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# City of Grand Island



**Tuesday, January 17, 2006**  
**Study Session Packet**

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**City Council:**

**Carole Cornelius**  
**Peg Gilbert**  
**Joyce Haase**  
**Margaret Hornady**  
**Robert Meyer**  
**Mitchell Nickerson**  
**Don Pauly**  
**Jackie Pielstick**  
**Scott Walker**  
**Fred Whitesides**

**Mayor:**

**Jay Vavricek**

**City Administrator:**

**Gary Greer**

**City Clerk:**

**RaNae Edwards**

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**7:00:00 PM**  
**Council Chambers - City Hall**  
**100 East First Street**

**Call to Order**

**Invocation - Councilmember Mitch Nickerson**

**Pledge of Allegiance**

**Roll Call**

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## **A - SUBMITTAL OF REQUESTS FOR FUTURE ITEMS**

Individuals who have appropriate items for City Council consideration should complete the Request for Future Agenda Items form located at the Information Booth. If the issue can be handled administratively without Council action, notification will be provided. If the item is scheduled for a meeting or study session, notification of the date will be given.

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## **B - RESERVE TIME TO SPEAK ON AGENDA ITEMS**

This is an opportunity for individuals wishing to provide input on any of tonight's agenda items to reserve time to speak. Please come forward, state your name and address, and the Agenda topic on which you will be speaking.

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## **MAYOR COMMUNICATION**

This is an opportunity for the Mayor to comment on current events, activities, and issues of interest to the community.



# City of Grand Island

Tuesday, January 17, 2006

Study Session

## Item -1

### Presentation of Alternative Fuel Report

*Paul Briseno, Assistant to the City Administrator will present an Alternative Fuel Report.*

**Staff Contact: Paul Briseno**

# ALTERNATIVE FUEL REPORT

City of  
**Grand Island**

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**2005**

# Executive Summary

## **Background**

The United States dependence of imported petroleum and increased prices has created a need for further use of domestic fuels and fuel flex vehicles.

A report of alternative fuels and fuel flex vehicles was requested on behalf of the City of Grand Island Council by Mayor Jay Vavricek in September 2005. This report is written to help the City Council set policy direction for the procurement and use of fuel and vehicles within the municipal fleet.

The City of Grand Island municipal fleet of petroleum burning vehicles includes over 300 units. In the Fiscal Year 2004-05 the municipal fleet consumed 259,904 gallons of fuel, of which E10, regular unleaded, biodiesel, and regular summer/winter diesel were used.

## **Findings**

Information provided within this document was made available through case studies, communities throughout the U.S., city staff, industry and governmental reports.

Ethanol and Biodiesel fuel created from domestically grown crops provide an alternative fuel source that has proven to provide superior results. Alternative fuels contain characteristics that are more environmentally friendly than regular petroleum products.

Alternative fuels and fuel flex vehicles offer the City of Grand Island a resource for obtaining optimal operating efficiency of the municipal fleet. Alternative fuels decrease the dependence of foreign fuels and increase agriculture prices that directly impacts Grand Island with added economic value.

## **Conclusion**

The City of Grand Island Administration recommends the municipal fleet utilize alternative fuels and obtain fuel flex vehicles when possible. The utilization of alternative fuels will provide optimal operation and longevity of the municipal fleet. The future environment of our city will be enhanced with the consumption of these fuels.

# Alternative Fuel Report

## for

# The City of Grand Island Municipal Fleet

The United States demand for fossil fuel from domestic and foreign producers and the increase in fuel prices have amplified the awareness and need of alternative fuels. The United States Government has recognized benefits of ethanol based fuels and biodiesel as well as the impacts fuel flex vehicles have on our environment. In 1990 Clean Air Act Amendments were made to the 1970 Clean Air Act to improve nationwide air quality. These initiatives set emissions standards for stationary and mobile sources as well phased lead in gasoline. Congress passed the Energy Policy Act in 1992 in efforts of enhancing our nation's energy security and improving environmental quality. The oil industry has redefined petroleum in the past 20 years to create a more efficient fuel, however the United States Department of Energy states that the average vehicle emits more than 600 pounds of pollution into the air each year which include carbon monoxide, volatile organic compounds, particulate matter, oxides of nitrogen, and carbon dioxide

In November 2005, the United States dependence of imported petroleum was 68.6% or 13,887,000 barrels of crude oil per day with an average price per barrel of OPEC oil at \$50.28. Nebraska currently has access to renewable resources derived from corn and soybeans. These resources ease the necessary dependence of foreign oil. These fuels when utilized can produce more efficient emissions, greater lubricity, enhance environment, increase jobs and provide a positive economic impact for the greater part of Nebraska and the Central United States.

To better understand the multiple fuels discussed throughout this document it is important to understand the basics of fuel and from where the United States fuel is derived. A barrel of crude oil consists of 42 gallons of liquid and makes multiple by-products. The following table describes what products are produced from a barrel of crude oil. These products have a total volume of 44.6 gallons of which 2.6 gallons are generated from process gains.

### Products produced from a barrel of crude oil

Product	Gallons per Barrel	Percentage
<b>Gasoline</b>	<b>19.4</b>	<b>43.50%</b>
<b>Distillate Fuel Oil</b>	<b>9.7</b>	<b>21.75%</b>
<b>Kerosene - Type Jet Fuel</b>	<b>4.3</b>	<b>9.64%</b>
<b>Coke</b>	<b>2</b>	<b>4.48%</b>
<b>Residual Fuel Oil</b>	<b>1.9</b>	<b>4.26%</b>
<b>Liquefied Refinery Gases</b>	<b>1.9</b>	<b>4.26%</b>
<b>Still Gass</b>	<b>1.8</b>	<b>4.04%</b>
<b>Asphalt and Road Oil</b>	<b>1.4</b>	<b>3.14%</b>
<b>Petrochemical Feedstock</b>	<b>1.1</b>	<b>2.47%</b>
<b>Lubricants</b>	<b>0.5</b>	<b>1.12%</b>
<b>Kerosene</b>	<b>0.2</b>	<b>0.45%</b>
<b>Other</b>	<b>0.4</b>	<b>0.90%</b>

According to the American Petroleum Institute, much of the imported fuels are obtained from the Organization of Petroleum Exporting Countries (OPEC) at a rate of 47.6% of the U.S. imports. Persian Gulf countries account for 20.8% of all imports. The following table details imports for July 2005.

**Estimated Crude and Products Imports to the U.S. from  
Leading Supplier Countries**

	July Imports (1000 barrels per day)	% of Total Imports	% of Domestic Product Supplied
1 Canada	1,897	15.2%	9.1%
2 Saudi Arabia	1,689	13.6%	8.1%
3 Venezuela	1,596	12.8%	7.7%
4 Mexico	1,279	10.3%	6.1%
5 Nigeria	1,156	9.3%	5.5%
6 Iraq	615	4.9%	2.9%
7 Russia	587	4.7%	2.8%
8 Algeria	535	4.3%	2.6%
9 United Kingdom	392	3.1%	1.9%
10 Virgin Islands	319	2.6%	1.5%
Other	2,393	19.2%	11.5%
<b>Total</b>	<b>12,458</b>	<b>100.00%</b>	<b>59.7%</b>
<b>OPEC Countries</b>	<b>5,925</b>	<b>47.6%</b>	<b>28.4%</b>
<b>Persian Gulf Countries</b>	<b>2,589</b>	<b>20.8%</b>	<b>12.4%</b>

This Alternative Fuel Report was developed by researching case studies, industry reports, governmental reports, communities throughout the U.S., and city staff. This report will lend guidance and provide policy direction for current and future use of the municipal fleet and services.

***Ethanol***

Ethanol is an alcohol made from renewable domestic resources with a process of fermentation/distillation of plant sugars. Other products that produce ethanol include wood waste, cheese whey, sucrose, potato waste, brewery waste, and food and beverage wastes. A variety of highly valued feed co-products, including gluten meal, gluten feed and dried distillers grains, are produced from the remaining protein, minerals, vitamins and fiber. These byproducts are sold as a high-value feed for livestock.

According to Renewable Fuels Association, there are currently 94 ethanol plants that have a combined production capacity of 4.2 billion gallons a year. There are 30 more plants as well as nine expansions under construction that will have a combined annual capacity of 1.5 billion

gallons of ethanol. Chief Ethanol Fuels of Hastings was the first ethanol plant in Nebraska and began processing in 1985. Today, Nebraska is the third largest ethanol producer with 11 plants and the capacity to extract 520 million gallons of ethanol per year. The United States produces nearly two billion gallons of ethanol a year. Modern ethanol plants produce 15% more ethanol from a bushel of corn and use 20% less energy compared to plants five years ago. One bushel of corn (approximately 56 pounds) produces 2.7 gallons of ethanol. Nebraska is suited well for ethanol production due to its large corn crop, central location and competitive rail transportation. The growth within the ethanol industry has created a new market for nearly one-third of Nebraska's corn production, creating a combined annual output value of \$1,200,000,000, 4,000 jobs with an average salary of \$42,000 and a combined annual payroll that exceeds \$36,000,000.

