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and

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Research Report SWUTC/09/167321-1

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ABSTRACT

The oil crisis of the 1970s forced Americans to reconsider using fossil fuels as a primary energy source. In the public transit arena, private transit companies found themselves unable to compete in the urban environment as rapidly rising oil prices negatively affected the economy and personal mobility. In response to the growing energy crises, the American government initiated policies designed to reduce the dependence on foreign oil. The implementation of these new policies were designed to reduce pollution, maintain fuel efficiency, and develop alternative fuels for use by private auto owners, governmental entities, and transit companies. This study examines key legislation passed during the period of the 1970s-2000s, and discusses of the types of alternative fuels. The study also offers a historical examination of alternative fuels use in selected transit agencies as they tried to meet the spirit of the legislation.

EXECUTIVE SUMMARY

When the Organization of Petroleum Exporting Countries (OPEC) curtailed exports of crude oil to the United States in the early 1970s, it forced Americans to reconsider the use of fossil fuels as the primary energy source of transportation fuels. Overnight, the automobile industry found itself in the unenviable position of adjusting to a rapidly changing marketplace.

The public transit industry also found itself facing new realities as commuters began looking for alternatives to the single occupant vehicle. By the 1990s, alternatives were available to transit agencies as a means of diversifying the fuels in their respective bus fleets. This study examines the use of alternative fuels by transit agencies during the period 1998-2006 in two sample groups. One, considered a National sample, used data from those transit agencies with at least 300 vehicles operating in maximum service. The second sample consisted of transit agencies in Texas.

The findings from this study indicated that for those transit agencies in the National sample, diesel and gasoline were the dominant fuels and the alternative fuel used most often was CNG, which increased 340 percent during the period of this study. Methanol and ethanol made up a small percent of alternative fuels used between 1998 and 2000 and was not used from 2001 to 2006. Likewise, bio-diesel was only evident between 2002 and 2006, with its greatest use being in 2005 when its use was 14 percent of the fuels used that year.

In the Texas sample, the study findings indicated that ethanol and methanol were not used at all between 1998 and 2006, but LPG, CNG, and LNG fuels experienced increased use (21, 103, and 131 percent, respectively). While CNG was the most used alternative fuels in the National sample, in the Texas sample LNG was the predominant alternative fuel.

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DISCLAIMER

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METHODOLOGY

The study examines the use of alternative fuels by transit agencies during the period 1998-2006. There are three objectives in this study. The first is an examination of the applicable legislation that influenced the development of alternative fuels and the types of alternative fuels available. The second objective identifies various pilot projects initiated throughout the country to evaluate the uses of alternative fuels. The final objective is an evaluation of transit data indicating the type of alternative fuels used by selected national transit agencies with at least 300 buses in their fleet, and selected transit agencies in Texas. These two groups will then be compared to identify trends and commonalities. Figure 1 indicates the cities whose transit agencies comprise the national sample and the cities in Figure 2 are those Texas cities whose transit agencies are part of the local sample.

Figure 1

Selected Cities from National Transit Agency Sample

Atlanta, GA.	New Jersey Transit
Baltimore, MD.	New York, NY.
Boston, MA.	Oakland, CA.
Chicago, IL.	Philadelphia, PA.
Cleveland, OH.	Pittsburgh, PA.
Dallas, TX.	Portland, OR.
Denver, CO.	San Antonio, TX.
Houston, TX.	San Francisco, CA.
Los Angeles, CA.	Seattle, WA.
Miami, FL.	St. Louis, MO.
Minneapolis/St Paul, MN.	Washington, DC.

Figure 2

Selected Cities from Texas Transit Agency Sample

Abilene	Galveston
Austin	Houston
Beaumont	Laredo
Brownsville	Lubbock
Corpus Christi	Port Arthur
Dallas (DART and ATE)	San Angelo
El Paso	San Antonio
Ft. Worth	Waco

BACKGROUND

Introduction

The oil crisis of the 1970s forced Americans to reconsider the use of fossil fuels as a primary energy source. The most notable impact of the oil crises occurred in the automobile industries, where fuel-efficient foreign imports replaced large American-made cars practically overnight. In the public transit arena, private transit companies found themselves unable to compete in the urban environment as rapidly rising oil prices negatively affected the economy and personal mobility. In response to the growing energy crises, the American government initiated policies designed to reduce the dependence on foreign oil.

The very thought of personal mobility without the easy availability of gasoline was unimaginable for most Americans, especially those raised in the era of high performance engines of the 1950s and 1960s. As a result, many Americans believed there was an unlimited supply of gas; inevitably, this encouraged heavy usage of gasoline which ultimately resulted in high levels of air pollution in cities throughout the country.

Why Alternative Fuels?

Several issues have led to the development of alternative fuels. The first issue describes the demands of a growing world population. Researchers estimate that the world population is doubling every thirty-five years; unfortunately, world energy consumption is doubling every fourteen years (Hodgson, 2008). Our energy demands will increase because more people will require coal to heat homes, cook food, and power factories. This means the demand for energy will out-pace the supply.

The second issue notes that car ownership worldwide is increasing. Currently, “more than one billion motorized vehicles are driven on the earth today” (Sperling and Gordon 2008, p. 3). Although the US car owners account for most of the vehicles, worldwide experts predict that the number of vehicles will increase annually by three percent (Sperling and Gordon 2008). In places like China and India, highways are being constructed that connect the city and outlying areas. In these countries, personal wealth is increasing, and the price of cars is becoming cheaper (Sperling and Gordon 2008; Ruth, 2008). As a result, more people are buying cars. This increased car ownership has meant an increase in oil consumption.

Researchers Sperling and Gordon indicated that about 50 percent of the world’s oil consumption is for transportation. For example, Sperling and Gordon stated, “The world consumes 85 million barrels of oil per day and demand is expected to reach 120 million barrels by 2030” (Sperling and Gordon, 2008, p. 4). Of the products produced from oil, gasoline accounts for roughly 66 percent of all oil used for transportation. In 2006, estimates show the U.S. consuming about 20.6 million barrels of petroleum daily. Roughly 58 percent is for gasoline and eight percent is for jet fuel, with smaller amounts for ship fuel and other uses (Heiman and Solomon 2007).

In addition to increases in car ownership, car manufacturers created larger and more powerful vehicles. This can be seen after the oil embargo of the 1970’s, where auto manufacturers were producing smaller more fuel efficient cars. As the 1990’s began, gasoline prices were low,

automobiles became larger and more powerful especially with the introduction of the sports utility vehicle; however, less regard was paid to fuel efficiency (Sperling and Gordon 2008).

The third issue involves congestion associated with the urban form. Sunbelt cities, like Los Angeles and Houston, are examples of cities built around the automobile. These cities have lower densities than northern cities which makes mass transportation problematic. As a result, more people drive causing traffic congestion and ultimately pollution or the releasing of greenhouse gases.

Finally, the above issues matter because of the climate changes occurring on Earth. Because of human activities, like factory production and driving, gases are released into the atmosphere. Most commonly, these gases are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O) and fluorinated gases (CFCs and HCFCs). When these gases are trapped they heat the atmosphere. This phenomenon is called global warming. (U.S. Environmental Protection Agency 2009). In 2007, the Intergovernmental Panel on Climate Change Fourth Assessment Report

indicated that “it is 90 percent certain that the emissions caused by humans are responsible for the increasing warming of the planet’s surface” (Hunt 2008, 9). Below are federal policies enacted to help combat the environmental changes caused by dependence on fossil fuels.

Climate Change

Refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). Climate change may result from:

- natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun;
- natural processes within the climate system (e.g. changes in ocean circulation);
- human activities that change the atmosphere's composition (e.g. through burning fossil fuels) and the land surface (e.g. deforestation, reforestation, urbanization, desertification, etc.)

(U. S. Environmental Protection Agency website
www.epa.gov)

NATIONAL LEGISLATION

While it may seem that the federal government has only recently become involved with issues of climate change, energy conservation, and breaking America's dependency on foreign oil, efforts to curb fossil fuel use have been ongoing since the 1970s. The following describes ten major federal policy initiatives designed to curtail air pollution and integrate alternative fuels technologies into our commuting society.

The first was the passage of the Clean Air Act of 1970. Using this act, Congress adopted new approaches to regulation such as national air quality standards and statutory deadlines. The second major policy was the reorganization of federal agencies focusing on policy development to address such issues as the Arab oil embargo, which began in 1973. A third policy, the Energy Policy Package of 1975, created by President Ford was an initiative that led to fuel economy standards for automobiles and light trucks. These regulatory standards, coupled with high gasoline prices, accelerated the move to more efficient cars in the late 1970s and early 1980s in the US.

The fourth policy appeared during the Iran-Iraq war of 1978-79. This policy involved (1) an excise tax credit for alcohols derived from biomass (primarily ethanol from corn) added to gasoline to make gasohol (10% ethanol in gasoline), and (2) the Synthetic Fuels Corporation (SFC) and its proposed major construction program for making transportation fuels (among other energy products) from coal, oil shale, and other domestic raw materials. The fuels and vehicle engines would not change, but the sources of the fuels would (U.S. Environmental Protection Agency 2009).

The fifth initiative was the Alternative Motor Fuels Act (AMFA) of 1988. This initiative addressed the concern of rising oil imports at a time of low oil prices and uneconomic synthetic fuels. AMFA started from the premise that making gasoline and diesel fuel from coal, oil shale, and the like would remain uneconomic but perhaps changing both the fuel and the vehicle engine could be made economic through research, development, and demonstration (RD&D). The fuels of primary interest were methanol, ethanol, and natural gas. By 1990, AMFA was working but the scale of action was so small as to make no measurable dent in the oil import dependence trend line (U.S. Department of Energy 2009).

The sixth initiative was the Clean Air Act Amendments (CAAA) of 1990, which amends the CAAA of 1970. The CAAA took a comprehensive approach to reducing pollution from motor vehicles. The Act provided for cleaning up fuels, cars, trucks, buses, and other motor vehicles. The CAAA included two components affecting nonpetroleum content of transportation fuels: (1) a requirement for oxygen in gasoline (at least 2.7% oxygen in the four winter months for 39 carbon monoxide nonattainment areas; at least 2.0% oxygen in "clean" gasoline (reformulated gasoline, or RFG) in the nine worst ozone nonattainment areas year-round), and (2) a requirement for "clean cars" in California and in fleets in the two dozen or so worst ozone nonattainment areas. By addressing air quality and making states responsible for its enforcement, the EPA set limits on the amount of pollutants that could be airborne anywhere. Individual states have the authority to adopt stronger pollution controls, but states are not allowed to weaken the

pollution controls set for the whole country. Individual states develop state implementation plans (SIP) that explain how each state will do its job under the Act (U.S. Environmental Protection Agency 2009; U.S. Department of Energy 2009).

The seventh major initiative was the National Energy Policy Act (EPACT) of 1992. The Bush Administration established new energy policy initiatives. This legislation empowered the Department of Energy (DOE) to expand its research and development in the transportation field and create programs for accelerating the availability of alternative fuel technologies, especially ethanol, methanol, and natural gas. The EPACT established the goal that 10 percent of all motor vehicle fuels consumed will be replacement or alternative fuels by 2000. Kelly (1998) reported that the EPACT increased this percentage to 30 percent by 2010. By offering financial incentives, public information programs and certification training for alternative-fuel technicians, it was anticipated that purchases of alternative fuels would increase. The EPACT also focused on establishing strong local regulatory programs requiring vehicle fleets operating in urban areas to use alternative fuels. Therefore, individual states became the backbone of EPACT by establishing mandates that gradually convert existing fleets to alternate fuels. In addition, in 1998, the U.S. House and Senate passed landmark legislation that altered the EPACT. This allowed the use of biodiesel fuel to meet requirements of federal and state fleets to purchase alternative fuel vehicles. The legislation will help boost farm income by making cleaner-burning biodiesel readily available to the nation's public and private truck and bus fleets. In addition, it will reduce federal and state expenditures on EPACT compliance.

In 2000, President Clinton signed Executive Order (E.O.) 13149, Greening the Government through Federal Fleet and Transportation Efficiency. This order required Federal agencies to take a leadership role in the reduction of vehicular petroleum consumption. Using alternative fuels and more efficient vehicles, agencies that operated 20 or more motor vehicles had to develop and implement a strategy that reduced their fleets' FY 1999 petroleum consumption by at least 20 percent by FY 2005 (U. S. Environmental Protection Agency 2009).

The ninth initiative involves the Energy Policy Act (EPAct) 2005 which provided grant programs, demonstration and testing initiatives and tax incentives that promote the production and use of alternative fuels and advanced vehicles. EPAct 2005 also amended existing regulations, including fuel economy testing procedures and EPAct 1992 requirements for federal and state and alternative fuel provider fleets (U.S. Department of Energy 2009).

The tenth effort involved former President George W. Bush signing the Energy Independence and Security Act of 2007 with the goal to increase energy efficiency and the availability of renewable energy. This law set standards for the U.S. to reduce dependency of oil by increasing the use of alternative fuels (U.S. Department of Energy website). The Energy Improvement and Extension Act of 2008 (Division B of the Emergency Economic Stabilization Act PL 110-343) was signed by former President George W. Bush on October 3, 2008. Title II of Division B of the law applies to the Clean Cities portfolio areas (alternative fuels, advanced vehicles, idle reduction, etc.). This bill provides tax credits and incentives for the use of biodiesel and other alternative fuels and offers tax credits for the use of plug-in hybrid vehicles (U.S. Environmental Protection Agency 2009).

TYPES OF ALTERNATIVE FUELS

Introduction

Throughout the past decade, federal policies have called for the use of renewable fuels that are sustainable. Heiman and Solomon (2007) indicate that about 25 percent of greenhouse emissions are directly related to transportation. While it is important to keep goods and people moving, growing concerns mount regarding the impact transportation has on the environment. As a result, researchers and environmentalists are calling for sustainable transportation. To achieve sustainability, transportation must lower greenhouse gas emissions and also lower conventional air and water pollutants (Heiman and Solomon 2007, 13). While the U.S. has not quite achieved sustainability, alternative fuels derived from renewable energy sources are a major part of the plan to achieve sustainability.

Principles of Sustainable Transportation

- Renewable fuel supply and increased energy efficiency
- Minimal environmental impact
- Carbon neutrality
- Socially acceptable cost
- Equitably available fuels and vehicles
- Vehicles and fuels that do not compound other major social problems

(Heiman and Solomon 2007.)

The need for diversification and sustainability led the transit industry to initiate aggressive research into the applicable uses of alternative fuels. Supported by the federal government, the Transit Bus Evaluation Program was designed to encourage alternative fuels in the transit bus industry. Individual states began demonstration projects focusing on emissions characteristics, fuel economy, reliability, and operating costs of various bus fuels and engines. In Texas, the Governor's Energy Office for Alternative Fuels Demonstration Projects established four projects demonstrating a range of alternative fuels and their applications. Thus, in the early 1990s the transit industry was able to take the lead in alternative fuel research and applicability.

- Below is the definition of alternative fuel sources provided by the Department of Energy and Energy Policy Act of 1992: Alternative diesel (including biodiesel, Foscher-Tropsch and diesel blends);
- Methanol, ethanol, and other alcohols;
- Liquefied petroleum gas (propane)
- Blends of 85 percent or more of alcohol with gasoline;
- Coal-derived liquid fuels;
- Fuels (other than alcohol) derived from biological materials;
- Natural gas and liquid fuels domestically produced from natural gas;
- Hydrogen; and
- Electricity

Generally, four categories of "alternative fuels can be derived from renewable energy sources: grain-based ethanol, bio mass (cellulosis) ethanol, biodiesel, and biomass (woody) methanol"

(Heiman and Solomon 2007). Below is a more brief description of these alternative fuels followed by descriptions of low emitting alternative fuels derived from natural resources.

Alternative Diesel

Alternative diesel describes non-petroleum and petroleum diesel blends designed for use in diesel engines. Biodiesel, Fischer-Tropsch diesel and ethanol/diesel blends are three examples of the latest types of alternative diesel.

