

THE NATURAL STEP  
FOR THE CITY OF SHAWANO  
WHAT WE COULD DO IN THE NEXT 5 YEARS OR SO AND WHAT WE  
WILL DO IN THE NEXT ONE YEAR

An Integrated Community Sustainability Plan

**Objectives**

1. Reduce energy use and carbon dioxide output by 25% by 2025.
2. In reducing energy consumption initially pick the low hanging fruit such as replacing incandescent light bulbs with LED bulbs and then develop a program and budget to reduce major energy waste such as in the Recreation Center.
3. Phase out use of incandescent light bulbs and any T-12 fluorescent light bulbs.
4. Implement the Integrated Community Sustainability Plan.
5. Conduct detailed energy audits on all City Building.
6. Conduct detailed energy audits on all Public Works electric motors.
7. Convert all City Vehicles to using renewable fuels.
8. Apply with Shawano County for an Energy Independent Grant to do more detail evaluation of energy inefficient buildings, electric motors and vehicles.

I... Energy for the City

**City Hall/Police Dept/Community Room** – Electrical, Water and Sewer Costs in 2008 - \$13,068

A. Electrical -

1. Lighting

a. Indoor

There are switched fluorescent light tubes in the City Hall, Community Room, Police Garage and hall ways. Some lights may remain on for 24 hours. Natural light maybe could replace during the day some fluorescent lighting.

Switched MEDTC light bulbs (Very Efficient) in the Police Station Offices

Motion sensors control bathrooms, work rooms and interview room fluorescent lights. Exit lights in the PD have Light Emitting Diode (LED) bulbs. The other Exit lights need LED bulbs. They should be hard wired with battery back-up.

*What we could do* – Change Exit light fixtures to include battery back-up and install LED bulbs in all Exit lights Evaluate which lights could be turned off during the day due to adequate natural light. What we will do in the next 12

months - Change Exit light fixtures to include battery back-up and install LED bulbs in all Exit lights Evaluate which lights could be turned off during the day due to adequate natural light.

b. Outdoor on Buildings

There are ten Fluorescent and LED lights controlled by a timer, motion sensor and light sensor.

*What we could do* – Control all the lights by motion sensor. What we will do in the next 12 months –Control as many lights as possible with motion sensor switches.

2. Equipment

a. Computers

There are 50 computers in numerous offices some of which are turned off when not used.

b. There are 3 ink cartridge printers one of which one can print both sides.

c. Machinery –

Two Copy Machines with one printing both sides

Refrigerator

Soda Machine – May not be necessary

*What we could do* – Turn all computers off at night. When replacing printers do so with cartridge style printers capable of printing both sides of the paper.

Replace the soda machine by placing soda in the refrigerator. What we will do

in the next 12 months - Turn all computers off at night. When replacing printers replace with printers that use cartridges and print both sides. Replace the soda machine by placing soda in the refrigerator

3. Other

Window blinds are used to regulate light and heat. *What we could do* –Work with the employees to regulate the blinds in a manner that saves energy. What we will do in the next 12 months –Empower the office staff to regulate the blinds in a manner to maximize the use of day light and save energy.

B. Heat/HVAC – Cost for heat only in 2008 was \$6,653.

The building is generally not well insulated. The west wall has no added insulation. The windows are not air tight. The front door is a single door opening directly to the elements.

The heating system for the main building is about 12 years old and efficient.

The air conditioning is not efficient. Set back thermostats are used in the building. The forced air heating in the two attached garages is not efficient.

*What we could do* –Conduct an energy audit of the building’s exterior and the 2 attached garages to determine specifically the energy needs of the building and specific location of additional insulation. If additional roof insulation is needed consider installing a hip roof, under which additional insulation can be installed. Replace the windows with energy efficient windows. Upgrade the air conditioning to a high energy efficiency rating. Use the air conditioning as little as possible. Install a second front door to reduce interior exposure to the outside. What we will do in the next 12 months –Conduct an energy use study of the building. Budget for a second front door to create an air lock and thus reduce energy loss. Apply for an Energy Independent Community Grant to do a detailed Energy Audit of the building.