During April of 2005, 68% of all fuel sold in Nebraska contained 10% or more ethanol. Of the 63.9 million gallons of gasoline sold in the state during the month, 43.3 million gallons contained ethanol and 20.6 million gallons were regular unleaded gasoline.

Many countries have made ethanol a top priority in their energy plan. The following table lists these countries. Brazil is the number one country with demand and supply of ethanol.

**WORLD FUEL ETHANOL TRADE**  
(billion gallons)

COUNTRY	2003	2005	2010
<b>SUPPLY</b>			
Brazil	3.8	4.2	5.6
USA	2.8	3.5	5
EU	0.5	1	1.9
Other	0.2	0.9	3.4
<b>Total</b>	<b>7.3</b>	<b>9.6</b>	<b>15.9</b>
<b>DEMAND</b>			
Brazil	3.4	3.7	4.6
USA	2.8	3.5	5
Canada	0.1	0.2	0.4
EU	0.4	1.3	3.4
Japan	0.2	0.5	1.9
Other	0.4	0.4	0.6
<b>Total</b>	<b>7.3</b>	<b>9.6</b>	<b>15.9</b>

The U. S. Department of Energy Laboratory indicates a 38% gain in the overall energy input/output equation for the corn-to-ethanol process. This equates to 100 British Thermal Unit (BTUS) of energy used to plant corn, harvest the crop, transport it, therefore, 138 BTU's of energy is available in the fuel produced. Improved corn yields over the past 20 years have made production less energy intensive.

Ethanol's positive characteristics as an alternative fuel include the following:

- ☀ Enhances engine performance by increasing octane and raising oxygen levels
- ☀ Cleans and prevents engine deposits
- ☀ Reduces carbon monoxide emissions by 22%
- ☀ Reduces greenhouse gases that cause global warming by 40%
- ☀ Acts as a gas line antifreeze



- ☀ 100% ethanol is biodegradable
- ☀ Increases the values of feed grains and promotes energy independence

### ***E10 (Supra)***

E10 unleaded is a blend of 10% ethanol and 90% ordinary unleaded gasoline. Every major car maker in the world approves the use of 10% ethanol blends (E10 unleaded) in their engine warranty. Almost all post-1986 vehicles can operate satisfactorily on E10.

E10's positive characteristics as an alternative fuel include the following:

- ☀ Enhances engine performance
- ☀ Cleans and prevents engine deposits
- ☀ Cleans rust and contaminates within the fuel tank
- ☀ Adds two to three points of octane to gasoline
- ☀ Contributes to a more complete fuel combustion
- ☀ Reduces greenhouse gas emissions by 12 – 19%
- ☀ Reduces carbon monoxide 25%
- ☀ Prevents the build-up of power-robbing deposits in fuel injection systems
- ☀ Contains many elements of 100% ethanol

In 2004, ethanol use in the U.S. reduced greenhouse emissions by 7.03 million tons.

Manufacturers of small engines and power equipment have built their products to run on E10. The equipment list for small engines companies that warranty E10 is endless and covers everything from motorcycles to mowers. The chart at the right confirms equipment and engine manufacturers' approval of the use of E10 unleaded with ethanol. An operable year for small engines to use E10 has not been established.

Power Equipment	E-10 Unleaded Approval	Power Equipment	E-10 Unleaded Approval
Am. Yard Prd./Roper/Rally	YES*	Simplicity	YES
Ariens	YES†	Snapper	NM
Bolens/Try-Bilt	YES*	Stihl Inc.	YES
Briggs & Stratton	YES	Tecumseh	YES*
Coleman	YES*	Toro	YES
Cub Cadet	NM	<b>Recreational</b>	
Dixon	YES	ArticCat (Arctco)	YES*
Echo	YES	Honda	YES
Grasshopper	NM	Kawasaki	YES
Homelite	YES	Polaris	YES*
Honda Power Equipmnet	YES	Skidoo/Bombardier	YES
John Deer (4-Stroke)	YES	Suzuki	YES*
Kawasaki	YES	Yamaha	YES
Kohler	YES	<b>Boats/Marine</b>	
Kubota	NM	Honda	YES
Lawnboy	YES	Kawasaki	YES
McCulloch	YES*	Mercury	YES*
MTD	YES	OMC (Johnson/Evenrude)	YES*
Onan	YES*	Pleasurecraft	YES*
Poulan/Weedeater	NM	Tigershark (Arctco)	YES*
Ryobi	YES*	Tracker	YES*
Sears	YES*	Yamaha	YES*
Shindalwa	NM		

In January of 2005 the American Coalition for Ethanol conducted a Fuel Economy Study comparing performance and cost of various ethanol blends and standard unleaded gasoline. This scientific study left minor marginal room for human error and resulted in the following:

1. The vehicles tested with E10 performed at 1.5% less mileage per gallon compared to unleaded fuel.
2. With the cost of ethanol lower than the cost of unleaded gas, although MPG of ethanol was slightly lower, the **cost per mile of operation** was generally lower when using ethanol blends.

The conclusion of this study stated that while vehicles using concentrations of ethanol higher than 10% operated normally during tests, **the American Coalition for Ethanol cannot recommend using ethanol blends with higher concentrations of ethanol than those recommended by the vehicle’s manufacturer.**

The following chart is from the study and illustrates the actual mileage.

**Miles Per Gallon**

Fuel	05 Chevy Impala 3.4 L	05 Toyota Camry 4 cly	05 Ford Taurus 3.0 L	Average	Variance
Unleaded	27.714	31.455	24.810	27.993	
E10	27.426	31.464	23.851	27.580	-0.015

**Cost Per Mile**

Fuel	05 Chevy Impala 3.4 L	05 Toyota Camry 4 cly	05 Ford Taurus 3.0 L	Average	Variance
Unleaded	0.072	0.063	0.080	0.071	
E10	0.070	0.061	0.081	0.070	-0.011

**Miles Per \$20**

Fuel	05 Chevy Impala 3.4 L	05 Toyota Camry 4 cly	05 Ford Taurus 3.0 L	Average	Variance
Unleaded	0.072	0.063	0.080	0.071	
E10	0.070	0.061	0.081	0.070	-0.011

Fuel	Net Cost
Unleaded	1.598
E10	1.082

E10’s negative characteristics as an alternative fuel include the following:

- ☀ May loosen rust and contaminants in fuel tanks
- ☀ May clog of the fuel filter
- ☀ Vehicles with fuel systems 15 years or older or vehicles pre-1986 are not recommended for the use of E10
- ☀ A decrease of fuel performance of 1.5% less mileage per gallon can be expected compared to regular unleaded

## ***E85***

E85 unleaded is a blend of 85% ethanol and 15% ordinary unleaded gasoline. The U. S. Department of Energy has defined E85 as an alternative fuel

E85's positive characteristics as an alternative fuel include the following:

- ☀ Highest oxygen content of any transportation fuel available (105)
- ☀ Burns cleaner than gasoline
- ☀ Cost is comparable to unleaded gasoline
- ☀ Emits fewer exhaust emissions
  - ◆ Reduction of carbon dioxide (CO<sub>2</sub>)
  - ◆ Reduction of hydrocarbon and benzene emissions
- ☀ Reduces the production of smog
- ☀ Creates a decline in respiratory illness associated with poor air quality
- ☀ Increase power of 3% to 5%
- ☀ Contains many elements of 100% ethanol

The following is the method for producing E85:

1. 100% Ethanol is produced at an ethanol production facility. Prior to transporting, the ethanol must be **denatured**.
2. The denatured ethanol is transported to the fuel supplier.
3. Denatured ethanol is dispensed into the fuel supplier's ethanol storage tank.
4. A fuel carrier orders a tanker full of E85.
5. The fuel supplier dispenses 8.5 parts denatured ethanol to 1.5 parts unleaded gasoline into the tanker truck.
6. The fuel carrier delivers E85 to the retail fuel marketer for sale to the public.

\*Denatured refers to the required "poisoning" of ethanol before it leaves the production plant. Typically this is done by blending in 5% gasoline.

In Grand Island there are two current locations to purchase E85, Aurora Cooperative and Pump and Pantry #3. E85 requires special materials needed to convert a regular unleaded pump/tank to an E85 pump/tank. If the following criteria for E85 are not followed by the retailer the user could contaminate the purchaser's vehicle's system. Contamination deposits can cause pitting of cylinder walls as well as cause poor vehicle handling. The following criteria must be met:

1. All aluminum products must be removed from a typical gasoline dispensing system.
2. Natural rubber, polyurethane, cork gasket material, leather, polyvinyl chloride (PVC), polyamides, methyl-methacrylate plastics, and certain thermo and thermoset plastics can not be used in the fueling process.
3. In cold weather, more gasoline is added to the blend to avoid starting problems. Regular gasoline uses a similar process during winter months. Also at low temperature (32°F), E85 vapor is more flammable than gasoline vapor.