1. *Biodiesel* is produced from animal fats, but it is primarily derived from plant and vegetable oil, i.e. soybeans, rape, and coconut. This fuel is typically blended with diesel. Earlier blends were 40 percent vegetable oil and 60 percent petroleum diesel. Currently, B20 is used which contains 80 percent petroleum and 20 percent biodiesel. B20 shows promise as it can be used in vehicles without making any modifications to the engine (U S Department of Transportation, 2006). In Europe, biodiesel is primarily made from rapeseed, while jatropha is the crop used to produce biodiesel in China, India, Egypt, Tanzania and Kenya.
2. *Fischer-Tropsch diesel*, unlike biodiesel, this synthetic diesel is produced using coal, natural gas, or biomass feedstock. This fuel can be blended with petroleum or used alone. Like biodiesel, Fischer-Tropsch diesel can be used in vehicles without making any modifications to the engine (U S Department of Transportation, 2006).
3. *Diesel/Alcohol* blends are called oxygenated diesel or diesohol and are blends of up to 15 percent of ethanol and/or methanol and petroleum diesel. These products are known as O₂Diesel and E-Diesel. Like Fischer-Tropsch diesel and biodiesel, diesohol can be used in diesel burning engines without any modifications.

Methanol

Methyl alcohol or methanol is primarily produced from natural gas, feedstock/wood, biomass, and grains. While this liquid is clear and odorless, it is nonetheless quite toxic to humans and animals if ingested. Although it can be used at 100 percent, methanol is blended with 15 percent gasoline and sold as M85 for use by cars, trucks and transit vehicles.

Ethanol

Ethanol is considered a grain alcohol. Ethanol is very similar to methanol, though manufactured exclusively from biomass (agricultural grain products, primarily). Midwestern states such as Nebraska, South Dakota, Iowa, and Illinois produce most of the ethanol used in the U.S. Like methanol, this fuel is usually mixed with 15% gasoline, making E85 fuel. Gasohol, (10% ethanol, 90% gasoline) is also a popular use of ethanol. According to Ruth (2008), in *Bio or Bust?*, Americans are using five billion gallons of ethanol. While most of the ethanol in the US is made from corn, in Brazil, ethanol is derived from sugar cane (Ruth 2008).

Biofuels (biodiesel) and Biomass

Biofuels are characterized as being created in three generations of feedstock. The first generation feedstock produces biofuels made primarily from food sources, i.e. corn and soybeans. The second generation of feedstock produces biofuels derived from left over crops and forest harvests and “shows much promise for near-term adoption with the development of cellulosic conversion technologies” (U.S. Department of Agriculture and Department of Energy 2008, 5).

The third generation of feedstock involves non-food sources and left over plant parts, wood, waste, grasses, algae, etc. as the bases of generating fuel (Ruth, 2008). “They are designed exclusively for fuels production and are commonly referred to as ‘energy crops’. This generation represents a key long-term component to a sustainable biofuels industry” (U.S. Department of Agriculture and Department of Energy 2008, 5).

Natural Gas

Natural gas is comprised of hydrocarbons - primarily methane, ethane, and propane- and is produced from gas wells or in conjunction with crude oil production. Natural gas is available in two forms: compressed gaseous state (CNG) or in a liquefied state (LNG). Natural gas is considered a viable alternative fuel because it is produced domestically in the US, is clean burning and can be transported via pipeline.

1. *CNG* is without color and odor. In order to use CNG, cars must use a compression tank at high pressure (up to 3,600 pounds per square inch). This requires redesign of the car’s tank to accommodate this higher octane. According to the US Department of Energy, cars fueled by CNG provide similar fuel efficiency as gasoline burning vehicles based on gasoline gallon equivalent (GGE). (A GGE is the amount of alternative fuel that contains the same amount of energy as a gallon of gasoline.) A GGE equals about 5.7 lbs (2.6 kg) of CNG (US Department of Energy 2009). In addition, the California Energy Commission states that CNG vehicles show an average reduction in ozone-forming emissions of 80 percent compared to gasoline vehicles. Although CNG stations are not widely available like gas stations, CNG can be purchased throughout the US. While Texas only has 11 to 20 stations, California has more than almost 200 stations because CNG is widely used by fleet vehicles and transit companies.
2. *LNG* is produced by purifying and condensing natural gas into liquid by cooling to -260°F (-162°C). At atmospheric pressure, LNG occupies only 1/600 the volume of natural gas in vapor form. Unlike with CNG, only small amounts of LNG can be stored. LNG is stored in double-wall, vacuum-insulated pressure vessels to ensure that it remains at the proper temperature. LNG fuel systems typically are only used with heavy-duty vehicles. A GGE equals about 1.5 gallons of LNG (US Department of Energy 2009).

Propane

Liquefied petroleum gas (LPG) consists mainly of propane, propylene, butane, and butylene in various mixtures. Propane and butane, along with other gases, are by-products of the crude oil refining and natural gas processing. Most of the LPG consumed in the U.S. is produced domestically. LPG is colorless, odorless, and non-toxic; in addition it presents no threat to soil, surface water, or groundwater” (US Department of Energy 2009).

Although “propane has a high octane rating and excellent properties for spark-ignited internal combustion engines, ... less than two percent of U.S. propane consumption is used for transportation fuel” (US Department of Energy 2009). Propane-powered vehicles reportedly have less carbon build-up compared to gasoline- and diesel-powered vehicles. According to the National Propane Gas Association, spark plugs from a propane vehicle last from 80,000 to 100,000 miles and propane engines can last two to three times longer than gasoline or diesel engines. In addition, propane vehicles have a dual fuel capability and the conversion process is

straightforward, usually costing \$2,000-\$3,000. Estimates are that more than 350,000 vehicles, mostly in fleets, are traveling the nation's highways under propane power. Propane is powering taxis in Las Vegas; school buses in Kansas City and Portland, Oregon; sheriff and police cars in other communities; and in dozens of fleets around California. Propane is used in both light- and medium-duty vehicles. Estimates have placed the number of registered vehicles in California that are powered by propane as high as 40,000.

Electricity

Unlike the conventional combustion engine found in cars, electric cars get their energy from the batteries. These cars are quieter than most vehicles, and more importantly, they leave a substantially lower carbon footprint than conventional cars. Problems with electric cars include lower performance, travel limited to 30 miles, and problems recharging batteries. In the past few years, hybrid models with conventional engines, electric generators and batteries became popular due to Toyota's Prius; and now, various cars, trucks and sport utility vehicles of varying size are available as hybrids. Nonetheless, newer technology hopes to resolve some of the issues and challenges of electric cars. In summer of 2009, BMW hopes to have 500 test fleet cars operating in the US. In Germany, the federal government, German automakers, and power utility companies are working together to place 50 BMW and 100 Smart cars on the road for testing in 2009. They predict that with new technology, i.e. green electricity, their electric car will leave an even smaller carbon footprint emitting only five g of CO₂ instead of 115 for traditionally generated electricity. Nonetheless, German officials believe the success of Germany's electro-mobility program will significantly impact the German government's goal to have one million electric cars on the road by 2020 (Deutschland Special 2009).

Hydrogen

Researchers characterize this fuel as developmental fuel. Typically, hydrogen is produced by steam-methane forming into natural gas that compressed or liquefied. However more sustainable production of hydrogen can be produced as electrolysis of water and gasification of biomass or coal. Electrolysis cost "3-4 times as much to generate than traditional hydrogen production" thus making it a very expensive albeit cleaner fueling option (Heiman and Solomon 2007). Currently, demonstrations with buses are underway using hydrogen blended with natural gas called hythane. Finally, hydrogen fuel cell vehicles are also an option, however, they require an onboard hydrogen reformer (U.S. Department of Transportation 2006).

Benefits of alternative fuels

There are numerous reasons for transit agencies to use alternative fuels. One benefit is to lessen the impact that diesel fuel has on the environment. Perhaps the most significant is found in the environmental benefits to humans and the environment. The FTA Alternative Fuels study (2006) specifically identifies these benefits as including lower tailpipe emissions into the air and reduced soil and water contamination resulting from diesel spills. Furthermore, growing awareness of environmental degradation caused by fossil fuels has led to increased efforts in finding creative uses of renewable energies, sustainability strategies, and recycled materials in capital improvement projects. (Research Results Digest 89, March 2009, page 3. Transportation Cooperative Research Program)

TRANSIT DATA

The objective of this study was the identification of trends involving the use of alternative fuels. It is assumed that all of the agencies relied almost exclusively on diesel fuels, but integrated some form of alternative fuels as an energy source for their respective fleets.

National Sample

The data used in this study were found in the Federal Transit Administration (FTA) National Transit Database. This is an annual report published by the FTA providing details of the transit operations from agencies nationwide. The agency data considered as the national sample are found in Figure 3 and were taken from the 1998 through 2006 reporting years. A complete listing of data can be found in Appendix A.

Figure 3
Transit Agencies in National Sample

Los Angeles County Metropolitan Transportation Authority (LACMTA)-CA (9154)
San Francisco Municipal Railway (MUNI)-CA (9015)
Alameda-Contra Costa Transit District (AC Transit)-CA (9014)
Orange County Transportation Authority (OCTA)-CA (9036)
Denver Regional Transportation District (RTD)-CO (8006)
Washington Metropolitan Area Transit Authority (WMATA)-DC (3030)
Miami-Dade Transit (MDT)-FL (4034) (4034)
Metropolitan Atlanta Rapid Transit Authority (MARTA)-GA (4022)
Chicago Transit Authority (CTA)-IL (5066)
Pace - Suburban Bus Division (PACE)-IL (5113)
Massachusetts Bay Transportation Authority (MBTA)-MA (1003)
Maryland Transit Administration (MTA)-MD (3034)
Metro Transit-MN (5027)
Bi-State Development Agency (METRO)-MO (7006)
New Jersey Transit Corporation (NJ TRANSIT)-NJ (2080)
MTA New York City Transit (NYCT)-NY (2008)
The Greater Cleveland Regional Transit Authority (GCRTA)-OH (5015)
Tri-County Metropolitan Transportation District of Oregon (TriMet)-OR (0008)
Southeastern Pennsylvania Transportation Authority (SEPTA)-PA (3019)
Port Authority of Allegheny County (Port Authority)-PA (3022)
Metropolitan Transit Authority of Harris County, Texas (Metro)-TX (6008)
Dallas Area Rapid Transit (DART)-TX (6056)
VIA Metropolitan Transit (VIA)-TX (6011)
King County Department of Transportation - Metro Transit Division (King County Metro)-WA (0001)

Source: Department of Energy

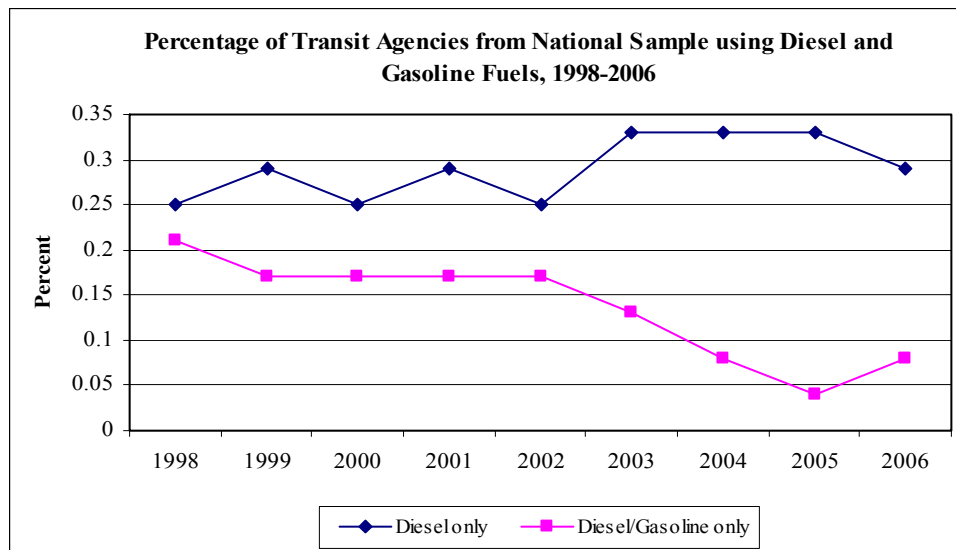
Diesel and Gasoline Fuels - It was anticipated that the selected transit agencies would incorporate some form of alternative fuels in their respective fleets. However, some agencies relied exclusively on diesel or diesel and gasoline fuels (see Figure 4). In 1998, 25 percent of the

agencies relied solely upon diesel fuels. This figure reached 33 percent in reporting years 2003 through 2005, but decreased to 29 percent in 2006. Still there was a 16 percent increase from 1998 to 2006.

In 1998, 21 percent of the selected agencies used a combination of only diesel and gasoline in their fleet. By 2006, this percentage fell to eight percent, a decrease of 62 percent. Likewise, those agencies that used traditional gasoline fuels also decreased from a high of 38 percent in 1998 to 29 percent in 2006, a decline of almost 24 percent.

In 2005, two agencies, MTA New York City Transit and Pace-Suburban Bus Division (IL), opted not to use diesel at all, preferring to use a combination of CNG and bio-diesel and gasoline and bio-diesel, respectively. The following reporting year, both agencies indicated returned use of traditional diesel. However, Metro Transit (MN) reported the use of bio-diesel exclusively.

Figure 4

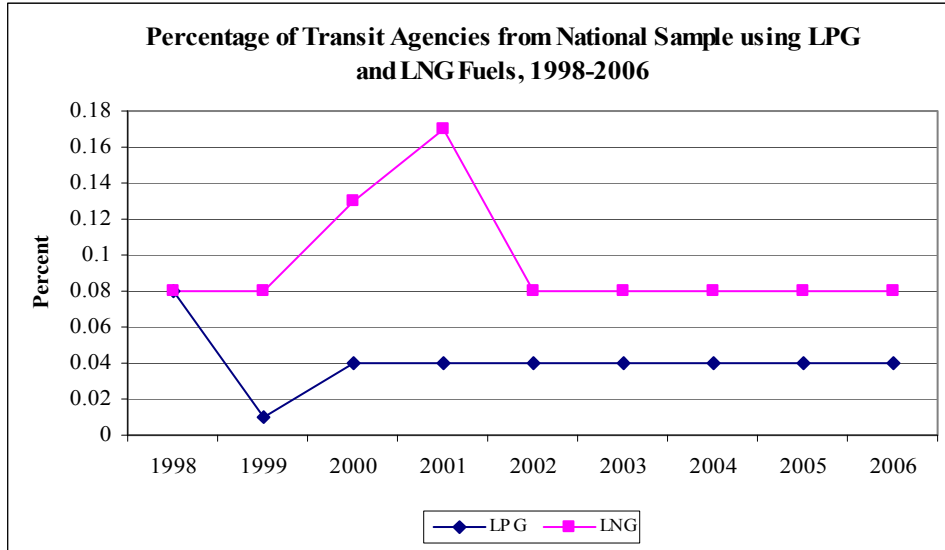


Source: Department of Energy

LPG and LNG - Eight percent of the selected transit agencies included LPG and LNG in 1998 (see Figure 5). However, by 2006 these transit agencies reduced the use of both fuels by four and eight percent, respectively. The only transit agency that used LPG every year between 1998 and 2006 was San Antonio’s Via Metropolitan Transit. Harris County’s Metropolitan Transit (Houston Metro) and Oregon’s Tri-County Metropolitan District (Tri-Met) consistently used LNG between 1998 and 2001, but indicated no use from 2002 to 2006. Interestingly, Dallas Area Rapid Transit and the Orange County Transportation Authority did not use LNG from 1998 to 2001, but began using the fuel from 2002 through 2006.