**Public Works Garage – In 2008 Electric Costs were \$12, 657 and Heat Costs were \$14,698**

## A. Electrical

### 1. Lighting

#### a. Indoor

There are 33 fluorescent fixtures with 2 switches in each office and one switch in the hall ways and break room.

Breaker controlled Metal Halogen in the garage area – Not efficient and slow start up times. Building lit in part with natural light. Restrooms have switched fluorescent lights. Exit lights are currently not lit. *What we could do* –In offices used only occasionally install motion sensor switches. Replace the metal halogen bulbs with light tubes or LED bulbs. Install LED bulbs in the Exit lights. Install motion sensors in the bathrooms. What we will do in the next 12 months –Install motion sensor switches in seldom used rooms and bathrooms. Install LED bulbs in the Exit lights and garage area. Budget for the installation of light tubes.

#### b. Outdoor on Buildings

There are 4 Sodium Vapor lights controlled by light sensitive switch. *What we could do* –Place 2 of the lights on a motion sensor switch. What we will do in the next 12 months –Determine which of the lights can be placed on motion sensor switches and do so.

### 2. Equipment

#### a. 7 Computers

#### b. 1 Printer/copier/scanner and prints both sides

Machinery – Air compressor, welder, vehicle lift and standby generator for the garage door. *What we could do* –Turn machinery off when not used. Drain the compressor of air and moisture each evening. What we will do in the next 12 months - Turn machinery off when not used. Drain the compressor of air and moisture each evening.

### 3. Other

## B. Heat/HVAC

Garage is heated and air conditioned. Heat and air conditioning reduced at night, with forced air natural gas in the office and natural gas radiant heat set at 50 degrees in the garage area. Work area in the garage is enclosed and heated to a comfortable level separately with natural gas radiant. *What we could do* –Keep garage door open times to a minimum. Close any outdoor air entry into the building. Investigate a monetary return on installing additional insulation. What we will do in the next 12 months - Keep garage door open times to a minimum. Close any outdoor air entry into the building. Investigate a monetary return on installing additional insulation. Apply for an Energy Independent Community Grant to do a detailed Energy Audit of the building.

## Wells and Lift Stations

### A. Electrical

#### 1. Lighting

#### a. Indoor

Buildings and manholes have switched light bulbs. The buildings and manholes have motion sensors hooked to an entry alarm system.

#### b. Outdoor on Buildings

1 light is controlled by light sensor switch and another by a motion sensor switch.

*What we could do* –Control both lights by a motion sensor switch. What we will do in the next 12 months –Install motion sensor switch on the light without such a switch.

2. Equipment

a. Machinery

Numerous pumps move water and waste water. *What we could do* –For the water system the City could sponsor a water conservation program that includes low flow toilets, restricted shower heads, rain barrels, front loaded washing machines, etc. The City should also continually monitor water loss and periodically inspect for main leaks. To reduce lift pump electrical costs the residents and City should reduce water consumption, disconnect sump pumps from the sanitary sewer, fix sewer main clear water infiltration and install variable frequency drive pumps. What we will do in the next 12 months –the City should evaluate which of above mentioned approaches should be taken in addition to current approaches to reduce costs in these expensive operations. Apply for an Energy Independent Community Grant to do a detailed Energy Audit of the machinery.

B. Heat/HVAC – Electricity used to Power, Pump, Heat and Cool from January 1, 2008 to June 30, 2009 in Kilowatt Hours (Kwh’s) for the following buildings, wells and Lift Stations.