4. Only metal underground storage tanks that meet EPA December 1998 codes can be used to store E85.
5. Fiberglass storage tanks manufactured prior to 1992, **MAY NOT** be able to handle E85.
6. Tanks must be cleaned prior to holding E85. This process includes:
  - a. Using a “filter agitator” device.
  - b. Physically entering the tank and steam clean the sludge.
  - c. Using robotic cannon to liquefy the sludge. The sludge is then pumped out of the tank and disposed of at an approved site.
  - d. Placing a chemical cleaner in the tank to clean the walls.

**Vehicles that use E85 will experience a 5% to 15% drop in fuel economy.** This will vary based on temperature and driving conditions. The range of any vehicle is dependent on the size of the fuel tank and driving habits. The 2006 Ford Taurus, standard model will get 20mpg city/27mpg hwy and its fuel flex model (same price) will get 19mpg city/27 mpg hwy, according to the Ford Motor Company.

E85’s price per gallon has dramatically increased over the past few months because the value of the finished product has increased. E85 will typically follow the trends of unleaded and E10 fuels. The final per gallon cost of E85 is a process with many steps that add a margin to the retail sale price. According to the Nebraska Ethanol Board the process is as follows: Plant A sells to a marketing company from IL; this company provides Oil Company B ethanol for NE sales; Oil Company B sells ethanol to Wholesale Company C; Wholesale Company C sells to Branded Retailer D, who adds a margin and sells at retail.

Generally, E85 is priced to be competitive with 87 octane gasoline. The blender of record receives a tax credit on every gallon of ethanol he/she purchases thus being able to pass that savings along their retailer who will pass the savings along to the customer. E85 can be more competitive with the federal government’s 50 cent per gallon production credit.

E85’s negative characteristics as an alternative fuel include the following:

- ☀ Only applicable in approved Fuel Flex Vehicles (FFV) or Alternative Fuel Vehicles (AFV)
- ☀ Use in non-approved vehicles will void the manufacture’s warranty
- ☀ Very corrosive
- ☀ CO2 is released during ethanol production and combustion, but recaptured as a nutrient
- ☀ Fuel parts must be tolerant to alcohol
  - ◆ Parts include many metals and rubbers throughout the fuel system
- ☀ Fuel performance of 5% to 15% less mileage per gallon compared to regular unleaded
  - ◆ Needs more fuel per pound of air than gasoline

The following table is provided by the United States Department of Energy and breaks down the costs, government incentives, and the final pump price for E85 compared to unleaded fuel. This table is based on a summer blend of E85. A similar table is available for winter blend and can be viewed at [http://www.e85fuel.com/pdf/ethanol\\_guidebook.pdf](http://www.e85fuel.com/pdf/ethanol_guidebook.pdf). Winter and Summer blending of E85 is a process that is similar to the blending of regular unleaded fuel for the multiple weather conditions.

## Appendix C: Pricing Sheet - Summer Blend



### National Ethanol Vehicle Coalition

3118 Emerald Lane • Jefferson City, MO 65109 • 573-365-8445  
 email: nevcc@e85fuel.com web: www.e85fuel.com

This worksheet has been prepared to illustrate the use of the federal tax incentives that are available to promote the use of E85 as a form of alternative transportation fuel by providing federal income tax credits. These credits assist in reducing the price of E85 to a level that is often very competitive with the price of regular unleaded gasoline. This example is based on information and experience that has been accumulated by the NEVC while working with tax advisors, the IRS, ethanol producers, and fuel marketers.

### Explanation of E85 Pricing for *Summer Blend*

85% ethanol and 15% hydrocarbon

#### Assumptions:

Number of gallons of fuel	<b>10,000</b>	Enter # of gallons to be purchased
Terminal price of unleaded/gallon	<b>\$ 1.01</b>	Enter local costs in shaded area.
Terminal price of ethanol/gallon	<b>\$ 1.41</b>	Enter local costs in shaded area.
Federal excise tax on unleaded/gallon	<b>\$ 0.184</b>	Set by federal law
State excise tax on unleaded	<b>\$ 0.20</b>	Enter state tax rate in shaded area.
Federal excise tax on E85/gallon	<b>\$ 0.1295</b>	Set by federal law

#### COST OF E85

Net price from Distributor/Blender	
Cost of unleaded (15% of total gallons)	\$ 1,515.00
Cost of ethanol (85% of total gallons)	\$ 11,985.00
Federal excise tax on E85	\$ 1,295.00
State excise tax on unleaded	\$ 2,000.00
Cost of E85 before fuel tax credit	\$ 16,795.00
Cost/gallon of E85 before credit	<u>\$ 1.67</u>
Fuel tax credit	\$ (3,960.00)
<b>Net cost of E85</b>	<b><u>\$ 12,835.00</u></b>
Cost/gallon of E85 after credit	<u>\$ 1.28</u>

#### BASE CASE COST OF UNLEADED GASOLINE

Net price from Distributor/Blender	
Cost of unleaded (100% of total gallons)	\$ 10,000.00
Federal excise tax on unleaded	\$ 1,840.00
State excise tax on unleaded	\$ 2,000.00
<b>Net cost of unleaded</b>	<b><u>\$ 13,940.00</u></b>
Cost/gallon of gasoline	<u>\$ 1.39</u>
<b>Savings per gallon of E85 over unleaded</b>	<b><u>\$ 0.11</u></b>

#### Fuel Tax Credit (FORM 6478)

# Gallons of ethanol used	8,500
Credit % per gallon	<u>\$ 0.53</u>
	4,505.00
<b>Less reduction of credit due to reduced excise tax</b>	
# of gallons	10,000
reduction of excise tax %	<u>0.0545</u>
	\$ (545.00)
<b>Net fuel tax credit</b>	<b>\$ 3,960.00</b>

#### Notes to explanation:

- \* Federal Excise taxes are paid at fuel terminal. Tax is added to supplier's invoice at the time fuel is loaded to the distributor. Gasoline federal excise tax = \$0.184/gallon, E85 = \$0.1295/gallon. Forms that apply: IRS Forms 8849 and 6478. Publications that apply: IRS 378 and 510.
- \* Form 8849 is the federal excise tax refund form. This form is used to claim a refund for the lower federal excise tax on E85 in situations where the higher excise tax has been paid. This form is filed separately from a company's income tax return.
- \* Form 6478 to claim the fuel tax credit is filed with the quarterly income tax return.
- \* Retailers that install (at their own expense) alternative fuel refueling property may be eligible for additional federal income tax deductions. (Clean Fuel Refueling Property) IRS Publication 535, Chapter 15. This provision of the tax code allows for accelerated depreciation of certain clean fuel vehicle refueling property. The deduction is limited to \$100,000 cumulatively per location. Recapture rules apply should the property cease to qualify as a clean fuel vehicle refueling site. (E85 is classified by the IRS as a Clean Fuel.)

The use of federal income tax credits become complicated by the unique characteristics of each individual, company, or corporation seeking to utilize these incentives. For example, in order to take advantage of a federal income tax credit, the organization seeking to use the credit must have a federal income tax liability. Many corporations are assessed tax rates pursuant to the federal Alternative Minimum Tax. Companies being taxed pursuant to AMT relates would have difficulty in taking advantage of the tax incentives described above. Additionally, there is a maximum tax credit that any single company may take in any one tax year.

The NEVC strongly encourages each company to consult tax advisers.

## *Fuel Flex Vehicles/Alternative Fuel Vehicles*

Vehicles that run on E85 are considered Fuel Flex Vehicles (FFV) or Alternative Fuel Vehicles (AFV). These vehicles allow a driver to use any combination of gasoline or ethanol, from 100% unleaded gasoline to 85% ethanol. FFV or AFV contain a fuel sensor or Powertrain Control Module that detects the alcohol content of the fuel after it has been dispensed into the vehicle. This amount will mix with fuel that is currently in the tank. This sensor automatically makes the adjustments the vehicle needs to operate on either gasoline or E85. Other special parts include the fuel delivery system, fuel tank, fuel lines, fuel injectors, computer system, anti-siphon device and dashboard gauges. .

Although there are many modifications for FFV/AFV compared to a non-E85 vehicle, auto manufactures generally sell FFV/AFV at comparable prices. Many government incentives including grants are available.

There are approximately 4.5 million E85 compatible vehicles on the American roads today, with 120 new models scheduled for release in 2006. Manufactures of FFV/AFV are required to warranty the exhaust emissions from these vehicles for 10 years or 100,000 miles. There are currently 750,000 flexible fuel vehicles on the market this year.

There are currently no conversion or aftermarket products that have been certified by the Environmental Protection Agency (EPA) as meeting the standards to maintain clean exhaust emissions. The differences in engine sizes, fuel injector's, air-fuel ratio, PCM calibrations, OBD, material composition of fuel lines, fuel pumps, fuel tanks, and other parts contribute to making a E85 conversion kit very difficult.