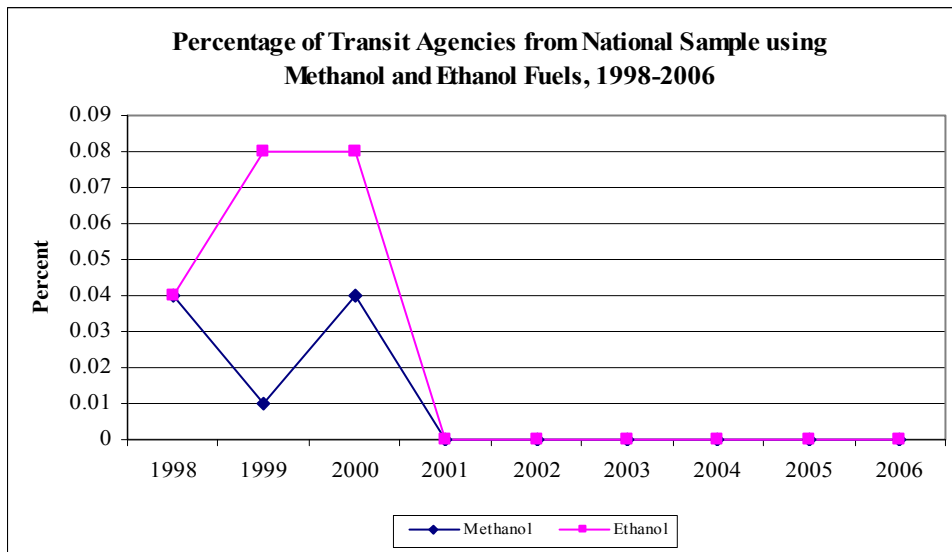
Methanol and Ethanol - Of the transit agencies in the national sample, only the Los Angeles County Metro used methanol and ethanol fuels. However, the data indicated that these fuels were only used between 1998 and 2000. Starting in 2001, Los Angeles County Metro switched to a mix of diesel and CNG fuels through 2006 (see Figure 6).

Figure 5



Source: Department of Energy

Figure 6

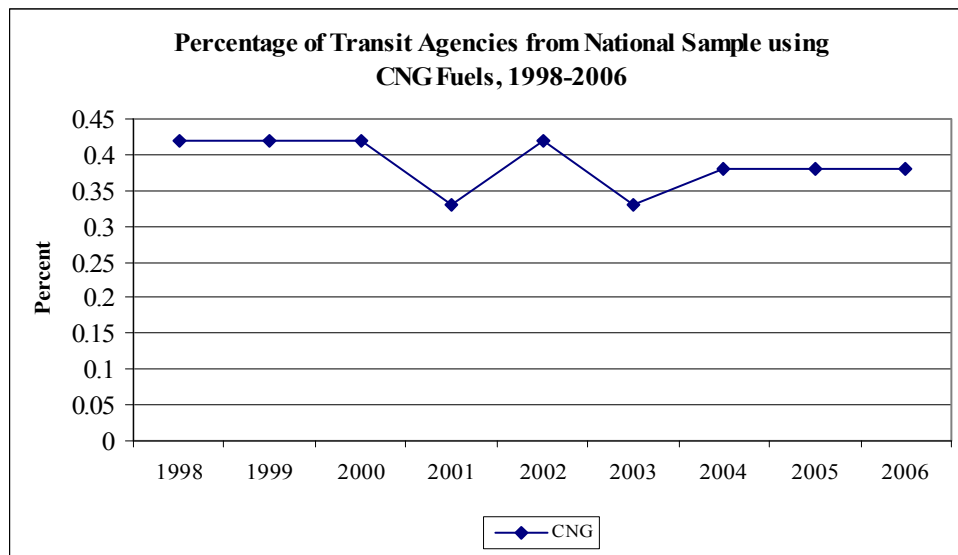


Source: Department of Energy

CNG - Between 1998 and 2006, CNG fuels were included in the fleets of the selected agencies. Still, CNG use declined 10 percent between 1998 and 2006 from 42 to 38 percent (see Figure 7). In 1995, six transit agencies (25%) used only a combination of diesel and CNG fuels, but increased to nine agencies (37%) by 2006, an increase of 50 percent.

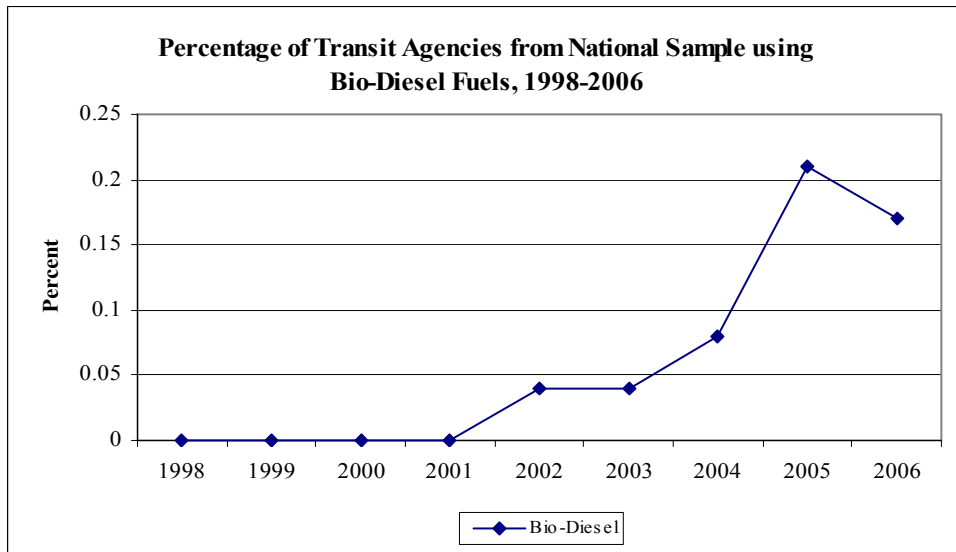
Bio-Diesel - Bio-diesel fuels were not used by the national sample between 1998 and 2001. In 2002, Minneapolis-St. Paul Metro Transit used bio-diesel and again in 2005 and 2006. In 2003, only the King County DOT used bio-diesel, but in 2004 the Denver Regional Transportation District joined them in using the alternative fuel. By 2005, five of the 24 transit agencies (21%) in the national sample indicated using bio-diesel fuels in their respective fleets. However, the data indicates that the MTA New York City Transit used bio-diesel in 2005, but not in 2006, thus reducing the number of transit agencies using the fuel to four, or 17 percent of the national sample. Nonetheless, the use of bio-diesel increased from one agency in 2002 to a high of five agencies in 2005 before falling to four agencies in 2006 (see Figure 8).

Figure 7



Source: Department of Energy

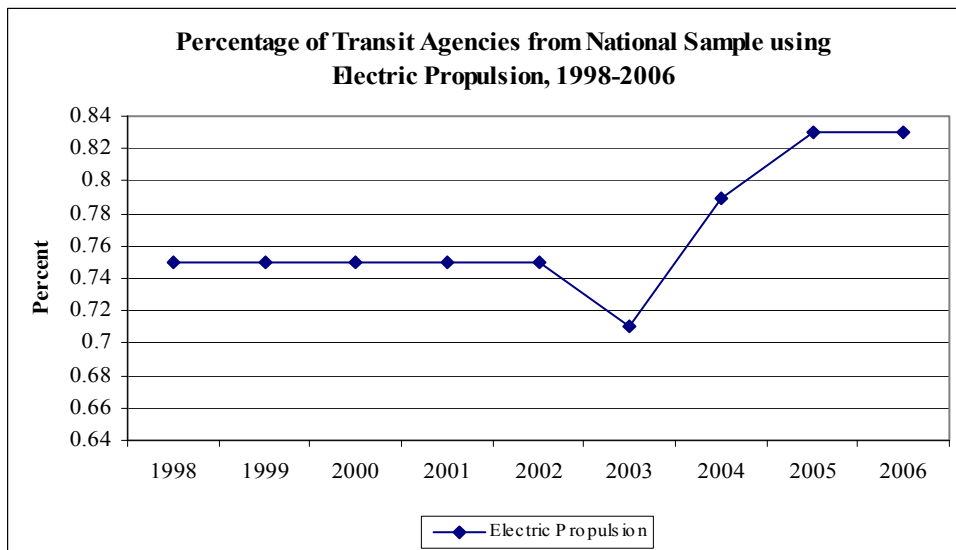
Figure 8



Source: Department of Energy

Electric Propulsion - Electric propulsion indicates the use of some form of light rail and is typically measured in kilowatt hours of energy used. There was an increase of 11 percent in electric propulsion used from 1998 to 2006, going from 75 percent to 83 percent usage. This represents a significant commitment by the national sample to embrace electric propulsion as a means of diversifying fuels consumption (see Figure 9).

Figure 9



Source: Department of Energy

Summary

Diesel and gasoline were the dominant fuels used during this period. However, the data indicates that there was a decrease in diesel and gasoline use of four and a half percent from 1998 to 2006. The alternative fuel used most often was CNG, which increased 340 percent during the period of this study. CNG was one of three alternative fuels used every year of this study. The others being LPG and LNG. The percentage change of LPG was minimal, but the percentage change of LNG was nearly 738 percent (see Figure 10).

Methanol and ethanol made up a small percent of alternative fuels used between 1998 and 2000 and was not used from 2001 to 2006. Likewise, bio-diesel was only evident between 2002 and 2006, with its greatest use being in 2005 when its use was 14 percent of the fuels used that year.

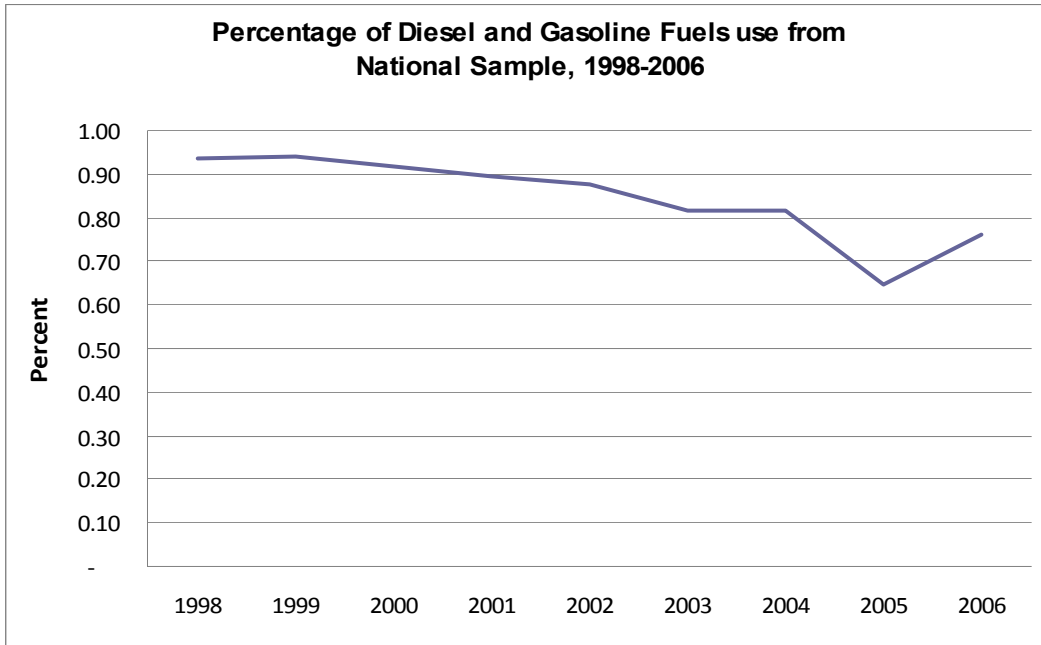
While it appeared from the national sample that transit agencies were diversifying their fuels use, the traditional forms (diesel and gasoline) remained the predominant form of fuels use even though its use declined from 1998 to 2006 (see Figure 11). The sample data indicates that CNG was the apparent alternative fuel of choice as evident in the percentage increase from 1998 to 2006 (see Figure 12).

Figure 10
Sources of Energy (in 000's) for Selected Transit Agencies Nationwide, 1998-2006

Year	Diesel Fuel	Gasoline	LPG	LNG	Methanol	Ethanol	CNG	Bio-Diesel	Other
	Gallons								
1998	270,413.17	2,146.07	1,372.06	1,435.58	436.23	2,544.47	13,254.65		76.00
1999	277,717.22	1,856.62	1,255.03	908.99	995.08	421.35	14,231.40		10.72
2000	287,530.12	1,755.03	1,195.65	4,671.95	31.71	35.48	20,143.22		4.24
2001	284,082.90	1,794.02	1,945.66	5,195.09			25,930.86		
2002	381,023.06	1,753.74	2,546.31	8,067.79			36,962.33	40.05	5,974.44
2003	256,003.28	1,834.87	2,490.71	9,832.53			45,690.00	1.00	112.16
2004	266,112.38	2,117.64	2,274.78	10,811.08			46,380.92	123.42	924.10
2005	217,275.77	1,637.91	2,386.20	12,001.69			55,931.56	48,505.86	
2006	257,873.70	2,276.30	1,865.69	12,029.69			58,367.09	8,598.76	3.46
TOTALS	2,498,032	17,172	17,332	64,954	1,463	3,001	316,892	57,269	7,105

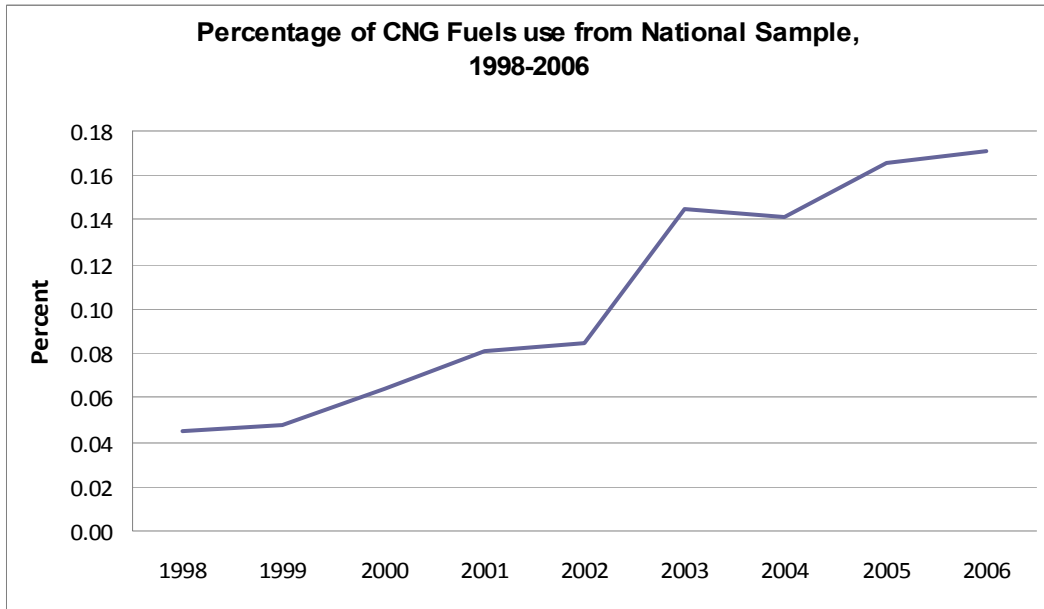
Source: Department of Energy

Figure 11



Source: Department of Energy

Figure 12



Source: Department of Energy

Texas Sample

Like the national sample, the data obtained from selected Texas transit agencies was also obtained from the Federal Transit Administration (FTA) National Transit Database for the reporting years 1998 through 2006. However, unlike the data from the national sample, the Texas sample did not report utilizing methanol, ethanol, or bio-diesel. Only the Dallas Area Rapid Transit and Houston METRO reported using electric propulsion (light rail transit). The only alternative fuels used by the Texas sample were LPG, LNG, and CNG. Even though data from the Metropolitan Transit Authority of Harris County (Metro), Dallas Area Rapid Transit (DART), and the San Antonio VIA Metropolitan Transit (VIA) appeared in the national sample, these agencies are also represented in the Texas sample. A complete listing of the selected Texas transit agencies are found in Figure 13 and the associated data can be found in Appendix B.