	Kwh’s for 18 months	Dollar Value per year
Lincoln Substation	19,577	1,214
SMU Office	235,113	14,586
Garage	1,152	71
Shamoco Bldg	64,884	4,025
Sewer Heater	5,392	334
Spirit of Shawano	1,552	96
Aarrow Liftstation	18,521	1,149
Ind Park #2	2,726	179
2nd Industrial	10,842	672
Center St Lift	64,199	3,982
Lieg & Water	1,688	104
W. Richmond Liftstation	46	2
5 <sup>TH</sup> & Franklin Liftstation	21,707	1,346
Goers Lift	14,097	874
River Pines	3,705	229
Bay Lakes Sewer Lift	6,026	373
River Heights	3,468	215
Fairview Lift	2,201	136
Well #9 Heater	173,486	10,763
Well #7 Heater	21,491	1,333
Well #6 Heater	2,012	124
Well #5 Heater	10,631	659
Pumphouse #8 Cooling	109,174	6,773
Pumphouse #7 Cooling	181,490	11,259
Pumphouse #6 Cooling	150,958	9,365
Pumphouse #5 Cooling	183,402	11,378
Reservoir Pumps	234,046	14,520
New Water tower Cooling	178,131	11,051

SMU/SLSD Interconnect	145	8
Fiber Optics	157	9
Fiber Street Light	781	48
New Goers Lift Station	2,440	<u>151</u>
Total		\$107,028

**Land Fill/Recycling Building – In 2008 Electric Costs were \$6,766 and Heat Costs were \$9, 225**

A. Electrical

1. Lighting

a. Indoor

There are 53 lights in total. The Tipping Floor has 16 HID lights controlled by a switch. The Baler building has 4 switched fluorescents and 10 switched HID lights. The Recycling area has 23 switched HID lights  
Two Exit lights have unknown bulbs  
Office has 2 switched fluorescent lights.

b. Outdoor on Buildings

9 lights of unknown type are controlled by light sensitive switch. *What we could do* –Investigate using motion sensors on as many lights as possible. What we will do in the next 12 months –Do investigate and then install motion sensor switches.

2. Equipment

a. A scale for weighting

b. Machinery

Bailing machine for recyclables is a large part of the operations. It has 100 HP electric motor and 2 conveyors with 3 HP electric motors. *What we could do* – Investigate the possibility of installing a more energy efficient motor. What we will do in the next 12 months –Evaluate the possibility of installing a more efficient motor.

3. Other

A study is being conducted to capture the methane gas from the landfill to generate electricity to be used to supplement the peak daily power demand. Another study is being conducted privately to place sewer sludge and animal waste in a digester to generate electricity.

B. Heat/HVAC

The building is heated by Liquid Petroleum (LP). Radiant heat is used in the bailing and recycling sections and forced air in the office area. *What we could do* –Install 7 day 7 day setback thermostats. What we will do in the next 12 months –Install 7 day 7 day setback thermostats. Apply for an Energy Independent Community Grant to do a detailed Energy Audit of the building and machinery.

**Recreation Center**

A. Electrical

1. Lighting Indoors

Outside entry (north) – (1) Halogen light 1000W, on/off switch

1 fixture – (1) bulb Photo Eye 150W H.P.S (by Co2 tank)

2 Exit light LED

1 fixture – (2) bulbs 60W each incandescent – Women Bathroom

- 1 fixture – (2) bulbs 60W each incandescent – Men Bathroom
- 1 fixture – (2) bulbs 60W each incandescent – Maintenance area2
- 2 fixtures – (1) bulbs 60W each incandescent – North entry
- 1 fixture – (2) bulbs 60W each incandescent – Woman Bathroom (lockers)
- 1 fixture – (2) bulbs 60W each incandescent – Men Bathroom (lockers)
- 13 fixtures – (1) bulb 400W metal halite – Pool lights
- 12 fixtures – (1) bulb 400W metal halite – Racquetball
- 2 fixtures – (2) bulbs 60W each incandescent – Basement stair lights
- 3 fixtures – (1) bulbs 60W each incandescent – Men showers
- 3 fixtures – (1) bulbs 60W each incandescent – Women showers
- 10 fixtures – (1) bulbs 60W each incandescent – basement near pool

*What we could do* –Place outside entry light on a 12 month timer. Replace Halogen light and maybe replace High Pressure Sodium (HPS) depending on the ballast efficiency with LED bulbs. Replace the 18 incandescent bulbs with LED or CFL bulbs. Control those lights with motion sensor switches where possible. Metal halide lights are good only if they have electric ballast otherwise replace if they can be replaced with LED. What we will do in the next 12 months –Install 12 month timer on entry light, Determine type of ballast on HPS lights. Replace if necessary with LED bulbs. Replace incandescent bulbs with LED. Install motion sensor switches where possible.