## *E Diesel*

E diesel is a blend of standard No. 2 diesel fuel containing up to 15% ethanol and a proprietary additive to maintain blend stability. This fuel has the potential to reduce certain components of exhaust emissions compared to regular No. 2 diesel. Currently **E diesel fuels are considered experimental.** More controlled testing is necessary to expand the durability, materials compatibility, emissions, and fuel economy for the diverse range of engines and duty cycles. Recently an E diesel Consortium has been formed to address the emerging technical, regulatory, and developmental issues associated with E diesel.

E diesel lowers the pour point of the fuel. No. 2 diesel will gel with lower temperatures, with a lower pour point E diesel reduces the need to blend No. 1 diesel/kerosene into winter blends. **It is not known if E diesel can be used widely in a diesel fleet with various vehicles with a diverse fuel system.** Each engine family, application and duty cycle will prove a variety of fuel economy test results. Tests on some equipment have shown fuel economy losses of less than 1% while others have been as high as 8% to 11% at the 15% ethanol concentration level.

## ***Biodiesel/B100***

Biodiesel/B100 is a fuel for diesel engines produced from renewable fats and oils such as soybean oil. Biodiesel contains no petroleum, but it can be blended with petroleum diesel to create a biodiesel blend. This fuel is made from separating glycerin from fat or vegetable oil. This process leaves behind two products, biodiesel and glycerin. Glycerin is a valuable byproduct used in soaps and other products. According to the Department of Energy/United States Department of Agriculture lifecycle analysis shows for every unit of fossil energy it takes to make biodiesel, 3.2 units of energy are gained. Biodiesel contains no petroleum, but it can be blended at any level with petroleum diesel to create a biodiesel blend. B2 (2% biodiesel, 98% petroleum diesel), B5 (5% biodiesel, 95% petroleum diesel), B20 (20% biodiesel, 80% petroleum diesel) are common mixtures that are splashed blended to create the desired combination.

Biodiesel/B100's positive characteristics as an alternative fuel include the following:

- ✱ Renewable resource
- ✱ Lower emissions
  - ◆ Reduction of unburned hydrocarbons/nitrogen oxides (ozone or smog forming originators) by 50%
  - ◆ Reduction of carbon dioxide by 78%
  - ◆ Reduction of carbon monoxide by 48%
  - ◆ Reduction of particulate matter which is linked to asthma and other diseases by 47%
  - ◆ Reduction of polycyclic aromatic hydrocarbons (PAH) and nitrated PAH compounds (cancer causing compounds)
- ✱ Biodegradable
- ✱ Non-toxic
- ✱ Free of sulfur or aromatic compounds
- ✱ Burns cleaner than petroleum diesel fuel
- ✱ Creates greater lubricity
- ✱ Higher oxygen content
- ✱ Protects engines
- ✱ Longer life expectancies for engines
- ✱ Similar fuel consumption, horse power, torque, and haulage rates
- ✱ First and only alternative fuel to complete testing requirements of the Clean Air Act
- ✱ Only alternative diesel fuel approved as an Energy Policy Act compliant mechanism

Ford Motor Company has the following concerns with a biodiesel concentration greater than 5%:

1. Requires special care at low temperatures to avoid excessive rise in viscosity and loss of fluidity.
2. Storage is a problem due to higher than normal risk of microbial contamination due to water absorption as well as a higher rate of oxidation stability which creates insoluble gums and sediment deposits.
3. Being hygroscopic, the fuel tends to have increased water content, which increases the risk of corrosion.
4. Biodiesel tends to cause higher engine deposit formations.

5. The methyl esters in biodiesel fuel may attack the seals and composite materials used in vehicle fuel systems.
6. It may attack certain metals such as zinc, copper based alloys, cast iron, tin, lead, cobalt, and manganese.
7. It is an effective solvent, and can act as a paint stripper, while it will tend to loosen deposits in the bottom of fuel tanks of vehicles previously ran on mineral diesel.

Biodiesel/B100's negative characteristics as an alternative fuel include the following:

- ✱ The softening and degrading of certain types of elastomers and natural rubbers
- ✱ Negative impact in fuel systems components, primarily fuel hoses and fuel pump seals
- ✱ Releases deposits built up from tank walls and pipes from previous diesel fuel usage
- ✱ Require more frequent fuel filter replacement when first converting
- ✱ Dissolves certain types of paints

**According to International engines, B100 is generally not recommended for use in engines.**

In the US, the industry that defines the consensus on diesel fuels is the American Society for Testing and Materials (ASTM) and D02. D02 is comprised of fuel producers, engine equipment manufacturers, and third party interests.

### ***B2/B5***

B2 is a splash blend of 2% biodiesel and 98% petroleum diesel. B5 is a splash blend of 5% biodiesel and 95% petroleum diesel. The properties of B2 and B5 are blends that are within diesel specification limits and **meet the ASTM D6751 Standards and are EPA registered.**

In 2001, 100 of the United States largest fleets used a splash blend of biodiesel. These fleets include the United State Postal Service, United States Department of Agriculture, Army and Air force.

B2 and B5's positive characteristics as an alternative fuel include the following:

- ✱ Safe to use in any compression-ignition engines
- ✱ Will not void engine warranties
- ✱ Longer engine life
- ✱ Increase of up to 11% in fuel economy
- ✱ Quieter engine
- ✱ A 1% blend can provide up to 65% increase in lubricity
- ✱ **Ratios up to B5 can be used with an existing fleet with no modifications to vehicles, facilities, and engine procedures**
- ✱ Contains many elements of B100

Ford Motor Company states that the World-Wide Fuel Charter, (a compilation of fuel quality requirements endorsed by the Alliance of Automobile Manufacturers, the European Automobile Manufacturers Association (ACEA), the Engine Manufacturers Association, the Japanese Automobile Manufacturers Association and a number of other automobile manufacturer trade associations around the world) **does not endorse fuels that contain more than 5% biodiesel.** Higher blends of 5% are not within ASTM D975 diesel specifications.



B2 and B5's negative characteristic as an alternative fuel include the following:

- ✱ Increases the cost of diesel by two to three cents

## ***B20***

B20 is a splash blend of 20% biodiesel and 80% petroleum diesel.

B20's positive characteristics as an alternative fuel include the following:

- ✱ Generally used in unmodified diesel engines
  - ◆ OEM and engine guarantees **should be reviewed** to assure that it does not violate manufactures warranties
- ✱ Typically used in commercial fleets that are subject to environmental concerns in the urban environment
- ✱ Similar fuel consumption, horsepower, torque, and haulage rates as conventional diesel fuel

### **Examples**

#### **Nebraska State Government**

Governor Dave Heineman announced on May 20, 2005 an executive order directing all state agencies that use fleet vehicles to require state employees to use E85 ethanol and biodiesel fuel whenever available within a reasonable distance, while operating the state's flexible-fuel or diesel-powered vehicles.

The Governor stated that alternative fuels benefit our cities, our environment, as well as reducing our dependence on foreign oil.

The state currently requires fleet vehicles to use E10 unleaded. This was mandated in 1980.

#### **University of Nebraska-Lincoln**

On June 30, 2005 the University of Nebraska-Lincoln announced that 870 cars, trucks, buses, vans, tractors and utility vehicles of their fleet will run on biodiesel and ethanol blended gasoline produced primarily from Nebraska crops. Diesel vehicles such as buses, tractors, some pickups and other vehicles will operate with B2 and vans, pickups, and sedans will use E10 unleaded ethanol blend, as well as 26 FFV that will use E85.

#### ***Minnesota***

In September of 2004, Minnesota Governor Tim Pawlenty signed an executive order requiring state agencies to reduce gasoline use in on-road vehicles 25% by 2010 and 50% by 2015 and to reduce petroleum-based diesel fuel use 10% by 2010 and 25% by 2015. At least 75% of most new on-road vehicles must be powered by biodiesel (blends of 20% or greater), ethanol (blends of 70% or greater), or hydrogen. Minnesota's Department of Administration currently has 1,130

FFVs in the fleet. The implementation of this order should result in a 25-fold increase in the state's E85 use to 1.7 million gallons per year. Current uses are approximately 68,000 gallons of E85 annually.

Minnesota's Department of Natural Resources has a fleet of 1,500 to 1,700 vehicles of which 10% are FFVs. Their policy is to buy 100% FFVs when they're available for passenger vehicles and whenever there isn't enough charge for light trucks.

***City of Grand Island***

The City of Grand Island's municipal fleet consists of many on-road and off-road vehicles. Currently the Fleet Services fuels and services nine of the thirteen city departments. Three 10,000 gallon tanks located at the Fleet Services facility fuel 249 vehicles of the city's fleet, of which 159 vehicles function on gas and 90 vehicles operate on diesel. The three tanks contain regular unleaded, Supra/E10 (10% ethanol 90% unleaded), and a 2% Biodiesel. In the 2005 FY Fleet Services purchased the following amounts of fuels.