Figure 13

Transit Agencies in Texas Sample

Abilene Transit System (CityLink) (6040)
Amarillo City Transit (ACT) (6001)
ATC / Vancom (ATC) (6092)
Beaumont Municipal Transit System (BMT) (6016)
Brazos Transit District (The District) (6059)
Capital Metropolitan Transportation Authority (CMTA) (6048)
City of Brownsville - Brownsville Urban System (BUS) (6014)
City of Grand Prairie Transportation Services Department (Grand Connection) (6068)
City of Mesquite (MTED) (6070)
City of San Angelo (COSA) (6037)
City Transit Management Company, Inc. (Citibus) (6010)
Corpus Christi Regional Transportation Authority (The B) (6051)
Dallas - VPSI, Inc. (6084)
Dallas Area Rapid Transit (DART) (6056)
Fort Worth Transportation Authority (The T) (6007)
Golden Crescent Regional Planning Commission (VICTORIA TRANSIT) (6095)
Handitran Special Transit Division - City of Arlington (Handitran) (6041)
Hill Country Transit District (The Hop) (6091)
Island Transit (I T) (6015)
Laredo Transit Management, Inc. (El Metro) (6009)
Lower Rio Grande Valley Development Council (LRGVDC) (6090)
Mass Transit Department - City of El Paso (Sun Metro) (6006)
Metropolitan Transit Authority of Harris County, Texas (Metro) (6008)
Midland-Odessa Urban Transit District (EZ RIDER) (6097)
Port Arthur Transit (PAT) (6013)
The Gulf Coast Center (Connect Transit) (6082)
VIA Metropolitan Transit (VIA) (6011)
Waco Transit System, Inc. (WTS) (6012)

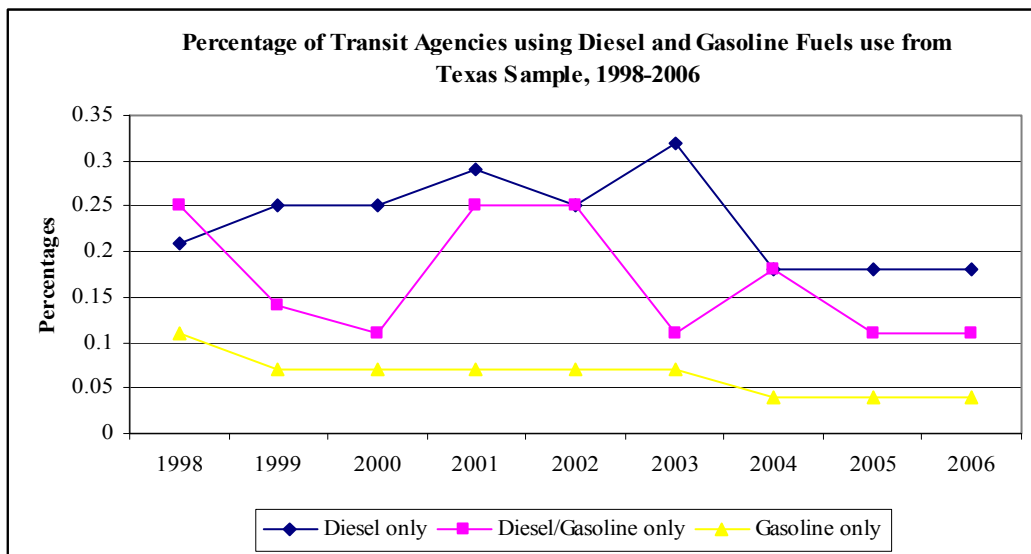
Source Department of Energy

Diesel and Gasoline Fuels - There are 28 transit agencies in the Texas sample and diesel was consistently the dominant form of fuels used. In 1998, 21 percent of the Texas sample used diesel only and this increased to 32 percent in 2003. For the years 2004 through 2006 only 18 percent of the Texas sample relied solely upon diesel (see Figure 14).

In 1998, only three agencies in the Texas sample relied solely upon traditional gasoline fuels in their fleet. Between 1999 and 2002 that figure dropped to two agencies and finally one agency from 2004 through 2006.

In 1998, seven agencies (25%) indicated that they did not use alternative fuels at all, instead relying on a mix of diesel and gasoline fuels. By 2006, only three agencies in the Texas sample indicated using diesel and gasoline only.

Figure 14

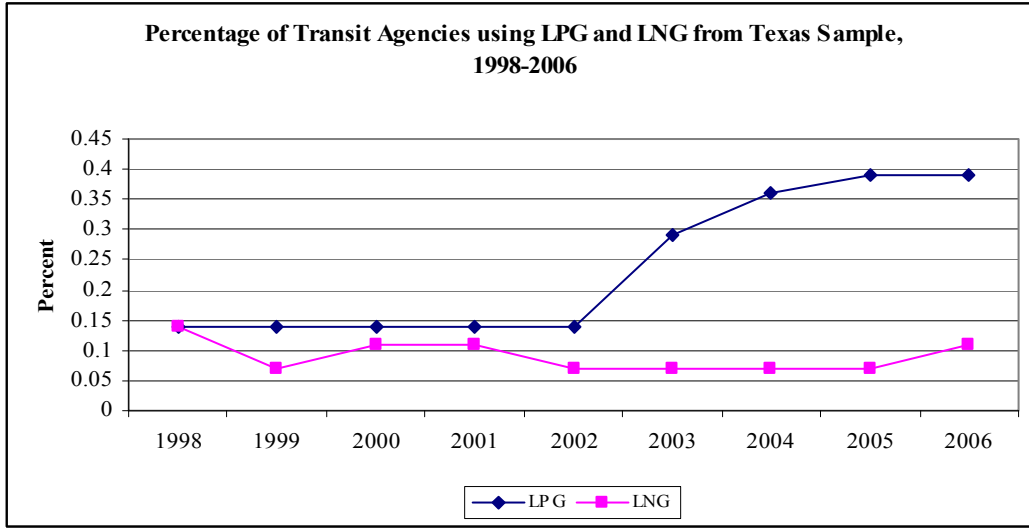


Source: Department of Energy

LPG and LNG - Data from the Texas sample indicated that LPG use increased by over 178% from 1998 to 2006. In 1998 only four agencies used LPG and that increased to 11 agencies in 2006. Conversely, LNG use declined 21 percent, from 14 percent to 11 percent between 1998 and 2006 (see Figure 15).

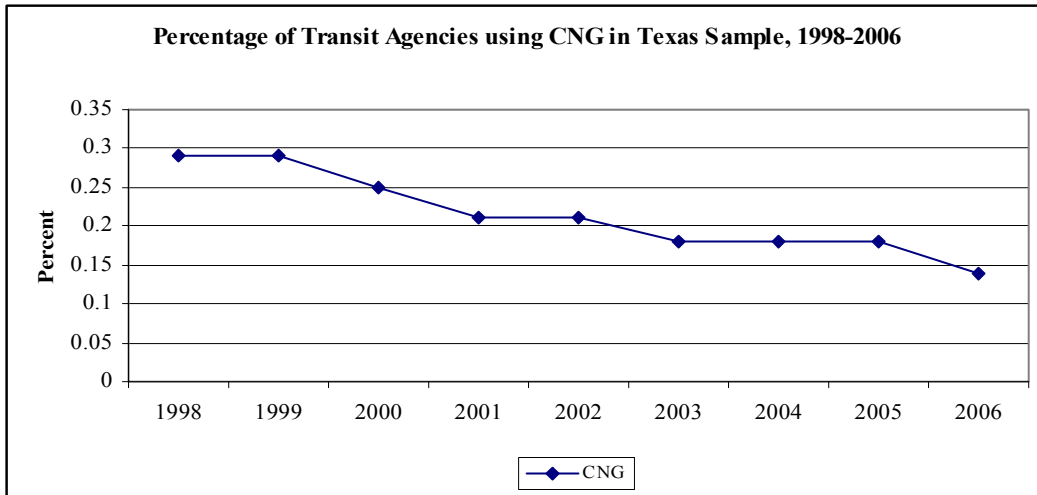
CNG - Similar to the trend found with LNG use, CNG use also decreased over the study period by 51 percent (see Figure 16).

Figure 15



Source: Department of Energy

Figure 16



Source: Department of Energy

While the National sample included only those transit agencies with at least 300 buses in their fleets, the Texas sample presented a wider range of vehicles operating in maximum service (VOMS). Therefore, a more detailed examination of the agencies in the Texas sample with VOMS over 300 would ease the task of comparing trends between the two samples. As of the reporting year of 2006, only four agencies in the Texas sample fit into this category: Austin’s Capital Metropolitan Transportation Authority (CMTA), the Dallas Area Rapid Transit (DART), the Metropolitan Transit Authority of Harris County, Texas (Houston METRO), and San

Antonio's VIA Metropolitan Transit (VIA). Data from these transit agencies can be found in Appendix C.

- Only one of the four (VIA) used LPG during the study period and its use increased 53 percent from 1998 to 2006;
- CNG was used by three of the four agencies in 1998, but its use generally declined and by 2006 none of the agencies indicated its use; and
- Like CNG, LNG use was minimal. Only two agencies reported using it during the study period and by 2006 it was not used at all.

Summary

Figure 17 shows the total fuels used by the transit agencies used in the Texas sample. Even though ethanol and methanol were not used by the Texas sample between 1998 and 2006, the data indicates that there was a commitment to diversify fuels used in their respective fleets. All three alternative fuels used by the Texas sample experienced increases during the study period (LPG-+21%, LNG-+131%, and CNG-+103%) (see Figure 18). Even though diesel and gasoline remained the dominant fuels, their use decreased between 1998 and 2006 by 17 and 38 percent, respectively (see Figure 19).

Most of the transit agencies in the Texas sample were consistent in their use or non- use of alternative fuels. However, there were a few exceptions.

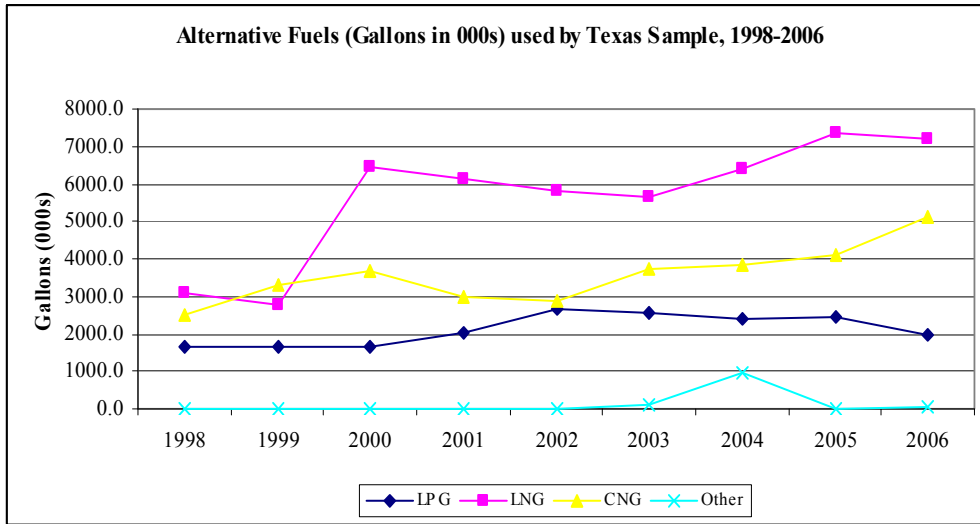
- The Brazos Transit District included CNG fuels between 1998 and 2000. Between 2001 and 2005 they relied solely on diesel and gasoline fuels, but returned to alternative fuels in 2006 when LNG made up only two percent of the fuels used.
- Even though Dallas DART's light rail system was in use during the study period, the agency also used CNG fuels in 1998 and 1999. In 2000, they switched to LNG fuels which made up nearly half (48%) of the fuels used that year. The use of LNG fuels decreased slightly to 46 percent of the fuels used by the 2006 reporting period. Incidentally, the use of electric propulsion, measured in kilowatts per hour, increased 185 percent between 1998 and 2006, from 20,724 kilowatt hours to 59,085 kilowatt hours.
- Houston METRO used both LPG and LNG from 1998 to 2001. In 2002, they reported the use of only LNG. From 2003 to 2006 they reported no alternative fuels used in their bus fleets. However, METRO's light rail system came online in 2003 and experienced a 49 percent increase in kilowatt hours used between 2003 and 2006.

Figure 17
Sources of Energy from Texas Sample (gallons in 000's), 1998-2006

	Diesel	Gasoline	LPG	LNG	CNG	Other	TOTAL
1998	36,432	2,087	1,641	3,097	2,531	-	45,787
1999	39,150	2,009	1,659	2,766	3,285	-	48,870
2000	38,789	1,670	1,643	6,435	3,663	-	52,199
2001	38,951	1,655	2,020	6,124	2,999	-	51,749
2002	37,478	998	2,645	5,829	2,866	-	49,816
2003	33,405	1,197	2,578	5,640	3,709	115	46,643
2004	31,409	966	2,397	6,415	3,863	962	46,011
2005	30,603	1,027	2,479	7,357	4,112	21	45,599
2006	30,208	1,274	1,997	7,182	5,145	42	45,848

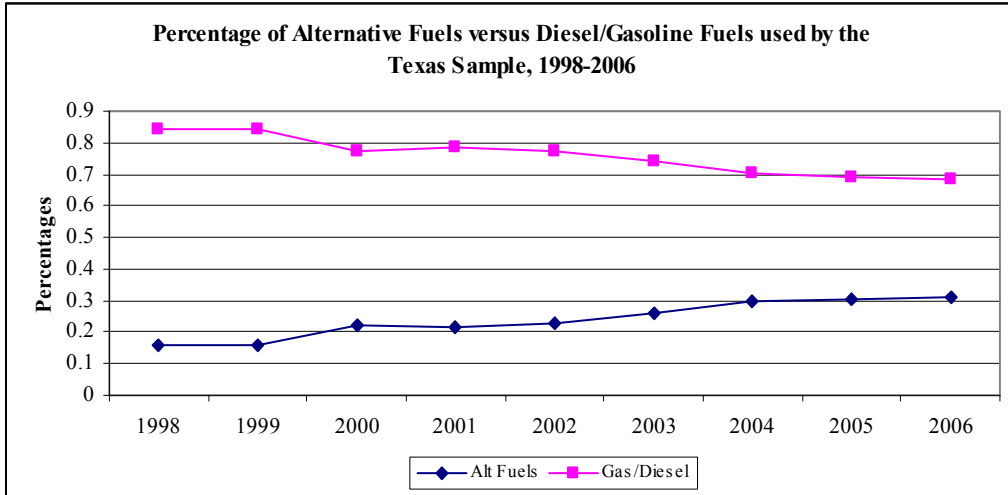
Source: Department of Energy

Figure 18



Source: Department of Energy

Figure 19



Source: Department of Energy

REFERENCES

- Alexander, Lamar. 2008. A new Manhattan project for clean energy independence. *Issues in Science and Technology* 24 (4): 39-44.
- California Energy Commission, retrieved from <http://www.consumerenergycenter.org/transportation/afvs/cng.html> on April 28, 2009.
- Electric cars: Germany is pushing ahead with our electromobile future. 2009. *Deutschland Special*.
- Heiman, Michael K. and Solomon, Barry. D. 2007. Fueling U.S. transportation: The hydrogen economy and its alternatives. *Environment* 49 (8): 11-25.
- Hodgson, P.E. 2008. The energy crisis. *Modern Age* 50 (2): 140-147.
- Hunt, Suzanne. 2008 Biofuels, neither savior nor scam: The case for a selective strategy. *World Policy Journal* 25 (1): 9-17.
- Magdoff, Fred. 2008. The political economy and ecology of biofuels. *Monthly Review* 60 (3): 34-50.
- Rubin, Jonathan. 2003. Driving to new sources of transportation energy: Gaining flexibility, ensuring supply, and reducing emissions. *TR News* 226: 16-23.
- Ruth, Laura. 2008. Bio or bust? The economic and ecological cost of biofuels. *EMBO reports* 9 (2): 130-133.
- Sperling, Daniel and Gordon, Deborah. 2008. Two billion cars: Transforming a culture. *Transportation Research News* 259 (8): 11-25.
- U.S. Department of Agriculture and U.S. Department of Energy - Biomass Research and Development Board. 2008. National biofuels action plan. Washington, DC: U. S. Government Printing Office.
- U.S. Department of Energy. Office of Technology Utilization and Office of Energy Efficiency and Renewable Energy. 2000. Executive Order 13149: Greening the government through Federal fleet and transportation efficiency guidance document for Federal agencies. Washington, DC: U. S. Government Printing Office.
- U.S. Department of Energy. Retrieved from <http://www.afdc.energy.gov/afdc/fuels.html> on April 28, 2009.
- U.S. Environmental Protection Agency. Retrieved from <http://www.epa.gov/> on April 28, 2009.