#### Lighting Outdoor on Buildings

- Outside lights – 4 on timers
- 1 fixture – 150W high pressure sodium
- 1 fixture – (2) bulbs 100W flood light
- 1 fixture – (1) bulb 300W M.H.
- 1 fixture – (1) bulb Street light 100-150 H.P.S.

*What we could do* –Replace incandescent and metal Halite lights with LED bulbs. Check ballast on HPS and replace with LED if not electric ballast. What we will do in the next 12 months - Replace incandescent and metal Halite lights with LED bulbs. Check ballast on HPS and replace with LED if not electric ballast.

## 2. Equipment

### 3. Other

#### Basement

Houses pool equipment and heating equipment. Lights are switched fluorescent. *What we could do* –Install a motion sensor on the fluorescent lights. What we will do in the next 12 months - Install a motion sensor on the fluorescent lights.

## B. Heat/HVAC

Recreation Building has a new natural gas forced air heating system. The building is cement block and poorly insulated. Pool area is to be maintained at 86 degrees and the pool water at 84 degrees. Some winter days the pool assists in heating the indoor air. The facility has 2 set-back thermometers. *What we could do* –Conduct a complete energy audit of the building with goal of substantially reducing energy costs. Possibly reopen covered windows on the east and west sides of the building for day lighting. Install energy efficient windows. Install light tubes to bring natural light into more of the building. What we will do in the next 12 months –Conduct a complete energy audit of the building and budget the recommended improvements. Apply for an Energy Independent Community Grant to do a detailed Energy Audit of the building.

## Park Department Garages.

### A. Electrical and Heating

#### 1. Lighting and Heating-

##### Main Garage

- (1) Security light 70w High pressure sodium
- (12) Fluorescent fixtures
- (10) 40w T6 bulbs
- (1) 40w T8 = 2 bulbs
- (2) 60w incandescent

##### Small Garage

- (2) 60w incandescent
- (1) 70w High pressure sodium

##### Old Garage

- (2) Fluorescent fixtures
- (4) 40w bulbs
- (1) 60w incandescent
- Forced air natural gas furnace – Carrier Brand
- Insulated doors and fiberglass wall and ceiling insulation

*What we could do* –Replace the HPS lights with LEDs if not on electric ballast, replace the incandescent bulbs with CFL bulbs. Install a set-back thermostat. What we will do in the next 12 months –Replace the HPS bulbs if appropriate, Replace the incandescent bulb and install a 7 day setback thermostat.

- 2. Equipment - None
- 3. Other

## Park Shelters

### A. Electrical

#### 1. Lighting

##### **Memorial Shelter**

##### Bathroom lights

- Girls:(2) Incandescent Fixture
- Boys: Incandescent Fixture

##### Shelter (70w) (8) Incandescent Fixtures

##### Security light 70w High pressure sodium

##### Baseball diamond: 1500watts M.H. – (48) Fixture and bulbs

##### Volleyball courts – (12) Fixture and bulbs

##### Basketball courts – (5) Fixture and bulbs, timer switch

##### Softball diamond – (26) Fixture and bulbs

##### Little diamond – (24) Fixture and bulbs

##### Light sensitive light by baseball diamond

##### 60 watts Incandescent near bathroom

##### 60 watts Incandescent near bathroom diamond

*What we could do* –Replace the Incandescent bulbs with LED or CFL bulbs. Investigate installing more energy efficient ball diamond lights. Replace High Pressure Sodium bulb with LED if not utilizing electronic ballast.. What we will do in the next 12 months –Replace all

incandescent bulbs with LED and replace HPS lights if appropriate. Investigate more efficient ball diamond lights and budget for their replacement if appropriate.