<b>Totals</b>		<b>Amount</b>	<b>Perc</b>	<b>Price</b>
Unlead		23,001	22%	\$38,434
Ethanol		83,101	78%	\$149,876
Diesel		59,503	100%	\$109,320

Fleet Services collects data electronically from every vehicle that fuels at the municipal facility. This data has been imputed into many reports to explain the use of fuel within our fleet. In the 2005 FY Fleet Services purchased more E10 than unleaded at a rate of 78% to 22% respectfully. The trends of this ratio have been recorded over the past three years. According to the 2005 purchase report, E10 was purchased at \$1.717 per gallon on an average and regular unleaded was purchased at an average of \$1.714 per gallon with a difference of \$.003 per gallon.

Within the city's fleet eight vehicles are made pre-1986, six of these vehicles use E10. Of these vehicles 817.62 gallons of unleaded and 442.56 gallons of E10 are used. Many vehicles fuel up with a different mixture of fuel every other fill. The miscellaneous Parks Department accounts currently use 2,581.16 gallons of unleaded and 188 gallons of E10 of which the majority is used for small engines.

In June of 2005 Fleet Services replaced regular petroleum diesel with a 2% diesel blend and will continue the use of the biodiesel splash mix until a winter blend is needed. The replacement of biodiesel cost the city 1¢ more per gallon compared to regular petroleum diesel. The cost of biodiesel with an increased price of 1¢ per gallon for one year using the FY 2005 gallons used amounts would be \$595.03 more than the purchase of regular diesel a year. Routine maintenance including the replacement of fuel filters has created no problems in any vehicles thus far. This fuel can be used in all diesel engines of the city's fleet.

The Public Works Department's Waste Water Treatment Plant and Solid Waste have separate fuel tanks on site for greater efficiency. Together these divisions use 56,849 gallons of on-road diesel and 36,725 gallons of off-road diesel as well as 725 gallons of ethanol. According to Bud

Buettner, Assistant Public Works Director these divisions are scheduled to use biodiesel in all of their diesel equipment in the spring of 2006.

The City of Grand Island consumes a total of 83,826 gallons of ethanol, 23,001 gallons of regular unleaded, 21,000 gallons of biodiesel, and 132,077 gallons of On-Road/Off-Road diesel.

In the 2006 FY the City of Grand Island municipality will purchase 16 gas engine vehicles and three diesel engine vehicles. Between the FY 2006 and FY 2009 various departments are scheduled to purchase 62 regular gas engine vehicles and 19 diesel engine vehicles. The majority of these vehicles will replace older vehicles or fill a needed vehicle position. The police department will purchase six vehicles a year to keep up with the demand of the police department.

The following Resolution was adopted March 8, 1993. According to the resolution gasohol should be the preferred fuel for use in City-owned motor vehicles.

RESOLUTION 93-020

WHEREAS, city vehicles use approximately 106,000 gallons of fuel annually; and

WHEREAS, the use of gasohol provides a significant reduction of harmful exhaust emissions from motor vehicles; and

WHEREAS, the environmental benefits of gasohol use currently outweigh the increased cost over regular unleaded fuel;

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND COUNCIL OF THE CITY OF GRAND ISLAND, NEBRASKA, that gasohol shall be the preferred fuel for use in the City-owned motor vehicles equipped to use unleaded fuels.

...

Adopted by the City Council of the City of Grand Island, Nebraska, March 8, 1993.



*Cindy K. Cartwright*  
Cindy K. Cartwright, City Clerk

Currently 15 of the 159 vehicles that fuel at the Fleet Services facility do not consume E10, or 11% of the fleet does not use E10. However, not all of the 89% of E10 users use E10 100% of the time. In fact, 22,183.38 gallons of unleaded fuel used by 128 post 1986 vehicles have the capability of using E10.

## **Recommendation for the City of Grand Island fleet**

The City of Grand Island Administration recommends the following criteria for the municipal fleet.

### **Recommendation 1**

Mandate all post-1986 vehicles within the municipal owned fleet burn **only E10**.

The City of Grand Island utilized 83,826 gallons of E10 and 23,001 gallons of regular unleaded in the 2004-05 FY. A mandate of all municipally owned vehicles to **only use E10 when applicable**, would result in the following:

- Fleet Services would not have enough demand to keep unleaded on hand. A reserve of unleaded fuel only consumed by the Parks Department's small engine fleet and two pre-1986 vehicles would cause the fuel to go bad over a period of time.
- The two 10,000 gallon tanks of fuel will be converted as E10 tanks.
- A smaller separate tank could be purchased for unleaded engines. This would only be required if the Parks Department small engine fleet is exempt from the E10 mandate.
  - Parks Maintenance small engine fleet utilizes 2,500 gallons of unleaded fuel per year. The purchase of a 500 gallon fuel tank and pump could be obtained and installed for \$9,000.
- Unleaded engines would have to purchase fuel from non-municipal filling stations if a tank is not purchased. Federal and State tax credit on fuel could be lost. Last year small engines and pre-1986 vehicles used 2,810 gallons of fuel. Taxes lost on these dollars would be \$2,285.

A conversion of 25% regular unleaded fuel to E10 would cost an additional \$264.73 according to the 2004-05 purchasing data. The price difference is calculated at the same purchasing times of ethanol and unleaded.

The conversion of 23,001 gallons of unleaded fuel per year to E10 will also cost the City \$600.00 more in fuel economy. However more dollars will be created locally by using a domestic, renewable product. Ethanol products burn cleaner, enhance engine performance, prevent engine deposits, and reduce emissions.

### **Recommendation 2**

Require departments to purchase Fuel Flex Vehicles/Alternative Fuel Vehicles when available from state bid. FFV/AFV must meet the requirements of the application set forth by the department. When the municipal fleet has obtained a fleet of 25% FFV/AFV the expectation of purchasing/converting an E85 tank and pump should be examined for Fleet Services.

FFV/AFV have the ability to burn regular unleaded and ethanol mixtures of E10 to E85. The State increases the number of these special vehicles each year at little or no additional cost. This years state bid will include many sedans currently used by our municipality and half ton pickups. There are many incentives that will pay for a portion of FFV/AFV fleets and programs for municipalities.

**Recommendation 3**

Mandate that all summer blends of on/off Road diesel fuel contain a biodiesel splash blend of 4% but not greater than 5%.

In the spring of 2006 the entire municipal fleet will be using a splash blend of 2% biodiesel. A recommended increase of a 4% (not to exceed 5%) blend of biodiesel would increase lubricity, efficiency, engine life, and environmental gains.

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# Fuel Purchases for the Municipal Garage

Fiscal Year 04 - 05

Date      9/29/04    11/2/04    12/6/04    1/4/05    2/3/05    3/1/05    4/1/05    5/3/05    6/2/05    6/30/05    7/28/05    8/31/05

Notes

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Unlead		\$1,903	\$1,705	\$1,650	\$1,892	\$1,936	\$2,156	\$1,980	\$1,991	\$2,123	\$2,145	\$2,761
Amount	4701		5200			4700		3000	3000	2400		
Per Gal.	\$1.636		\$1.410			\$1.679		\$1.800	\$1.831	\$1.928		
Total \$	\$ 7,691		\$ 7,332			\$ 7,891		\$ 5,400	\$ 5,493	\$ 4,627		
												\$1,714

Ethanol		\$1,903	\$1,705	\$1,650	\$1,892	\$1,936	\$2,156	\$1,980	\$1,991	\$2,123	\$2,145	\$2,761
Amount	7600	7099	7500	6400	6900	5900	7000	6998	7002	7102	7100	6500
Per Gal.	\$1.667	\$1.665	\$1.483	\$1.434	\$1.650	\$1.675	\$1.925	\$1.757	\$1.803	\$1.916	\$1.927	\$2,790
Total \$	\$12,669	\$11,820	\$11,123	\$ 9,178	\$11,385	\$ 9,882	\$ 13,475	\$ 12,295	\$ 12,625	\$ 13,607	\$ 13,682	\$ 18,135
												\$1,717

Diesel		\$1,980	\$1,727	\$1,727	\$1,903	\$2,046	\$2,288	\$2,035	\$2,112	\$2,244	\$2,255	\$2,662
Amount	5100	5501	4901	3200	6800	3200	4000	5000	6000	5201	7600	3000
Per Gal.	\$1.720	\$1.745	\$1.482	\$1.499	\$1.660	\$1.843	\$1.997	\$1.855	\$1.918	\$2.037	\$1.962	\$2,476
Total \$	\$ 8,772	\$ 9,599	\$ 7,263	\$ 4,797	\$11,288	\$ 5,897	\$ 7,988	\$ 9,275	\$ 11,508	\$ 10,594	\$ 14,911	\$ 7,428

Month												
Total	\$29,132	\$21,419	\$25,718	\$13,975	\$22,673	\$23,670	\$21,463	\$26,970	\$29,626	\$28,829	\$28,593	\$25,563