U.S. Department of Transportation. 2006. *Alternative fuels study: A report to Congress on policy options for increasing the use of alternative fuels in transit vehicles*. Washington, DC: U.S. Government Printing Office.

(Research Results Digest 89, March 2009, page 3. Transportation Cooperative Research Program)

APPENDIX A

Table A1

1998 Sources of Energy (gallons in 000's)												
Transit Agency	ID/Org	Mode	VOMS	Diesel Fuel	Gasoline	LPG	LNG	Methanol	Ethanol	CNG	Kilowatt Hrs.	Other
Seattle-Metro Transit	0001-B	Total(LR,MB,TB,VP)	1,746.00	8,944.87	795.00	0.00	0.00	0.00	0.00	0.00	18,141.65	0.00
Portland-Tri-Met	0008-B	Total(DR,LR,MB)	576.00	5,846.09	131.11	0.00	84.54	0.00	0.00	0.00	14,324.86	0.00
Boston-MBTA	1003-B	Total(CR,HR,LR,MB,TB)	1,635.00	20,096.96	0.00	0.00	0.00	0.00	0.00	0.00	234,011.35	0.00
New York City Transit	2008-B	Total(HR,MB)	8,437.00	37,058.47	0.00	0.00	0.00	0.00	0.00	284.02	1,638,870.00	0.00
New Jersey Transit	2080-B	Total(CR,LR,MB)	2,306.00	29,729.56	0.00	0.00	0.00	0.00	0.00	132.50	103,871.56	0.00
Philadelphia-SEPTA	3019-B	Total(CR,DR,HR,LR,MB,TB)	1,893.00	12,865.09	187.56	0.00	0.00	0.00	0.00	0.00	360,425.17	0.00
Pittsburgh-PATransit	3022-B	Total(IP,LR,MB)	822.00	9,427.01	0.00	0.00	0.00	0.00	0.00	2.82	20,100.94	0.00
Washington-Metro	3030-B	Total(HR,MB)	1,750.00	13,402.09	0.00	0.00	0.00	0.00	0.00	0.00	339,145.89	0.00
Baltimore-MTA	3034-C	Total(DR,HR,LR,MB)	786.00	7,564.36	0.00	0.00	0.00	0.00	0.00	0.00	44,261.90	0.00
Atlanta-Marta	4022-A	Total(DR,HR,MB)	821.00	7,637.41	0.00	0.00	0.00	0.00	0.00	2,131.06	98,188.31	0.00
Miami-Dade Transit Agency	4034-B	Total(AG,DR,HR,MB)	637.00	7,863.54	263.37	0.00	0.00	0.00	0.00	0.00	50,685.69	0.00
Cleveland-RTA	5015-B	Total(DR,HR,LR,MB)	729.00	5,076.91	71.63	0.00	0.00	0.00	0.00	1,725.19	43,098.32	0.00
Minneapolis-St Paul-Metro	5027-B	MB	769.00	8,739.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chicago-RTA-cta	5066-B	Total(HR,MB)	2,533.00	22,056.12	0.00	0.00	0.00	0.00	0.00	0.00	333,402.84	76.00
Chicago-RTA-Pace	5113-B	Total(DR,MB,VP)	759.00	2,447.82	367.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Houston-Harris Cnty METRO	6008-B	MB	934.00	12,463.25	0.00	0.00	1,351.04	0.00	0.00	38.39	0.00	0.00
San Antonio-VIA	6011-B	Total(DR,MB)	510.00	5,308.29	6.14	1,221.39	0.00	0.00	0.00	0.00	0.00	0.00
Dallas-DART	6056-B	Total(LR,MB)	473.00	5,595.19	0.00	0.00	0.00	0.00	0.00	13.05	20,724.14	0.00
St. Louis-Bi-State Dev.	7006-A	Total(DR,LR,MB)	604.00	5,905.84	0.00	0.00	0.00	0.00	0.00	179.84	19,476.98	0.00
Denver-RTD	8006-B	Total(DR,LR,MB)	586.00	6,970.02	7.64	0.00	0.00	0.00	0.00	36.64	4,663.35	0.00
San Francisco-AC Transit	9014-B	MB	567.00	6,375.00	316.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00
San Francisco-Muni	9015-B	Total(CC,LR,MB,TB)	761.00	5,946.02	0.00	0.00	0.00	0.00	0.00	0.00	90,125.56	0.00
Los Angeles-Orange County	9036-B	MB	377.00	4,986.92	0.00	150.67	0.00	0.00	0.00	0.00	0.00	0.00
Los Angeles County Metro	9154-B	Total(HR,LR,MB)	1,792.00	18,106.61	0.00	0.00	0.00	436.23	2,544.47	8,711.15	102,685.80	0.00
TOTALS			32,803	270,413.17	2,146.07	1,372.06	1,435.58	436.23	2,544.47	13,254.65	3,536,204.30	76.00

Source: Department of Energy

Table A2

1999 Sources of Energy (gallons in 000's)											
Transit Agency	ID/Org	VOMS	Diesel Fuel	Gasoline	LPG	LNG	Methanol	Ethanol	CNG	Kilowatt Hrs.	Other
King County DOT	0001-B	1,821.00	8,744.64	846.22	0.00	0.00	0.00	0.00	0.00	19,994.16	0.00
Tri-County Metro District	0008-B	606.00	5,892.41	90.44	0.00	86.24	0.00	0.00	0.00	32,900.00	0.00
Mass Bay Transp Auth	1003-B	1,641.00	20,799.99	0.00	0.00	0.00	0.00	0.00	0.00	233,670.78	0.00
New York City Transit	2008-B	8,657.00	39,900.85	0.00	0.00	0.00	0.00	0.00	582.75	1,683,551.25	0.00
New Jersey Transit	2080-B	2,341.00	30,899.17	0.00	0.00	0.00	0.00	0.00	190.42	94,453.36	0.00
SEPTA	3019-B	1,812.00	13,774.97	0.00	0.00	0.00	0.00	0.00	0.00	370,634.18	0.00
Port Authority Allegheny	3022-B	853.00	10,180.52	0.00	0.00	0.00	0.00	0.00	4.93	21,007.83	0.00
Washington-Metro	3030-B	1,757.00	13,434.37	0.00	0.00	0.00	0.00	0.00	0.00	360,338.09	0.00
MTA-Maryland DOT	3034-C	801.00	7,698.84	0.00	0.00	0.00	0.00	0.00	0.00	49,366.80	0.00
Metro Atlanta RTA	4022-A	839.00	7,898.04	0.00	0.00	0.00	0.00	0.00	2,415.53	97,527.52	0.00
Miami-Dade Transit Agency	4034-B	601.00	8,145.06	40.29	0.00	0.00	0.00	0.00	0.00	52,652.94	0.00
Greater Cleveland RTA	5015-B	758.00	4,707.94	38.87	0.00	0.00	0.00	0.00	2,098.96	45,845.98	0.00
Metro Transit	5027-A	789.00	9,300.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chicago Transit Authority	5066-B	2,473.00	20,417.44	0.00	0.00	0.00	0.00	15.45	0.00	341,989.55	10.72
Pace, Suburban Bus Div	5113-B	867.00	2,916.73	530.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MetroTransAuth HarrisCnty	6008-B	949.00	13,541.91	0.00	0.00	822.75	0.00	0.00	128.32	0.00	0.00
VIA Metropolitan Transit	6011-B	510.00	5,852.55	6.26	1,255.03	0.00	0.00	0.00	0.00	0.00	0.00
Dallas Area RTA	6056-B	477.00	5,941.21	0.00	0.00	0.00	0.00	0.00	13.05	19,443.13	0.00
Bi-State Development	7006-A	590.00	5,774.66	0.00	0.00	0.00	0.00	0.00	214.90	19,501.33	0.00
Regional Transp District	8006-B	670.00	7,015.03	13.30	0.00	0.00	0.00	0.00	36.93	4,835.83	0.00
Alameda-Contra Costa TD	9014-B	579.00	6,077.00	291.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Municipal Railway	9015-B	774.00	6,116.53	0.00	0.00	0.00	0.00	0.00	0.00	83,316.48	0.00
Orange County Transp Auth	9036-B	377.00	5,098.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Los Angeles County Metro	9154-B	1,864.00	17,589.33	0.00	0.00	0.00	995.08	405.90	8,545.63	107,420.45	0.00
TOTAL		33,406	277,717	1,857	1,255	909	995	421	14,231	3,638,450	11

Source: Department of Energy

Table A3

2000 Sources of Energy (gallons in 000's)											
Transit Agency	ID/Org	VOMS	Diesel Fuel	Gasoline	LPG	LNG	Methanol	Ethanol	CNG	Kilowatt Hrs.	Other
King County DOT	0001-B	1,786	9,535.7	829.8	0.0	0.0	0.0	0.0	0.0	18,471.4	0.0
Tri-County Metro District	0008-B	626	6,095.1	37.3	0.0	117.7	0.0	0.0	0.0	35,047.0	0.0
Mass Bay Transp Auth	1003-B	1,645	19,033.9	0.0	0.0	0.0	0.0	0.0	7.8	238,711.2	0.0
New York City Transit	2008-B	8,731	42,147.9	0.0	0.0	0.0	0.0	0.0	2,182.3	1,755,215.0	0.0
New Jersey Transit	2080-B	2,388	30,993.0	0.0	0.0	0.0	0.0	0.0	904.3	104,319.0	0.0
SEPTA	3019-B	1,878	14,377.9	0.0	0.0	0.0	0.0	0.0	0.0	379,143.0	0.0
Port Authority Allegheny	3022-B	897	9,770.8	0.0	0.0	0.0	0.0	0.0	64.4	21,501.1	0.0
Washington-Metro	3030-B	1,811	13,663.4	0.0	0.0	0.0	0.0	0.0	0.0	380,568.1	0.0
MTA-Maryland DOT	3034-C	770	7,611.4	0.0	0.0	0.0	0.0	0.0	0.0	50,786.8	0.0
Metro Atlanta RTA	4022-A	829	8,250.7	0.0	0.0	0.0	0.0	0.0	2,442.5	96,268.6	0.0
Miami-Dade Transit Agency	4034-B	625	8,460.7	21.5	0.0	0.0	0.0	0.0	0.0	52,250.1	0.0
Greater Cleveland RTA	5015-B	753	5,223.0	1.0	0.0	0.0	0.0	0.0	1,940.3	45,765.0	0.0
Metro Transit	5027-A	785	9,425.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chicago Transit Authority	5066-B	2,491	22,636.5	0.0	0.0	0.0	0.0	11.7	0.0	358,527.7	4.2
Pace, Suburban Bus Div	5113-B	824	5,140.5	535.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MetroTransAuth HarrisCnty	6008-B	1,017	13,843.3	0.0	0.0	207.9	0.0	0.0	140.4	0.0	0.0
VIA Metropolitan Transit	6011-B	509	5,931.6	0.4	1,195.7	0.0	0.0	0.0	0.0	0.0	0.0
Dallas Area RTA	6056-B	489	4,794.0	0.0	0.0	4,346.3	0.0	0.0	0.0	30,366.4	0.0
Bi-State Development	7006-A	588	5,906.8	0.0	0.0	0.0	0.0	0.0	264.5	19,170.0	0.0
Regional Transp District	8006-B	683	7,095.0	13.7	0.0	0.0	0.0	0.0	41.8	8,665.8	0.0
Alameda-Contra Costa TD	9014-B	606	6,614.6	316.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Municipal Railway	9015-B	785	6,036.2	0.0	0.0	0.0	0.0	0.0	0.0	99,828.8	0.0
Orange County Transp Auth	9036-B	380	5,231.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Los Angeles County Metro	9154-B	1,997	19,711.2	0.0	0.0	0.0	31.7	23.8	12,154.9	153,878.5	0.0
TOTAL		33,893	287,530	1,755	1,196	4,672	32	35	20,143	3,848,484	4

Source: Department of Energy

Table A4

2001 Sources of Energy (gallons in 000's)											
Transit Agency	ID/Org	VOMS	Diesel Fuel	Gasoline	LPG	LNG	Methanol	Ethanol	CNG	Kilowatt Hrs.	Other
King County DOT	0001-B	1,813	9,899	847.3	0.0	0.0	0.0	0.0	0.0	19,382.3	0.0
Tri-County Metro District	0008-B	626	6,229	0.0	0.0	23.8	0.0	0.0	0.0	34,136.0	0.0
Mass Bay Transp Auth	1003-B	1,654	19,332	0.0	0.0	0.0	0.0	0.0	10.4	245,732.6	0.0
New York City Transit	2008-B	8,872	42,172	0.0	0.0	0.0	0.0	0.0	3,314.0	1,769,566.0	0.0
New Jersey Transit	2080-B	2,410	31,272	0.0	0.0	0.0	0.0	0.0	1,292.7	101,029.7	0.0
SEPTA	3019-B	1,854	15,290	0.0	0.0	0.0	0.0	0.0	0.0	390,749.2	0.0
Port Authority Allegheny	3022-B	897	11,140	0.0	0.0	0.0	0.0	0.0	3.0	21,500.7	0.0
Washington-Metro	3030-B	1,840	14,117	0.0	0.0	0.0	0.0	0.0	0.0	401,161.1	0.0
MTA-Maryland DOT	3034-C	760	7,704	0.0	0.0	0.0	0.0	0.0	0.0	55,195.2	0.0
Metro Atlanta RTA	4022-A	866	7,472	0.0	0.0	0.0	0.0	0.0	3,449.0	105,351.8	0.0
Miami-Dade Transit Agency	4034-B	649	9,001	44.5	0.0	0.0	0.0	0.0	0.0	64,228.3	0.0
Greater Cleveland RTA	5015-B	744	4,670	0.0	0.0	0.0	0.0	0.0	2,114.8	41,847.8	0.0
Metro Transit	5027-A	792	9,146	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chicago Transit Authority	5066-B	2,615	23,169	0.0	0.0	0.0	0.0	0.0	0.0	352,479.6	0.0
Pace, Suburban Bus Div	5113-B	867	5,071	553.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MetroTransAuth HarrisCnty	6008-B	1,050	13,370	0.0	0.0	51.4	0.0	0.0	30.4	0.0	0.0
VIA Metropolitan Transit	6011-B	484	5,316	1.5	1,945.7	0.0	0.0	0.0	0.0	0.0	0.0
Dallas Area RTA	6056-B	493	4,381	0.0	0.0	4,278.8	0.0	0.0	0.0	33,881.0	0.0
Bi-State Development	7006-A	569	6,093	0.0	0.0	0.0	0.0	0.0	228.6	19,918.2	0.0
Regional Transp District	8006-B	643	6,583	16.1	0.0	0.0	0.0	0.0	87.4	11,404.8	0.0
Alameda-Contra Costa TD	9014-B	648	6,975	331.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Municipal Railway	9015-B	814	6,691	0.0	0.0	0.0	0.0	0.0	0.0	96,667.3	0.0
Orange County Transp Auth	9036-B	411	4,980	0.0	0.0	841.1	0.0	0.0	0.0	0.0	0.0
Los Angeles County Metro	9154-B	2,012	14,009	0.0	0.0	0.0	0.0	0.0	15,400.6	146,857.1	0.0
TOTAL		34,383	284,083	1,794	1,946	5,195	0	0	25,931	3,911,089	0

Source: Department of Energy

Table A5

2002 Sources of Energy (gallons in 000's)													
Transit Agency	ID/Org	VOMS	Diesel Fuel	Gasoline	LPG	LNG	Methanol	Ethanol	CNG	Bio-Diesel	Kilowatt Hrs.	Electric Battery	Other
King County Depart of Transp - Metro Transit Division (King County Metro)	0001	2,147	10,158.2	818.2	0.0	0.0	0.0	0.0	0.0	0.0	18,683.2	0.0	0.0
Tri-County Metro Transp Dist of Oregon (Tri-Met)	0008	626	6,176.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35,591.6	0.0	0.0
Massachusetts Bay Transp Auth (MBTA)	1003	1,650	124,771.6	0.0	0.0	0.0	0.0	0.0	11.3	0.0	241,330.4	0.0	0.0
MTA New York City Transit (NYCT)	2008	8,946	43,447.1	0.0	0.0	0.0	0.0	0.0	3,247.0	0.0	1,785,020.0	0.6	0.0
New Jersey Transit Corporation (NJTransit)	2080	2,448	31,272.0	0.0	0.0	0.0	0.0	0.0	1,292.7	0.0	101,029.7	0.0	0.0
Southeastern Pennsylvania Transp Auth (SEPTA)	3019	1,818	15,412.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	381,600.5	0.0	0.0
Port Authority of Allegheny County	3022	887	10,731.7	0.0	0.0	0.0	0.0	0.0	42.7	0.0	20,834.6	0.0	0.0
Washington Metro Area Trans Auth (WMATA)	3030	1,911	14,220.2	0.0	0.0	0.0	0.0	0.0	164.2	0.0	393,671.1	0.0	0.0
Mass Transit Administration, Maryland Dept of Transp (MTA)	3034	767	7,759.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51,075.1	0.0	0.0
Metro Atlanta Rapid Trans Auth (MARTA)	4022	853	5,522.6	0.0	0.0	0.0	0.0	0.0	5,974.4	0.0	185,731.8	0.0	5,974.4
Miami-Dade Transit (MDT)	4034	672	9,175.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	70,506.3	0.0	0.0
The Greater Cleveland Regional Trans Auth (GCRTA)	5015	658	4,214.0	0.0	0.0	0.0	0.0	0.0	1,470.5	0.0	39,898.1	0.0	0.0
Metro Transit	5027	841	8,898.2	0.0	0.0	0.0	0.0	0.0	0.0	40.1	0.0	0.0	0.0
Chicago Transit Authority (CTA)	5066	2,683	22,696.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	366,053.4	0.0	0.0
Pace - Suburban Bus Division (PACE)	5113	934	5,283.0	600.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Metro Trans Auth of Harris County, TX (Metro)	6008	1,053	13,019.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VIA Metropolitan Transit (VIA)	6011	484	4,856.5	0.0	2,546.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dallas Area Rapid Transit (DART)	6056	508	4,517.8	0.0	0.0	4,158.5	0.0	0.0	0.0	0.0	44,359.2	0.0	0.0
Bi-State Development Agency (BSDA)	7006	480	5,565.9	0.0	0.0	0.0	0.0	0.0	176.5	0.0	28,679.3	0.0	0.0
Denver Regional Transportation District (RTD)	8006	636	6,607.8	0.0	0.0	0.0	0.0	0.0	170.2	0.0	37,458.0	0.0	0.0
Alameda-Contra Costa Transit District (AC Transit)	9014	654	7,236.7	332.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
San Francisco Municipal Railway (MUNI)	9015	833	6,154.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	96,212.8	0.0	0.0
Orange County Transp Auth (OCTA)	9036	441	4,615.0	0.0	0.0	3,909.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LA County Metro Transp Auth (LACMTA)	9154	2,064	8,711.5	0.0	0.0	0.0	0.0	0.0	24,412.9	0.0	139,327.7	0.0	0.0
TOTAL		34,994	381,023	1,754	2,546	8,068	0	0	36,962	40	4,037,063	1	5,974

Source: Department of Energy

Table A6

2003 Sources of Energy (gallons in 000's)													
Transit Agency	ID/Org	VOMS	Diesel Fuel	Gas	LPG	LNG	Methanol	Ethanol	CNG	Bio-Diesel	Kilowatt Hrs.	Electric Battery	Other
King County Depart of Transp - Metro Transit Division (King County Metro)	0001	2,247	10,113.7	788.4	0.0	0.0	0.0	0.0	0.0	1.0	18,243.7	0.0	0.0
Tri-County Metro Transp District of Oregon (Tri-Met)	0008	631	6,226.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33,461.0	0.0	0.0
Massachusetts Bay Transp Auth (MBTA)	1003	1,660	20,242.9	0.0	0.0	0.0	0.0	0.0	126.0	0.0	247,172.9	0.0	0.0
MTA New York City Transit (NYCT)	2008	8,995	44,129.7	0.0	0.0	0.0	0.0	0.0	3,695.2	0.0	1,744,000.0	0.8	0.0
New Jersey Transit Corporation (NJTransit)	2080	2,493	31,164.3	0.0	0.0	0.0	0.0	0.0	798.1	0.0	133,195.3	0.0	0.0
Southeastern Pennsylvania Transp Auth (SEPTA)	3019	1,849	15,835.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	393,999.4	0.0	0.0
Port Authority of Allegheny County	3022	877	10,046.7	0.0	0.0	0.0	0.0	0.0	43.1	0.0	21,400.7	0.0	0.0
Maryland Transit Administration (MTA)	3034	758	7,950.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	56,666.7	0.0	0.0
Metropolitan Atlanta Rapid Transit Authority (MARTA)	4022	825	4,288.8	0.0	0.0	0.0	0.0	0.0	6,478.1	0.0	101,974.6	0.0	0.0
Miami-Dade Transit (MDT)	4034	620	10,141.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	74,228.5	0.0	0.0
The Greater Cleveland Regional Transit Authority (GCRTA)	5015	662	4,332.6	0.0	0.0	0.0	0.0	0.0	1,834.5	0.0	40,358.4	0.0	0.0
Metro Transit	5027	774	8,472.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chicago Transit Authority (CTA)	5066	2,723	23,216.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	388,608.7	0.0	0.0
Pace - Suburban Bus Division (PACE)	5113	940	5,341.5	624.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Metropolitan Transit Authority of Harris County, TX (Metro)	6008	1,017	12,569.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VIA Metropolitan Transit (VIA)	6011	490	4,557.9	0.0	2,490.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	112.2
Dallas Area Rapid Transit (DART)	6056	594	4,015.8	156.0	0.0	3,988.1	0.0	0.0	0.0	0.0	51,116.0	0.0	0.0
Bi-State Development Agency (METRO)	7006	480	5,392.5	0.0	0.0	0.0	0.0	0.0	309.8	0.0	30,471.3	0.0	0.0
Denver Regional Transportation District (RTD)	8006	651	6,395.0	0.0	0.0	0.0	0.0	0.0	163.6	0.0	17,892.6	0.0	0.0
Alameda-Contra Costa Trans Dist (AC Transit)	9014	654	7,020.0	266.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
San Francisco Municipal Railway (MUNI)	9015	833	5,901.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	94,409.9	0.0	0.0
Orange County Trans Authority (OCTA)	9036	452	3,903.7	0.0	0.0	5,844.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LA County Metro Trans Authority (LACMTA)	9154	2,164	4,745.1	0.0	0.0	0.0	0.0	0.0	32,241.7	0.0	151,633.6	0.0	0.0
TOTAL		33,389	256,003	1,835	2,491	9,833	0	0	45,690	1	3,598,833	1	112

Source: Department of Energy

Table A7

2004 Sources of Energy (gallons in 000's)														
Transit Agency	ID/Org	VOMS	Diesel Fuel	Gas	LPG	LNG	Methanol	Ethanol	CNG	Bio-Diesel	Kilowatt Hrs.	Electric Battery	Other	
King County Depart of Trans - Metro Transit Division (King County Metro)	0001	2,151	10,001.0	788.4	0.0	0.0	0.0	0.0	0.0	24.9	16,928.2	0.0	0.0	
Tri-County Metro Trans District of Oregon (TriMet)	0008	615	7,150.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	38,819.6	0.0	0.0	
Massachusetts Bay Trans Auth (MBTA)	1003	1,661	17,582.5	398.8	0.0	0.0	0.0	0.0	1,007.2	0.0	251,246.8	525.6	0.0	
MTA New York City Transit (NYCT)	2008	9,040	43,283.1	0.0	0.0	0.0	0.0	0.0	5,981.6	0.0	1,763,000.0	4.6	0.0	
New Jersey Transit Corporation (NJ TRANSIT)	2080	2,440	32,473.7	0.0	0.0	0.0	0.0	0.0	748.5	0.0	138,107.5	0.0	0.0	
Southeastern Pennsylvania Trans Auth (SEPTA)	3019	1,855	16,167.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	395,844.8	0.0	0.0	
Port Authority of Allegheny County (Port Authority)	3022	1,054	9,953.3	0.0	0.0	0.0	0.0	0.0	41.3	0.0	21,487.0	0.0	0.0	
Washington Metro Area Trans Auth (WMATA)	3030	1,986	13,267.2	0.0	0.0	0.0	0.0	0.0	2,251.4	0.0	424,092.3	0.0	0.0	
Maryland Transit Administration (MTA)	3034	753	8,515.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53,419.2	0.0	0.0	
Metro Atlanta Rapid Trans Auth (MARTA)	4022	867	4,017.7	0.0	0.0	0.0	0.0	0.0	6,494.5	0.0	95,840.5	0.0	0.0	
Miami-Dade Transit (MDT)	4034	783	11,114.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	90,567.3	0.0	0.0	
Metro Transit	5027	744	7,183.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7,805.2	0.0	0.0	
Chicago Transit Authority (CTA)	5066	2,718	24,428.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	386,780.1	0.0	0.0	
Pace - Suburban Bus Division (PACE)	5113	962	5,353.4	662.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Metro Trans Auth of Harris County, TX (Metro)	6008	1,044	12,852.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5,092.2	0.0	0.0	
VIA Metropolitan Transit (VIA)	6011	439	3,613.4	1.4	2,274.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	924.1	
Dallas Area Rapid Transit (DART)	6056	733	6,299.0	133.9	0.0	4,580.5	0.0	0.0	0.0	0.0	55,401.0	0.0	0.0	
Bi-State Development Agency (METRO)	7006	476	5,475.9	0.0	0.0	0.0	0.0	0.0	332.4	0.0	28,096.3	0.0	0.0	
Denver Regional Transportation District (RTD)	8006	624	6,322.2	0.0	0.0	0.0	0.0	0.0	161.9	98.5	17,151.1	0.0	0.0	
Alameda-Contra Costa Transit District (AC Transit)	9014	624	6,545.0	132.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
San Francisco Municipal Railway (MUNI)	9015	815	5,975.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	94,766.9	0.0	0.0	
Orange County Transportation Authority (OCTA)	9036	466	3,916.2	0.0	0.0	6,230.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
LA County Metro Trans Auth (LACMTA)	9154	2,188	4,621.8	0.0	0.0	0.0	0.0	0.0	29,362.0	0.0	144,349.9	0.0	0.0	
TOTAL		35,038	266,112	2,118	2,275	10,811	0	0	46,381	123	4,028,796	530	924	

Source: Department of Energy

Table A8

2005 Sources of Energy (gallons in 000's)													
Transit Agency	ID/Org	VOMS	Diesel Fuel	Gasoline	LPG	LNG	Methanol	Ethanol	CNG	Bio-Diesel	Kilowatt Hrs.	Electric Battery	Other
King County Depart of Trans - Metro Transit Division (King County Metro)	0001	2,084	10,602.3	647.4	0.0	0.0	0.0	0.0	0.0	138.6	17,232.6	0.0	0.0
Tri-County Metro Trans District of Oregon (TriMet)	0008	623	5,941.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	38,018.6	0.0	0.0
Massachusetts Bay Trans Auth (MBTA)	1003	1,677	16,794.9	0.0	0.0	0.0	0.0	0.0	4,137.5	0.0	251,246.8	0.0	0.0
MTA New York City Transit (NYCT)	2008	9,101	0.0	0.0	0.0	0.0	0.0	0.0	7,156.3	41,116.9	1,777,000.0	6.8	0.0
New Jersey Transit Corp (NJ TRANSIT)	2080	2,608	33,569.4	0.0	0.0	0.0	0.0	0.0	736.7	0.0	140,066.0	0.0	0.0
Southeastern Pennsylvania Trans Auth (SEPTA)	3019	1,868	15,899.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	393,295.4	0.0	0.0
Port Authority of Allegheny County (Port Authority)	3022	1,054	9,593.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22,046.1	0.0	0.0
Washington Metro Area Trans Auth (WMATA)	3030	1,994	12,940.4	0.0	0.0	0.0	0.0	0.0	2,136.1	0.0	443,841.1	0.0	0.0
Maryland Transit Administration (MTA)	3034	730	8,140.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52,207.7	0.0	0.0
Metro Atlanta Rapid Trans Auth (MARTA)	4022	744	2,709.9	0.0	0.0	0.0	0.0	0.0	6,360.2	0.0	96,992.7	0.0	0.0
Miami-Dade Transit (MDT)	4034	873	11,534.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	92,619.1	0.0	0.0
The Greater Cleveland Regional Trans Auth (GCRTA)	5015	625	5,065.0	0.0	0.0	0.0	0.0	0.0	1,390.9	0.0	39,764.5	0.0	0.0
Metro Transit	5027	732	6,078.3	0.0	0.0	0.0	0.0	0.0	0.0	1,856.6	11,854.2	0.0	0.0
Chicago Transit Authority (CTA)	5066	2,724	24,515.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	408,603.2	0.0	0.0
Pace - Suburban Bus Division (PACE)	5113	1,062	0.0	707.6	0.0	0.0	0.0	0.0	0.0	5,335.7	0.0	0.0	0.0
Metro Trans Auth of Harris County, TX (Metro)	6008	984	11,163.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6,989.2	0.0	0.0
VIA Metropolitan Transit (VIA)	6011	437	4,734.0	1.8	2,386.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dallas Area Rapid Transit (DART)	6056	754	6,330.7	142.4	0.0	5,579.9	0.0	0.0	0.0	0.0	57,433.3	0.0	0.0
Bi-State Development Agency (METRO)	7006	471	5,340.2	0.0	0.0	0.0	0.0	0.0	294.3	0.0	29,792.8	0.0	0.0
Denver Regional Trans District (RTD)	8006	573	5,823.7	0.0	0.0	0.0	0.0	0.0	159.8	58.1	20,083.0	0.0	0.0
Alameda-Contra Costa Trans Dist (AC Transit)	9014	516	6,218.3	138.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
San Francisco Municipal Railway (MUNI)	9015	808	5,749.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	90,255.5	0.0	0.0
Orange County Trans Auth (OCTA)	9036	473	3,752.0	0.0	0.0	6,421.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LA County Metro Trans Auth (LACMTA)	9154	2,272	4,779.6	0.0	0.0	0.0	0.0	0.0	33,559.6	0.0	176,013.3	0.0	0.0
TOTAL		35,787	217,276	1,638	2,386	12,002	0	0	55,932	48,506	4,165,355	7	0