Fiscal Year Total      \$297,630

Totals	Amount	Perc	Price
Unlead	23,001	22%	\$38,434
Ethanol	83,101	78%	\$149,876
Diesel	59,503	100%	\$109,320

### Diesel Vehicles Fueled at the City Shop

Department	Year	Make	Diesel	Cost
208	2001	Ford F-350	349.48	\$ 683.57
211	1996	IH 4700	180.30	\$ 329.04
212	1999	GMC C3500	500.44	\$ 1,003.75
213	1995	IH 4700	91.87	\$ 186.65
217	2001	IH 4700	390.49	\$ 760.90
218	2002	IH 4700	388.93	\$ 765.80
219	2002	IH 4700	355.75	\$ 659.87
220	1995	IH 4700	594.98	\$ 1,185.44
221	2001	Sterling LT 7500	1,572.37	\$ 3,097.00
222	1995	IH 4900	674.70	\$ 1,309.09
223	1996	GMC TOPKICK7000	1,138.34	\$ 2,244.66
224	1996	GMC TOPKICK7000	856.50	\$ 1,727.30
225	1996	IH 4700	165.61	\$ 298.50
226	2003	GMC C7500	144.59	\$ 261.44
227	1995	IH 4700	146.01	\$ 263.87
228	2001	Sterling LT 7500	1,638.23	\$ 3,324.74
229	2003	GMC C8500	1,356.89	\$ 2,702.91
230	1975	CAT 120G	491.52	\$ 862.05
231	2002	Volvo G736VHP	2,021.92	\$ 3,915.77
232	1980	CAT 120G	1,404.35	\$ 2,679.60
233	2005	Bobcat S150	161.71	\$ 348.33
234	1975	Cat 120G	153.55	\$ 272.66
235	2000	NW Holland LW170	793.29	\$ 1,561.30
236	1995	Case 621-b	646.25	\$ 1,285.64
237	1998	Bobcat 753	215.47	\$ 427.42
238	1998	Case 721b	856.55	\$ 1,654.13
239	1991	Grade All G660e	90.87	\$ 186.92
241	2004	GMC T7500	506.50	\$ 1,086.85
242	1997	Elgin Pelican	518.21	\$ 1,016.23
243	2000	Elgin Pelican	1,317.57	\$ 2,654.24
244	1993	Elgin Pelican	1,086.66	\$ 2,206.95
245	2000	Case CX90	771.08	\$ 1,588.03
246	2003	Elgin Pelican	1,312.97	\$ 2,652.06
247	2004	NW Holland TS100a	849.58	\$ 1,759.77
248	2005	TEREX TX760B	226.77	\$ 483.26
249	1999	John Deer 5210	477.68	\$ 994.92
251	2003	NW Holland Ts110	1,340.58	\$ 2,720.02
259	1997	Bartco BM90	253.66	\$ 501.63
260	2004	Ingersoll P185WJD	129.96	\$ 275.62
262	2000	Leroi !186DJE	6.82	\$ 11.85
263	2003	Ingersoll P185WJD	191.92	\$ 382.26
275	2004	Hatz 1db1z	57.81	\$ 126.82
290	1980	Root 936	130.39	\$ 225.18
337	1995	Chevrolet C3500	119.63	\$ 236.95
398	1991	GMC Top Kick	60.85	\$ 121.65
521	2003	Ford E450 Ambulance	1,919.19	\$ 3,805.08
522	2001	Ford E450 Ambulance	1,856.88	\$ 3,700.66
523	2000	Ford E450 Ambulance	671.52	\$ 1,363.17
524	2000	Ford E450 Ambulance	685.63	\$ 1,343.36
526	1992	Ford E350 Ambulance	22.68	\$ 43.78
527	1993	Ford E-350 Ambulance	128.34	\$ 262.64



528	1995	Ford E350 Ambulance	60.24	\$	120.31
541	1990	Ford C800	166.55	\$	328.96
544	2000	Freightlner F180	1,191.75	\$	2,382.51
545	1987	Ford F800	70.82	\$	141.02
547	1999	Freightlner F170	855.27	\$	1,711.10
548	1995	Freightlner Unknown	1,029.99	\$	2,059.51
551	2003	Ford F350	122.05	\$	242.54
572	2000	E-One Ladder	967.89	\$	1,954.40
581	1997	Freightlner F170	1,091.64	\$	2,164.80
582	2002	Ford F550	90.58	\$	180.76
640	1996	IH 4700	1,108.83	\$	2,194.03
789	1975	John Deer 500C	127.02	\$	237.50
904	2004	Ford F250	1,108.68	\$	2,195.98
907	1997	Ford F800	215.57	\$	425.54
920	1999	John Deere 410E	443.62	\$	864.03
921	2004	Ford F250	522.75	\$	1,043.19
1206	1995	IH 4700	721.36	\$	1,432.76
1503	2000	Vermeer 1230	572.59	\$	1,150.03
1541	2005	Freightlnr M2106	739.67	\$	1,526.26
1545	1999	CP Unkown	739.67	\$	1,526.26
1551	2001	IH 4900	2,076.58	\$	4,130.97
1554	2000	IH 4900	896.36	\$	1,797.87
1555	2004	Freightlnr F180	1,195.11	\$	2,393.15
1556	1996	Ford F800	98.55	\$	197.32
1559	1999	IH 4900	869.87	\$	1,747.67
1561	1996	Ford F800	781.03	\$	1,569.77
1562	2002	Ford F550	1,135.56	\$	2,276.40
1563	2002	Freightlnr F170	565.30	\$	1,122.00
1569	1993	IH 4900	451.51	\$	895.46
1573	1998	IH 4900	970.28	\$	1,945.11
1574	2003	SDP 2500	4.85	\$	9.30
1577	2002	Freightlnr FL80	817.60	\$	1,662.96
1600	1996	Ford 675D Turbo	252.82	\$	488.39
1602	1991	CP 185	54.14	\$	106.63
1605	1994	Ditch Witc 5110	82.26	\$	163.92
1609	2002	Ditch Witc FX30	26.65	\$	52.73
1615	2002	Bobcat S185 Turbo	228.78	\$	445.14
1649	2004	Sterling LT 7500	328.89	\$	678.95
1678	2003	IH 7600	741.98	\$	1,436.29
1679	2004	Ford F250	596.45	\$	1,186.78
Old 241 04	1992	Ford Vac All	155.02	\$	269.42
			56,299.97	\$	112,019.05

Department	Year	Make	Diesel	Cost
199 Utilities	2001	De0partment Mis	330.16	\$ 661.38
4 City Main	2000	Department, Misc	8.13	\$ 14.45
299 Street	2001	Department, Misc	1,422.39	\$ 2,926.33
399 Parks	2000	Department, Misc	4,166.26	\$ 8,635.83
599 Fire	2000	Department, Misc	26.85	\$ 56.46
			5,953.79	\$ 12,294.45