Table A9

2006 Sources of Energy (gallons in 000's)													
Transit Agency	ID/Org	VOMS	Diesel Fuel	Gas	LPG	LNG	Methanol	Ethanol	CNG	Bio-Diesel	Kilowatt Hrs.	Electric Battery	Other
MTA New York City Transit (NYCT)	2008	9,119	40,543.8	0.0	0.0	0.0	0.0	0.0	6,520.1	0.0	1,732,771.8	10.3	0.0
Chicago Transit Authority (CTA)	5066	2,799	24,722.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	397,679.8	0.0	0.0
New Jersey Transit Corporation (NJ TRANSIT)	2080	2,660	34,999.2	0.0	0.0	0.0	0.0	0.0	854.1	0.0	154,783.1	0.0	0.0
LA County Metro Transp Auth (LACMTA)	9154	2,258	3,909.8	0.0	0.0	0.0	0.0	0.0	35,909.0	0.0	167,294.9	0.0	0.0
King County Depart of Transp - Metro Transit Division (King County Metro)	0001	2,236	10,463.3	711.1	0.0	0.0	0.0	0.0	0.0	728.7	15,791.5	0.0	0.0
Washington Metro Area Trans Auth (WMATA)	3030	2,007	12,536.2	0.0	0.0	0.0	0.0	0.0	3,122.3	0.0	470,583.4	0.0	0.0
Southeastern Pennsylvania Transp Auth (SEPTA)	3019	1,862	15,775.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	368,285.9	0.0	0.0
Massachusetts Bay Transportation Authority (MBTA)	1003	1,631	16,830.0	0.0	0.0	0.0	0.0	0.0	4,252.7	0.0	251,712.7	0.0	0.0
Pace - Suburban Bus Division (PACE)	5113	1,155	5,194.9	785.4	0.0	0.0	0.0	0.0	0.0	277.1	0.0	0.0	0.0
Miami-Dade Transit (MDT)	4034	945	12,901.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91,969.6	0.0	0.0
Metro Trans Auth of Harris County, TX (Metro)	6008	927	10,628.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7,583.2	0.0	0.0
Port Authority of Allegheny County (Port Authority)	3022	867	8,901.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29,685.6	0.0	0.0
San Francisco Municipal Railway (MUNI)	9015	773	5,739.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	86,016.2	0.0	0.0
Metropolitan Atlanta Rapid Transit Authority (MARTA)	4022	734	3,033.1	0.0	0.0	0.0	0.0	0.0	6,202.8	0.0	93,706.0	0.0	0.0
Dallas Area Rapid Transit (DART)	6056	728	6,319.4	157.8	0.0	5,542.7	0.0	0.0	0.0	0.0	59,085.4	0.0	0.0
Maryland Transit Administration (MTA)	3034	727	7,628.7	239.7	0.0	0.0	0.0	0.0	0.0	0.0	53,482.1	0.0	0.0
Metro Transit	5027	726	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7,556.8	12,707.1	0.0	0.0
The Greater Cleveland Regional Transit Authority (GCRTA)	5015	621	5,549.7	0.0	0.0	0.0	0.0	0.0	1,064.2	0.0	40,012.1	0.0	0.0
Tri-County Metropolitan Transportation District of Oregon (TriMet)	0008	607	5,753.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43,180.2	0.0	0.0
Denver Regional Transportation District (RTD)	8006	606	6,259.0	0.0	0.0	0.0	0.0	0.0	155.3	36.1	25,167.4	0.0	0.0
Alameda-Contra Costa Transit District (AC Transit)	9014	528	6,171.1	162.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5
Bi-State Development Agency (METRO)	7006	480	5,297.3	0.0	0.0	0.0	0.0	0.0	286.7	0.0	30,267.0	0.0	0.0
Orange County Transportation Authority (OCTA)	9036	479	3,591.8	12.3	0.0	6,487.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VIA Metropolitan Transit (VIA)	6011	453	5,124.2	207.7	1,865.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL		35,928	257,874	2,276	1,866	12,030	0	0	58,367	8,599	4,131,765	10	3

Source: Department of Energy

APPENDIX B

Table B1

1998 Sources of Energy (gallons in 000's)											
Transit Agency	ID/Org	VOMS	Diesel Fuel	Gasoline	LPG	LNG	Methanol	Ethanol	CNG	Kilowatt Hrs.	Other
Abilene Transit System	6040-A	21.00	96.26	1.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Amarillo City Transit	6001-A	16.00	149.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Austin-CAPITAL METRO	6048-B	252.00	2,563.58	424.81	0.00	0.00	0.00	0.00	427.81	0.00	0.00
Austin-VPSI	6083-D	130.00	0.00	99.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beaumont Transit System	6016-A	17.00	199.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Brownsville-BUS	6014-A	20.00	200.21	8.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bryan-Brazos Transit	6059-A	12.00	0.76	15.11	0.00	0.00	0.00	0.00	166.87	0.00	0.00
City of San Angelo	6037-A	10.00	53.20	2.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Corpus Christi-The B	6051-B	49.00	812.12	0.00	392.58	0.00	0.00	0.00	0.00	0.00	0.00
Dallas - Handitran	6041-B	13.00	53.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dallas-ATE Management Co.	6057-D	341.00	3,710.00	832.71	0.00	0.00	0.00	0.00	103.09	0.00	0.00
Dallas-City of Mesquite	6070-A	7.00	0.00	16.89	22.38	0.00	0.00	0.00	0.00	0.00	0.00
Dallas-DART	6056-B	473.00	5,595.19	0.00	0.00	0.00	0.00	0.00	13.05	20,724.14	0.00
Dallas-Grand Prairie	6068-A	8.00	9.60	2.42	4.80	0.00	0.00	0.00	0.00	0.00	0.00
Dallas-VPSI	6084-D	142.00	0.00	193.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00
El Paso-Sun Metro	6006-B	159.00	926.74	0.00	0.00	1,745.56	0.00	0.00	653.82	0.00	0.00
Fort Worth-The T	6007-B	144.00	646.88	291.52	0.00	0.00	0.00	0.00	845.11	0.00	0.00
Galveston-Gulf Coast Cntr	6082-A	29.00	53.87	62.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Galveston-Island Transit	6015-A	19.00	204.70	25.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Houston-Harris Cnty METRO	6008-B	934.00	12,463.25	0.00	0.00	1,351.04	0.00	0.00	38.39	0.00	0.00
Houston-Ryder/ATE	6087-D	217.00	2,360.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Laredo Municipal Transit	6009-A	46.00	358.21	77.04	0.00	0.00	0.00	0.00	282.72	0.00	0.00
Lubbock-City Transit Mgmt	6010-A	56.00	437.24	9.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Port Arthur Transit	6013-A	9.00	63.64	17.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00
San Antonio-VIA	6011-B	510.00	5,308.29	6.14	1,221.39	0.00	0.00	0.00	0.00	0.00	0.00
Waco Transit System, Inc.	6012-A	18.00	166.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		3,652.00	36,432.18	2,086.50	1,641.15	3,096.59	0.00	0.00	2,530.86	20,724.14	0.00

Source: Department of Energy

Table B2

1999 Sources of Energy (gallons in 000's)											
Transit Agency	ID/Org	VOMS	Diesel Fuel	Gasoline	LPG	LNG	Methanol	Ethanol	CNG	Kilowatt Hrs.	Other
Abilene Transit System	6040-A	20.00	102.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Amarillo City Transit	6001-A	16.00	128.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BVCAA-Brazos Transit Sys	6059-A	12.00	2.12	14.58	0.00	0.00	0.00	0.00	208.59	0.00	0.00
Beaumont Transit System	6016-A	17.00	230.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Brownsville Urban System	6014-A	21.00	242.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Capital MetIn Transp Auth	6048-B	274.00	2,889.39	406.85	0.00	0.00	0.00	0.00	305.16	0.00	0.00
City Transit Mgmt Comp	6010-A	65.00	446.65	2.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00
City of Mesquite	6070-A	10.00	0.00	30.04	11.12	0.00	0.00	0.00	0.00	0.00	0.00
City of San Angelo	6037-A	10.00	63.76	3.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Corpus Christi Regionl TA	6051-B	50.00	773.65	0.00	391.50	0.00	0.00	0.00	0.00	0.00	0.00
Dallas Area RTA	6056-B	477.00	5,941.21	0.00	0.00	0.00	0.00	0.00	13.05	19,443.13	0.00
Dallas-VPSI	6084-D	124.00	0.00	174.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00
El Paso Mass Transit	6006-B	160.00	1,189.76	50.32	0.00	1,943.48	0.00	0.00	1,051.62	0.00	0.00
First Transit, Inc	6057-D	344.00	3,843.38	690.97	0.00	0.00	0.00	0.00	175.57	0.00	0.00
Fort Worth Transp Auth	6007-B	148.00	620.97	267.27	0.00	0.00	0.00	0.00	1,040.42	0.00	0.00
Grand Prairie	6068-A	7.00	7.54	0.97	1.48	0.00	0.00	0.00	0.00	0.00	0.00
Gulf Coast Center	6082-A	29.00	83.68	64.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Handitran Special Transit	6041-B	13.00	53.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Houston-VPSI	6085-D	161.00	0.00	211.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Laredo Municipal Transit	6009-A	48.00	306.86	71.20	0.00	0.00	0.00	0.00	362.14	0.00	0.00
MetroTransAuth HarrisCnty	6008-B	949.00	13,541.91	0.00	0.00	822.75	0.00	0.00	128.32	0.00	0.00
Port Arthur Transit	6013-A	9.00	64.18	14.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ryder/ATE	6087-D	218.00	2,588.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VIA Metropolitan Transit	6011-B	510.00	5,852.55	6.26	1,255.03	0.00	0.00	0.00	0.00	0.00	0.00
Waco Transit System	6012-A	19.00	176.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Totals		3,711.00	39,150.07	2,009.32	1,659.13	2,766.23	0.00	0.00	3,284.85	19,443.13	0.00

Source: Department of Energy

Table B3

2000 Sources of Energy (gallons in 000's)											
Transit Agency	ID/Org	VOMS	Diesel Fuel	Gasoline	LPG	LNG	Methanol	Ethanol	CNG	Kilowatt Hrs.	Other
Abilene Transit System	6040-A	21	131.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amarillo City Transit	6001-A	16	135.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BVCAA-Brazos Transit Sys	6059-A	14	3.5	13.6	0.0	0.0	0.0	0.0	172.8	0.0	0.0
Beaumont Transit System	6016-A	17	245.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Capital Metro Transp Auth	6048-B	401	3,108.1	244.0	0.0	0.0	0.0	0.0	368.1	0.0	0.0
City Transit Mgmt Comp	6010-A	62	463.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
City of Mesquite	6070-A	10	0.0	30.9	10.0	0.0	0.0	0.0	0.0	0.0	0.0
City of San Angelo	6037-A	10	68.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Corpus Christi Regionl TA	6051-B	53	766.6	4.3	436.7	0.0	0.0	0.0	0.0	0.0	0.0
Dallas Area RTA	6056-B	489	4,794.0	0.0	0.0	4,346.3	0.0	0.0	0.0	30,366.4	0.0
Dallas-VPSI	6084-D	122	0.0	170.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
El Paso Mass Transit	6006-B	163	1,179.4	40.8	0.0	1,880.3	0.0	0.0	1,167.2	0.0	0.0
First Transit, Inc	6057-D	362	4,079.5	666.3	0.0	0.0	0.0	0.0	169.5	0.0	0.0
Fort Worth Transp Auth	6007-B	168	564.5	173.2	0.0	0.0	0.0	0.0	1,315.0	0.0	0.0
Grand Prairie	6068-A	7	7.1	2.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Gulf Coast Center	6082-A	30	113.8	30.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Handitran Special Transit	6041-B	13	54.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Houston-VPSI	6085-D	149	0.0	202.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Laredo Municipal Transit	6009-A	48	314.4	72.5	0.0	0.0	0.0	0.0	330.0	0.0	0.0
Metro Trans Auth Harris Cnty	6008-B	1,017	13,843.3	0.0	0.0	207.9	0.0	0.0	140.4	0.0	0.0
Port Arthur Transit	6013-A	9	63.0	16.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ryder/ATE	6087-D	219	2,738.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VIA Metropolitan Transit	6011-B	509	5,931.6	0.4	1,195.7	0.0	0.0	0.0	0.0	0.0	0.0
Waco Transit System	6012-A	18	181.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		3,927	38,789	1,670	1,643	6,435	0	0	3,663	30,366	0

Source: Department of Energy

Table B4

2001 Sources of Energy (gallons in 000's)											
Transit Agency	ID/Org	VOMS	Diesel Fuel	Gasoline	LPG	LNG	Methanol	Ethanol	CNG	Kilowatt Hrs.	Other
ATC, Dallas	6092-D	156	618.3	260.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Abilene Transit System	6040-A	32	133.5	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amarillo City Transit	6001-A	16	139.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BVCAA-Brazos Transit Sys	6059-A	18	140.5	38.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Beaumont Transit System	6016-A	18	235.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brownsville Urban System	6014-A	21	263.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Capital Metro Transp Auth	6048-B	431	3,252.8	232.4	0.0	0.0	0.0	0.0	337.3	0.0	0.0
City Transit Mgmt Comp	6010-A	65	500.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
City of Mesquite	6070-A	10	0.0	26.5	1.4	0.0	0.0	0.0	0.0	0.0	0.0
City of San Angelo	6037-A	11	70.9	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Corpus Christi Regionl TA	6051-B	54	631.0	6.5	71.8	0.0	0.0	0.0	0.0	0.0	0.0
Dallas Area RTA	6056-B	493	4,381.4	0.0	0.0	4,278.8	0.0	0.0	0.0	33,881.0	0.0
Dallas-VPSI	6084-D	114	0.0	160.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
El Paso Mass Transit	6006-B	157	1,184.7	47.9	0.0	1,793.7	0.0	0.0	1,136.2	0.0	0.0
First Transit, Inc	6057-D	416	4,178.7	163.5	0.0	0.0	0.0	0.0	181.1	0.0	0.0
Fort Worth Transp Auth	6007-B	215	532.1	328.3	0.0	0.0	0.0	0.0	966.0	0.0	0.0
Grand Prairie	6068-A	7	7.6	3.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0
Gulf Coast Center	6082-A	30	158.1	45.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Handitran Special Transit	6041-B	13	52.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hill County Transit	6091-A	27	97.1	18.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Houston-VPSI	6085-D	168	0.0	221.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Island Transit	6015-A	26	339.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Laredo Municipal Transit	6009-A	48	314.4	73.8	0.0	0.0	0.0	0.0	348.4	0.0	0.0
MetroTransAuth HarrisCnty	6008-B	1,050	13,370.3	0.0	0.0	51.4	0.0	0.0	30.4	0.0	0.0
Port Arthur Transit	6013-A	10	63.8	19.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ryder/ATE	6087-D	230	2,799.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VIA Metropolitan Transit	6011-B	484	5,316.5	1.5	1,945.7	0.0	0.0	0.0	0.0	0.0	0.0
Waco Transit System	6012-A	20	169.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		4,340.0	38,950.9	1,654.9	2,019.6	6,124.0	0.0	0.0	2,999.4	33,881.0	0.0

Source: Department of Energy

Table B5

2002 Sources of Energy (gallons in 000's)											
Transit Agency	ID/Org	VOMS	Diesel Fuel	Gas	LPG	LNG	Methanol	Ethanol	CNG	Kilowatt Hrs.	Other
Abilene Transit System (CityLink)	6040	39	544.5	15.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amarillo City Transit (ACT)	6001	16	154.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Beaumont Municipal Transit System (BMT)	6016	18	223.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brazos Trans Dist (The District)	6059	16	59.7	32.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Capital Metropolitan Transportation Authority (CMTA)	6048	528	3,328.1	237.1	0.0	0.0	0.0	0.0	333.6	0.0	0.0
City of Brownsville - Brownsville Urban System (BUS)	6014	24	316.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
City of Grand Prairie Transp Services Dept (Grand Connection)	6068	7	7.9	3.8	1.8	0.0	0.0	0.0	0.0	0.0	0.0
City of Mesquite	6070	10	0.0	31.1	1.8	0.0	0.0	0.0	0.0	0.0	0.0
City of San Angelo (SAMPO)	6037	11	73.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
City Transit Management Company, Inc. (CitiBus)	6010	65	521.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Corpus Christi Regional Transportation Authority (The B)	6051	61	741.1	0.0	94.8	0.0	0.0	0.0	0.0	0.0	0.0
Dallas - VPSI, Inc.	6084	106	0.0	174.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dallas Area Rapid Transit (DART)	6056	508	4,517.8	0.0	0.0	4,158.5	0.0	0.0	0.0	44,359.2	0.0
First Transit, Inc. (FG)	6057	265	3,415.8	0.0	0.0	0.0	0.0	0.0	148.5	0.0	0.0
First Transit, Inc.	6087	291	2,992.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fort Worth Transportation Authority (The T)	6007	180	489.1	128.5	0.0	0.0	0.0	0.0	1,051.6	0.0	0.0
Handitran Special Transit Division - City of Arlington	6041	13	53.5	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hill Country Trans Dist (The Hop)	6091	32	117.2	34.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Houston - VPSI, Inc.	6085	194	0.0	227.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Island Transit	6015	19	139.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Laredo Municipal Transit System (El Metro)	6009	48	363.0	38.3	0.0	0.0	0.0	0.0	517.3	0.0	0.0
Mass Transit Department - City of El Paso (Sun Metro)	6006	165	1,150.6	12.4	0.0	1,670.9	0.0	0.0	815.2	0.0	0.0
Metro Trans Auth of Harris County, TX (Metro)	6008	1,053	13,019.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Port Arthur Transit (PAT)	6013	10	70.6	16.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
The Gulf Coast Center (Connect)	6082	30	158.1	45.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VIA Metropolitan Transit (VIA)	6011	484	4,856.5	0.0	2,546.3	0.0	0.0	0.0	0.0	0.0	0.0
Waco Transit System, Inc. (WTS)	6012	20	163.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Totals		4,213	37,477.7	998.3	2,644.7	5,829.4	0.0	0.0	2,866.2	44,359.2	0.0