<b>Total</b>			<b>62,253.76</b>	<b>\$</b>	<b>124,313.50</b>
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Department	Year	Make	Unleaded Year			
			Unleaded	Cost	Ethanol	Cost
	240	1970 IH Unkown	59.74	\$ 112.13	0.00	\$ -
	1674	1970 Ford F750	99.65	\$ 182.84	27.89	\$ 50.89
	203	1977 Ford F-600	101.61	\$ 199.94	0.00	\$ -
	1565	1979 Ford F700	162.18	\$ 307.40	80.20	\$ 153.90
	860	1981 Chevrolet G30	0.00	\$ -	62.63	\$ 118.21
	1666	1981 Ford F606	205.43	\$ 379.17	182.92	\$ 356.24
Old 082 05	1984	F250	124.13	\$ 227.62	7.04	\$ 12.24
	606	1985 Dodge Ram 1500	16.54	\$ 32.77	13.73	\$ 29.45
	641	1986 GMC S10	48.34	\$ 92.87	68.15	\$ 131.83
	391	1987 Ford Bronco	0.00	\$ -	116.05	\$ 226.61
	908	1987 Ford F350	319.74	\$ 637.10	130.33	\$ 256.18
	339	1988 Toyota ½T Pickup	147.27	\$ 288.23	101.85	\$ 199.09
	336	1990 Toyota Unknown	229.60	\$ 453.09	0.00	\$ -
	205	1991 Ford F150	57.67	\$ 117.00	356.32	\$ 668.97
	5	1992 Ford F-150	45.96	\$ 92.91	11.14	\$ 24.02
	310	1992 Chevrolet S-10	0.00	\$ -	85.12	\$ 157.10
	332	1992 Chevrolet 3500	108.97	\$ 212.09	256.84	\$ 493.03
	1870	1992 Chevrolet S10	89.96	\$ 177.68	260.76	\$ 496.42
Old 857 05	1992	Chevrolet Cavalier	73.92	\$ 128.85	14.71	\$ 27.99
	389	1993 GMC ½T Pickup	89.14	\$ 177.98	197.00	\$ 383.58
	390	1993 GMC ½T Pickup	123.96	\$ 231.42	298.50	\$ 584.30
	566	1993 Ford Bronco	56.71	\$ 97.96	80.02	\$ 150.70
	825	1993 Dodge Caravan	26.35	\$ 52.99	188.14	\$ 367.03
	1667	1993 Ford F250	49.40	\$ 99.07	428.64	\$ 813.35
	304	1994 Ford F-150	462.82	\$ 901.93	0.00	\$ -
	1053	1994 Chevrolet 1500	52.35	\$ 108.34	754.83	\$ 1,463.37
	1672	1994 Ford F250	539.51	\$ 1,032.53	36.53	\$ 69.20
	1875	1994 Plymouth Acclaim	45.96	\$ 90.62	46.59	\$ 88.94
	330	1995 GMC 1500	28.02	\$ 60.41	370.34	\$ 705.43
	837	1995 Toyota Corolla	0.00	\$ -	10.07	\$ 21.60
Old 308 05	1995	Chevrolet Caprice	30.18	\$ 54.85	38.18	\$ 69.19
	257	1996 CrAFCO 200	42.12	\$ 83.63	0.00	\$ -
	301	1996 GMC Sonoma	13.54	\$ 29.04	638.00	\$ 1,235.49
	506	1996 Chevrolet Corsica	25.33	\$ 42.48	230.03	\$ 445.47
	509	1996 Chevrolet Corsica	221.88	\$ 405.28	126.41	\$ 249.14
	833	1996 Dodge Dakota	0.00	\$ -	7.82	\$ 15.14
	1207	1996 Ford F700	31.19	\$ 51.46	0.00	\$ -
	1301	1996 GMC 1500	714.30	\$ 1,366.14	88.07	\$ 171.55
	1876	1996 Chevrolet Suburban	515.77	\$ 990.70	0.00	\$ -
	214	1997 GMC, F9370	842.52	\$ 1,601.24	0.00	\$ -
	838	1997 Ford F-250	491.25	\$ 936.23	110.31	\$ 209.70
	853	1997 Chevrolet Cavalier	0.00	\$ -	130.62	\$ 249.53
	903	1997 GMC C30	302.98	\$ 574.09	73.74	\$ 136.54
	906	1997 Chevrolet ¾T Pickup	344.41	\$ 659.99	503.81	\$ 978.18
	1504	1997 Vermeer 630b	64.77	\$ 125.24	2.20	\$ 4.38
	10	1998 Ford Crown Vic	39.96	\$ 79.95	8.33	\$ 16.49
	209	1998 Chevrolet ½T Pickup	12.52	\$ 26.86	914.35	\$ 1,746.29
	392	1998 Chevrolet K2500	26.00	\$ 51.77	157.11	\$ 307.56

505	1998	Isuzu 1/2T Pickup	183.45	\$	354.93	217.60	\$	412.90
621	1998	Dodge Ram 1500	129.30	\$	239.49	1,482.98	\$	2,830.24
905	1998	Dodge Ram 2500	104.49	\$	203.59	1,261.48	\$	2,409.51
1042	1998	Ford Ranger	59.66	\$	114.73	851.37	\$	1,600.11
1064	1998	Ford Ranger	7.03	\$	12.22	866.75	\$	1,667.85
1300	1998	Chevrolet K1500	126.74	\$	244.84	418.21	\$	801.74
1302	1998	GMC 1/2T Pickup	381.45	\$	736.74	132.52	\$	250.21
1660	1998	Ford F15092.43	92.43	\$	162.03	609.82	\$	1,172.51
1683	1998	GMC K2500	225.47	\$	416.14	182..20	\$	356.00
1899	1998	Ford F150	147.74	\$	272.88	753.50	\$	1,471.12
201	1999	Ford F-150	582.57	\$	1,121.41	16.65	\$	31.50
204	1999	Ford F-150	1,061.63	\$	2,037.50	66.58	\$	115.90
210	1999	Ford F-150	319.78	\$	625.04	96.80	\$	187.96
561	1999	Ford Taurus	193.93	\$	371.11	31.73	\$	60.71
602	1999	Ford Taurus	252.80	\$	488.76	32.32	\$	64.60
Old 816 05	1999	Ford Crown Vic	53.37	\$	95.62	1,241.35	\$	2,238.55
258	2000	CRAFCO 200	60.45	\$	119.68	0.00	\$	-
272	2000	Northstar 2	1.02	\$	1.68	0.00	\$	-
393	2000	Chevrolet 1500	104.91	\$	217.02	269.63	\$	497.87
394	2000	Chevrolet 1500	0.00	\$	-	342.21	\$	647.31
500	2000	Chevrolet Lumina	5.01	\$	10.75	313.21	\$	600.27
507	2000	Chevrolet Lumina	210.90	\$	407.69	12.01	\$	23.91
564	2000	Chevrolet Suburban	488.17	\$	926.41	160.26	\$	321.24
607	2000	Chevrolet Lumina	224.70	\$	437.42	73.77	\$	145.82
832	2000	Chevrolet S10	26.35	\$	52.46	23.53	\$	44.46
850	2000	Chevrolet Impala	7.04	\$	13.44	414.80	\$	811.01
851	2000	Ford F150	15.97	\$	30.62	416.50	\$	788.39
899	2000	Police Department	27.17	\$	53.80	87.44	\$	170.99
902	2000	dodge Ram 2500	215.35	\$	419.63	829.49	\$	1,589.43
1303	2000	GMC K2500	520.68	\$	999.89	254.82	\$	494.58
1884	2000	Ford Explorer	299.16	\$	583.65	89.90	\$	169.40
202	2001	Dodge Ram 1500	79.34	\$	166.61	1,004.48	\$	1,912.17
215	2001	Dodge Ram 1500	46.16	\$	97.95	937.48	\$	1,767.52
256	2001	Chevrolet S10	0.00	\$	-	513.58	\$	985.98
303	2001	Dodge Ram 1500	0.00	\$	-	477.95	\$	931.56
331	2001	Dodge Dakota	0.00	\$	-	135.31	\$	270.70
333	2001	Dodge Ram 1500	92.29	\$	177.13	287.70	\$	562.22
335	2001	Ford F-350	113.85	\$	227.62	284.85	\$	551.30
338	2001	Dodge Dakota	24.30	\$	46.84	397.82	\$	769.42
361	2001	Ford Aerostar	88.66	\$	177.56	50.71	\$	85.64
502	2001	Chevrolet Lumina	0.00	\$	-	300.86	\$	574.28
601	2001	Chevrolet Lumina	0.00	\$	-	245.36	\$	463.51
623	2001	Dodge Ram 1500	897.26	\$	1,724.34	402.71	\$	758.33
818	2001	Ford Crown Vic	51.63	\$	101.43	213.40	\$	414.73
831	2001	Chevrolet Malibu	45.66	\$	93.95	331.21	\$	601.54
834	2001	GMC Van	0.00	\$	-	51.76	\$	100.91
855	2001	Chevrolet Impala	0.00	\$	-	253.42	\$	483.72
901	2001	dodge Ram 1500	0.00	\$	-	422.50	\$	812.01
1052	2001	Chevrolet S10	379.95	\$	728.38	474.90	\$	909.20
1058	2001	Chevrolet Malibu	8.12	\$	15.72	323.76	\$	613.52

1557	2001	Ford F150	174.21	\$	321.14	674.81	\$	1,306.44
Old 852 04	2001	Chevrolet Impala	0.00	\$	-	9.49	\$	16.49
258	2002	Chevrolet Impala	9.03	\$	16.99	469.14	\$	897.86
259	2002	Chevrolet Impala	0.00	\$	-	585.62	\$	1,129.32
308	2002	Chevrolet Impala	64.12	\$	119.21	242.07	\$	459.03
388	2002	Chevrolet Impala	70.28	\$	141.13	108.47	\$	208.52
395	2002	Chevrolet 2500	50.97	\$	96.42	614.78	\$	1,216.04
563	2002	Ford Explorer	17.53	\$	33.94	318.14	\$	606.06
565	2002	Ford Explorer	256.17	\$	486.61	14.42	\$	28.55
608	2002	Chevrolet Impala	27.47	\$	50.78	423.54	\$	821.51
802	2002	Ford Crown Vic	0.00	\$	-	396.47	\$	742.92
815	2002	Ford Crown Vic	36.10	\$	67.45	1,418.57	\$	2,710.64
829	2002	Chevrolet Camaro	10.42	\$	17.77	636.22	\$	1,218.49
862	2002	Chevrolet Impala	0.00	\$	-	264.03	\$	502.20
864	2002	Chevrolet S10	0.00	\$	-	516.02	\$	993.43
866	2002	Chevrolet ½T Pickup	0.00	\$	-	461.47	\$	886.99
900	2002	Ford F150	610.45	\$	1,172.47	0.00	\$	-
1050	2002	Chevrolet Malibu	270.03	\$	515.53	0.00	\$	-
1208	2002	Chevrolet ½T Pickup	26.61	\$	52.98	0.00	\$	-
1686	2002	Ford F250	86.88	\$	149.02	600.90	\$	1,179.48
1880	2002	Chevrolet Malibu	69.28	\$	130.09	68.45	\$	136.22
1881	2002	Chevrolet Impala	256.67	\$	501.89	76.18	\$	148.61
1885	2002	Ford F250	446.76	\$	853.26	189.90	\$	365.74
Old 811 05	2002	Ford Crown Vic	0.00	\$	-	276.59	\$	499.17
Old 813 05	2002	Ford Crown Vic	0.00	\$	-	137.17	\$	246.30
Old 814 05	2002	Ford Crown Vic	0.00	\$	-	229.41	\$	415.41
Old 822 05	2002	Ford Crown Vic	0.00	\$	-	222.52	\$	404.47
396	2003	Chevrolet 1500	25.26	\$	43.90	239.65	\$	495.80
562	2003	Ford F150	371.60	\$	705.75	19.79	\$	34.40
800	2003	Ford Crown Vic	55.05	\$	98.22	1,955.40	\$	3,726.66
801	2003	Ford Crown Vic	34.96	\$	64.08	1,990.92	\$	3,815.24
806	2003	Ford Crown Vic	27.95	\$	50.46	1,692.13	\$	3,156.59
808	2003	Ford Crown Vic	55.08	\$	105.31	1,546.31	\$	2,884.56
809	2003	Ford Crown Vic	120.79	\$	219.72	2,051.38	\$	3,744.24
812	2003	Ford Crown Vic	60.38	\$	108.97	2,123.95	\$	3,924.15
819	2003	Ford Crown Vic	57.90	\$	109.69	2,062.50	\$	3,776.75
821	2003	Ford Crown Vic	24.33	\$	41.48	1,019.01	\$	1,949.04
1887	2003	Chevrolet 1500	543.96	\$	1,041.59	0.00	\$	-
206	2004	Chevrolet Silverado	844.69	\$	1,616.24	58.14	\$	112.47
207	2004	Chevrolet Silverado	555.85	\$	1,081.62	22.50	\$	44.55
256	2004	CRAFCO 200	9.52	\$	20.53	0.00	\$	-
334	2004	Chevrolet Silverado	0.00	\$	-	139.33	\$	274.85
403	2004	Chevrolet Silverado	36.32	\$	62.59	640.71	\$	1,220.88
501	2004	Chevrolet Impala	11.79	\$	221.21	99.34	\$	193.73
803	2004	Ford Crown Vic	162.81	\$	296.06	1,804.66	\$	3,483.77
804	2004	Frod Crown Vic	169.08	\$	312.17	3,319.91	\$	6,404.46
805	2004	Ford Crown Vic	158.01	\$	276.77	3,261.43	\$	6,253.99
807	2004	Ford Crown Vic	81.20	\$	152.22	2,217.81	\$	4,145.90
810	2004	Ford Crown Vic	96.93	\$	177.59	3,587.66	\$	6,869.73
817	2004	Ford Crown Vic	52.48	\$	93.17	2,910.16	\$	5,548.03

820	2004	Ford Crown Vic	90.75	\$ 169.52	3,102.66	\$ 5,945.02
835	2004	Chevrolet Impala	25.91	\$ 53.56	144.42	\$ 273.13
842	2004	Harley FLHPI	0.00	\$ -	10.56	\$ 20.44
843	2004	Harley FLHPI	7.12	\$ 13.44	414.80	\$ 811.01
852	2004	Chevrolet Impala	11.49	\$ 22.75	258.13	\$ 488.73
854	2004	Chevrolet Impala	8.69	\$ 18.64	506.27	\$ 977.92
865	2004	Chevrolet Impala	21.06	\$ 41.94	558.76	\$ 1,071.36
1040	2004	Ford F150	104.28	\$ 217.16	167.94	\$ 307.14
1688	2004	Ford F150	4.33	\$ 8.62	994.34	\$ 1,907.51
1889	2004	Ford F150	291.69	\$ 564.72	21.22	\$ 42.02
300	2005	Chevrolet Impala	13.22	\$ 26.18	83.10	\$ 169.96
811	2005	Ford Crown Vic	12.40	\$ 26.60	1,333.63	\$ 2,748.38
813	2005	Ford Crown Vic	7.45	\$ 16.06	1,670.54	\$ 3,423.66
814	2005	Ford Crown Vic	22.38	\$ 45.76	1,441.34	\$ 2,955.85
816	2005	Ford Crown Vic	6.89	\$ 13.64	1,508.26	\$ 3,073.15
822	2005	Ford Crown Vic	12.53	\$ 26.87	1,019.54	\$ 2,091.59
823	2005	Ford Crown Vic	21.17	\$ 44.20	855.97	\$ 1,741.47
863	2005	Chevrolet Colorado	0.00	\$ -	376.49	\$ 760.15
1571	2005	Chevrolet 1500	0.00	\$ -	181.31	\$ 369.33
1882	2005	Ford F250	135.01	\$ 277.74	104.14	\$ 206.84
216		Chevrolet 1500	441.78	\$ 851.60	27.62	\$ 59.55
			22,316.66	\$ 42,967.61	82,190.42	\$ 158,072.56

Department	Year	Make	Unleaded	Cost	Ethanol	Cost
4 City Main	2000	Department, Misc	35.37	\$ 64.41	0.00	\$ -
199 Utility	2001	Department Mis	185.25	\$ 358.38	185.21	\$ 371.17
299 Street	2001	Department, Misc	332.79	\$ 648.70	44.16	\$ 86.17
399 Parks	2000	Department, Misc	2,581.16	\$ 5,055.43	89.71	\$ 188.12
599 Fire	2000	Department, Misc	143.12	\$ 271.69	47.20	\$ 93.29
799	2000	Department Mis	0.00	\$ -	51.62	\$ 92.17
836 Police	2001	Unkown, Unkown	21.53	\$ 39.59	1,291.78	\$ 2,481.65
949	2000	Department Misc	56.68	\$ 103.18	0.00	\$ -
			\$ 3,355.90	\$ 6,541.38	\$ 1,709.68	\$ 3,312.57

**25,673 \$ 49,508.99 83,900 \$ 161,385.13**



# City of Grand Island

Tuesday, January 17, 2006

Study Session

## Item -2

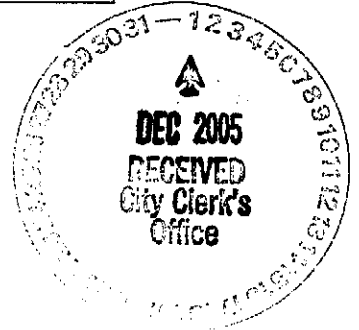
### Request by Connie Van Wie to Discuss Pool Facilities

*Connie Van Wie, #10 Kuester Lake Road has submitted a request to present information to the City Council concerning pool facilities for the City of Grand Island.*

Staff Contact: Connie Van Wie



## REQUEST FOR FUTURE AGENDA ITEM



If you have a specific topic that you would like the City Council to discuss at a future meeting, please list your name, address, telephone number, and the specific topic. The item will be reviewed and possibly scheduled for a future meeting, or forwarded to City staff for appropriate action.

Name: Connie Van Wie

Address: 10 Muester Lake Rd.

Telephone #: 382-3713

Date of Request: Dec. 6th.

Description of Requested Topic: Re: Pool facilities for city  
of G.I. (Update)

## To the City Council

Irene Abernethy and I met with the City Council in August regarding the lack of competitive pool facilities in the city. We were supposed to get back to the council with the cost to build an indoor competitive facility like the Grand Haven, MI pool, which I have seen.

In visiting with Kirk Alexander, I decided to wait until the YMCA board had their November meeting on the facility study for an auxiliary YMCA with a competitive pool.

We would like a few minutes of your time to discuss the following:

- A. The cost of building a competitive community indoor facility like the pool in Grand Haven, MI.
- B. Possible future plans for an auxiliary YMCA with a competitive indoor pool.
- C. New financial information on an outdoor 8 lane, 50 meter competitive pool to replace the Pier Park pool and to be put at the water park.
- D. Community interest for a full complement of services for Grand Island.

Thank you,



Connie Van Wie  
Irene Abernethy





# City of Grand Island

Tuesday, January 17, 2006

Study Session

## Item J1

### **Payments of Claims for the Period of December 21, 2005 through January 10, 2006**

*Due to computer problems before the January 10, 2006 City Council meeting, not all claims were included in the total submitted at the January 10, 2006 City Council meeting. In order to approve the remaining claims, the City Council will meet in Special Session immediately following the January 17, 2006 Study Session to approve the claims.*

*The remaining claims for the period of December 21, 2005 through January 10, 2006 for a total amount of \$618,724.71. A MOTION is in order.*

Staff Contact: RaNae Edwards