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Table B6

2003 Sources of Energy (gallons in 000's)												
Transit Agency	ID/Org	VOMS	Diesel Fuel	Gasoline	LPG	LNG	Methanol	Ethanol	CNG	Kilowatt Hrs.	Other	
Abilene Transit System (CityLink)	6040	39	501.5	6.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Amarillo City Transit (ACT)	6001	17	184.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ATC / Vancom (ATC)	6092	164	719.7	181.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Beaumont Municipal Transit System (BMT)	6016	17	218.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Brazos Transit District (The District)	6059	14	51.1	61.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Capital Metro Transp Auth (CMTA)	6048	482	3,468.8	234.9	0.0	0.0	0.0	0.0	326.8	0.0	0.0	
City of Brownsville - Brownsville Urban System (BUS)	6014	22	282.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
City of Grand Prairie Transp Serv Dept (Grand Connection)	6068	7	9.3	1.3	9.6	0.0	0.0	0.0	0.0	0.0	0.0	
City of Mesquite	6070	10	0.0	29.3	4.8	0.0	0.0	0.0	0.0	0.0	0.0	
City of San Angelo (SAMPO)	6037	11	73.4	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	
City Transit Management Company, Inc. (Citibus)	6010	67	490.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Corpus Christi Regional Transp Auth (The B)	6051	53	838.9	0.0	67.1	0.0	0.0	0.0	0.0	0.0	0.0	
Dallas - VPSI, Inc.	6084	109	0.0	174.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Dallas Area Rapid Transit (DART)	6056	594	4,015.8	156.0	0.0	3,988.1	0.0	0.0	0.0	51,116.0	0.0	
First transit	6087	283	3,227.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Fort Worth Transp Auth (The T)	6007	173	45.2	0.9	0.0	0.0	0.0	0.0	1,836.8	0.0	0.0	
Handitran Special Transit Division - City of Arlington	6041	13	50.3	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	
Hill Country Transit District (The Hop)	6091	33	127.3	21.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	
Houston - VPSI, Inc.	6085	235	0.0	268.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Island Transit	6015	27	137.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Laredo Transit Management, Inc. (El Metro)	6009	51	293.7	19.2	0.0	0.0	0.0	0.0	506.7	0.0	0.0	
Lower Rio Grande Valley Development Council (LRGVDC)	6090	14	200.7	1.1	2.0	0.0	0.0	0.0	0.0	0.0	0.0	
Mass Transit Department - City of El Paso (Sun Metro)	6006	167	1,019.0	4.8	0.0	1,651.7	0.0	0.0	1,037.0	0.0	0.0	
Metro Trans Auth of Harris County, TX (Metro)	6008	1,017	12,569.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Port Arthur Transit (PAT)	6013	10	67.8	9.7	2.2	0.0	0.0	0.0	0.0	0.0	0.0	
The Gulf Coast Center (Connect)	6082	32	94.4	26.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	
VIA Metropolitan Transit (VIA)	6011	490	4,557.9	0.0	2,490.7	0.0	0.0	0.0	0.0	0.0	112.2	
Waco Transit System, Inc. (WTS)	6012	21	161.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total		4,172	33,404.9	1,196.9	2,577.8	5,639.9	0.0	0.0	3,708.6	51,116.0	115.2	

Table B7

2004 Sources of Energy (gallons in 000's)												
Transit Agency	ID/Org	VOMS	Diesel Fuel	Gasoline	LPG	LNG	Methanol	Ethanol	CNG	Kilowatt Hrs.	Electric Battery	Other
Abilene Transit System (CityLink)	6040	40	154.7	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amarillo City Transit (ACT)	6001	17	168.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ATC / Vancom (ATC)	6092	169	766.3	206.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Beaumont Municipal Transit System (BMT)	6016	17	230.9	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brazos Transit District (The District)	6059	14	25.2	59.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Capital Metropolitan Transportation Authority (CMTA)	6048	414	3,560.9	248.4	0.0	0.0	0.0	0.0	302.0	0.0	0.9	0.0
City of Brownsville - Brownsville Urban System (BUS)	6014	24	306.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
City of Grand Prairie Transp Serv Dept (Grand Connection)	6068	7	9.9	1.0	11.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
City of Mesquite (MTED)	6070	10	0.0	29.0	8.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
City of San Angelo (SAMPO)	6037	11	65.3	0.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
City Transit Management Company, Inc. (Citibus)	6010	67	465.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Corpus Christi Regional Transportation Authority (The B)	6051	53	745.6	0.0	39.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dallas - VPSI, Inc.	6084	119	0.0	180.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dallas Area Rapid Transit (DART)	6056	733	6,299.0	133.9	0.0	4,580.5	0.0	0.0	0.0	55,401.0	0.0	0.0
Fort Worth Transportation Authority (The T)	6007	167	21.8	0.5	0.0	0.0	0.0	0.0	1,730.3	0.0	0.0	0.0
Golden Crescent Regional Planning Commssion (VICTORIA TRANSIT)	6095	10	0.0	52.9	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Handitran Special Transit Division - City of Arlington (Handitran)	6041	13	47.5	0.0	0.0	0.0	0.0	0.0	5.1	0.0	0.0	0.0
Hill Country Transit District (The Hop)	6091	40	137.4	21.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.2
Island Transit	6015	29	153.3	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.8
Laredo Transit Management, Inc. (El Metro)	6009	50	253.4	0.0	0.0	0.0	0.0	0.0	623.8	0.0	0.0	0.0
Lower Rio Grande Valley Development Council (LRGVDC)	6090	13	68.1	0.0	25.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Transit Department - City of El Paso (Sun Metro)	6006	172	1,015.9	0.0	0.0	1,834.4	0.0	0.0	1,201.5	0.0	0.0	0.0
Metro Trans Auth of Harris County, TX (Metro)	6008	1,044	12,852.1	0.0	0.0	0.0	0.0	0.0	0.0	5,092.2	0.0	0.0
Midland-Odessa Urban Transit District (EZ RIDER)	6097	13	90.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Port Arthur Transit (PAT)	6013	10	71.5	0.1	12.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
The Gulf Coast Center (Connect)	6082	28	104.0	22.1	15.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VIA Metropolitan Transit (VIA)	6011	439	3,613.4	1.4	2,274.8	0.0	0.0	0.0	0.0	0.0	0.0	924.1
Waco Transit System, Inc. (WTS)	6012	21	181.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Totals		3,744	31,408.8	965.8	2,397.0	6,414.8	0.0	0.0	3,862.7	60,493.2	0.9	962.2

Source: Department of Energy

Table B8

2005 Sources of Energy (gallons in 000's)												
Transit Agency	ID/Org	VOMS	Diesel Fuel	Gasoline	LPG	LNG	Methanol	Ethanol	CNG	Kilowatt Hrs.	Electric Battery	Other
Abilene Transit System (CityLink)	6040	36	162.7	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amarillo City Transit (ACT)	6001	17	171.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ATC / Vancom (ATC)	6092	170	735.1	215.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Beaumont Municipal Transit System (BMT)	6016	17	235.1	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brazos Transit District (The District)	6059	14	15.7	90.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Capital Metropolitan Transportation Authority (CMTA)	6048	428	3,584.3	266.3	0.0	0.0	0.0	0.0	95.1	0.0	0.0	0.0
City of Brownsville - Brownsville Urban System (BUS)	6014	25	299.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
City of Grand Prairie Transportation Services Department (Grand Connection)	6068	7	12.9	1.1	10.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
City of Mesquite (MTED)	6070	10	0.0	25.5	10.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
City of San Angelo (COSA)	6037	13	73.5	0.0	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
City Transit Management Company, Inc. (Citibus)	6010	80	500.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Corpus Christi Regional Transportation Authority (The B)	6051	50	673.7	0.0	27.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dallas - VPSI, Inc.	6084	132	0.0	186.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dallas Area Rapid Transit (DART)	6056	754	6,330.7	142.4	0.0	5,579.9	0.0	0.0	0.0	57,433.3	0.0	0.0
Fort Worth Transportation Authority (The T)	6007	149	17.3	0.0	0.0	0.0	0.0	0.0	1,712.7	0.0	0.0	0.0
Golden Crescent Regional Planning Commssion (VICTORIA TRANSIT)	6095	11	0.0	55.3	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Handitran Special Transit Division - City of Arlington (Handitran)	6041	12	35.0	0.0	0.0	0.0	0.0	0.0	5.5	0.0	0.0	0.0
Hill Country Transit District (The Hop)	6091	42	172.3	11.4	9.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Island Transit (I T)	6015	19	133.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.0
Laredo Transit Management, Inc. (El Metro)	6009	49	232.5	2.4	0.0	0.0	0.0	0.0	657.0	0.0	0.0	0.0
Lower Rio Grande Valley Development Council (LRGVDC)	6090	6	21.8	3.7	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Transit Department - City of El Paso (Sun Metro)	6006	172	853.3	0.0	0.0	1,776.7	0.0	0.0	1,642.0	0.0	0.0	0.0
Metropolitan Transit Authority of Harris County, Texas (Metro)	6008	984	11,163.9	0.0	0.0	0.0	0.0	0.0	0.0	6,989.2	0.0	0.0
Midland-Odessa Urban Transit District (EZ RIDER)	6097	15	97.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Port Arthur Transit (PAT)	6013	9	69.7	0.1	10.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
The Gulf Coast Center (Connect Transit)	6082	35	89.9	21.8	10.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VIA Metropolitan Transit (VIA)	6011	437	4,734.0	1.8	2,386.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Waco Transit System, Inc. (WTS)	6012	21	187.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Totals		3,714.0	30,603.0	1,027.0	2,479.0	7,356.6	0.0	0.0	4,112.3	64,422.5	0.0	21.0

Table B9

2006 Sources of Energy (gallons in 000's)												
Transit Agency	ID/Org	VOMS	Diesel Fuel	Gasoline	LPG	LNG	Methanol	Ethanol	CNG	Kilowatt Hrs.	Electric Battery	Other
Abilene Transit System (CityLink)	6040	32	165.6	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amarillo City Transit (ACT)	6001	17	169.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ATC / Vancom (ATC)	6092	170	811.2	228.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Beaumont Municipal Transit System (BMT)	6016	17	232.4	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brazos Transit District (The District)	6059	13	13.1	92.1	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0
Capital Metropolitan Transportation Authority (CMTA)	6048	450	3,576.0	265.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
City of Brownsville - Brownsville Urban System (BUS)	6014	25	332.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
City of Grand Prairie Transportation Services Department (Grand Connection)	6068	7	12.8	1.3	8.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
City of Mesquite (MTED)	6070	10	0.0	23.9	19.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
City of San Angelo (COSA)	6037	13	67.7	0.0	6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
City Transit Management Company, Inc. (Citibus)	6010	75	507.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Corpus Christi Regional Transportation Authority (The B)	6051	48	651.6	1.5	11.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dallas - VPSI, Inc.	6084	151	0.0	206.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dallas Area Rapid Transit (DART)	6056	728	6,319.4	157.8	0.0	5,542.7	0.0	0.0	0.0	59,085.4	0.0	0.0
Fort Worth Transportation Authority (The T)	6007	153	11.9	0.0	0.0	0.0	0.0	0.0	2,548.5	0.0	0.0	0.0
Golden Crescent Regional Planning Commission (VICTORIA TRANSIT)	6095	11	0.0	57.4	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Handitran Special Transit Division - City of Arlington (Handitran)	6041	12	49.8	0.0	0.0	0.0	0.0	0.0	3.8	0.0	0.0	0.0
Hill Country Transit District (The Hop)	6091	35	148.6	7.4	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Island Transit (I T)	6015	19	147.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	41.9
Laredo Transit Management, Inc. (El Metro)	6009	49	216.3	0.0	0.0	0.0	0.0	0.0	692.8	0.0	0.0	0.0
Lower Rio Grande Valley Development Council (LRGVDC)	6090	14	37.5	4.8	7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Transit Department - City of El Paso (Sun Metro)	6006	171	580.3	0.0	0.0	1,638.0	0.0	0.0	1,900.1	0.0	0.0	0.0
Metropolitan Transit Authority of Harris County, Texas (Metro)	6008	927	10,628.2	0.0	0.0	0.0	0.0	0.0	0.0	7,583.2	0.0	0.0
Midland-Odessa Urban Transit District (EZ RIDER)	6097	16	105.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Port Arthur Transit (PAT)	6013	9	18.4	0.0	55.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
The Gulf Coast Center (Connect Transit)	6082	26	68.7	18.7	12.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VIA Metropolitan Transit (VIA)	6011	453	5,124.2	207.7	1,865.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Waco Transit System, Inc. (WTS)	6012	20	211.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Totals		3,671	30,207.9	1,273.9	1,996.9	7,182.5	0.0	0.0	5,145.3	66,668.6	0.0	41.9

APPENDIX C

Table C1

Dallas DART - Fuels Usage (gallons in 000's)						
	Diesel	Gasoline	LPG	LNG	CNG	Electric Propulsion
1998	5595.19	0	0	0	13.049	20724.1
1999	5941.21	0	0	0	13.049	19443.1
2000	4793.99	0	0	4346.29	0	30366.4
2001	4381.35	0	0	4278.79	0	33880.9
2002	4517.84	0	0	4158.49	0	44359.1
2003	4015.77	155.99	0	3988.12	0	51115.9
2004	6298.98	133.89	0	4580.48	0	55400.9
2005	6330.73	142.44	0	5579.91	0	57433.31
2006	6319.44	157.76	0	0	0	0

Source: Department of Energy

Table C2

Houston METRO - Fuels Usage (gallons in 000's)						
	Diesel	Gasoline	LPG	LNG	CNG	Electric Propulsion
1998	12463.25	0	0	1351.03	38.38	0
1999	13541.91	0		822.752	128.31	0
2000	13843.27	0	0	207.94	140.44	0
2001	13370.25	0	0	51.44	30.38	0
2002	13019.2	0	0	0	0.014	0
2003	12569.06	0	0	0	0	0
2004	12852.1	0	0	0	0	5092.2
2005	11163.89	0	0	0	0	6989.2
2006	10628.18	0	0	0	0	7583.2

Source: Department of Energy

Table C3

San Antonio VIA - Fuels Usage (gallons in 000's)						
	Diesel	Gasoline	LPG	LNG	CNG	Electric Propulsion
1998	5308.29	6.143	1221.38	0	0	0
1999	5852.55	6.262	1255.03	0	0	0
2000	5931.61	0.352	1195.65	0	0	0
2001	5316.48	1.51	1945.66	0	0	0
2002	4856.46	0	2546.3	0	0	0
2003	4557.92	0	2490.7	0	0	0
2004	3613.37	1.35	2274.78	0	0	0
2005	4733.97	1.767	2386.19	0	0	0
2006	5124.15	207.68	1865.68	0	0	0

Source: Department of Energy

Table C4

Austin Capitol Metro - Fuels Usage (gallons in 000's)						
	Diesel	Gasoline	LPG	LNG	CNG	Electric Propulsion
1998	2563.57	424.81	0	0	427.81	0
1999	2889.39	406.84	0	0	305.16	0
2000	3108.13	244.02	0	0	368.09	0
2001	3252.82	323.37	0	0	337.3	0
2002	3328.05	237.1	0	0	333.57	0
2003	3468.78	234.89	0	0	326.78	0
2004	3560.92	248.42	0	0	301.98	0
2005	3584.34	266.27	0	0	95.12	0
2006	3576.04	265.08	0	0	0	0

Source: Department of Energy