#### Main Garage

- (1) Security light 70w High pressure sodium
- (12) Fluorescent fixtures
- (10) 40w T8 bulbs
- (1) 40w T8 = 2 bulbs
- (2) 60w incandescent

#### Small Garage

- (2) 60w incandescent
- (1) 70w High pressure sodium

#### Old Garage

- (2) Fluorescent fixtures
- (4) 40w bulbs
- (1) 60w incandescent
- Forced air natural gas furnace – Carrier Brand
- Insulated doors and fiberglass wall and ceiling insulation

*What we could do at the garages* –Replace the High Pressure Sodium lights(HPS) with LEDs if not operating with electronic ballast, replace the incandescent bulbs with CFL bulbs. Install a set-back thermostat. What we will do in the next 12 months - Replace all incandescent bulbs with LED and replace HPS lights if appropriate. Install a set-back thermostat.

#### **Martzke Park**

- Canopy lights – (2) 60W incandescent
  - (4) 70W high pressure sodium
  - 3 Security lights on light sensitive 175 watts Metal Halite
  - Concession area - 6 fixtures 3 bulbs, total (18) 40W T8s
    - (1) Exterior light (LED)
  - Storage Area – 3 fixtures 2 bulbs, total (6) 40w T8s
  - Women Bathroom – 3 Fixtures (6) bulbs total 2 in each fixture 40W T8s, motion sensor switches
  - Maintenance room – 2 fixtures (4) bulbs 40W T8s
    - Hot water heater electric 40 gallon 45watts element
  - Men bathroom – 3 fixtures 2 bulbs each, Total (6) bulbs 40W T8s, motion sensitive switch.
  - Baseball diamond – Musco lights 58 lights 1500watts M.H. each
  - Garage – (6) 60W incandescent
  - Score booth – (1) 60W incandescent
- What we could do* –Replace incandescent and high pressure sodium lights with LEDs. Replace Metal Halites with LED bulbs investigate which if any of the lights could be placed on a timer to turn off overnight. Install a motion sensor switch in the storage area. What we will do in the next 12 months –Replace the Metal Halite lights and install a motion sensor switch. Investigate if any of the lights could be turned off over night.

#### **Arlington Park**

- Men bathroom – (1) fixture, (1) 60W incandescent

Women bathroom – (1) fixture, (1) 60W incandescent  
Shelter area – (4) fixtures, (2) bulbs each; Total (8) 60W incandescent  
Storage area – (1) 60W incandescent  
*What we could do* –Replace all incandescent with LEDs except in the storage area install a CFL. Install motion sensor switches in the bathrooms. What we will do in the next 12 months  
–Replace the incandescent as appropriate. Install motion sensor switches in the bathrooms.

### **Kuckuck Park**

Men bathroom – (1) fixture, (2) 60W incandescent  
Women bathroom – (1) fixture, (2) 60W incandescent  
Maintenance room – (1) 60W incandescent  
Shelter area – (3) fixtures, (2) bulbs each 60W incandescent  
(1) Fixture (1) round fluorescent  
Dusk and Dawn Lights ?  
*What we could do* –Replace all incandescent with LEDs except in the storage area install a CFL. Install motion sensor switches in the bathrooms. What we will do in the next 12 months  
- Replace the incandescent as appropriate. Install motion sensor switches in the bathrooms.

### **Huckleberry Harbor**

Canopy – (4) lights 70W metal arc  
Security Lights – 175W Metal Halite Light sensitive switch  
Kitchen area – (6) fixtures 3 bulbs, total (18) 40W T8s  
Exit light – LED  
Women Bathroom – (3) fixtures (2) bulbs each, Total (6) 40W T8s  
Motion sensor ceiling  
Men Bathroom – (3) fixtures (2) bulbs each, Total (6) 40W T8s  
Motion sensor ceiling  
Maintenance room – (2) light fixtures (2) bulbs, total (4) 40W T8s  
Hot water heater electric 30 gal, Element 45W upper/lower element  
*What we could do* –Replace Metal Halite bulbs with LEDs. What we will do in the next 12 months –Replace the Metal Halite lights with LEDs.

### **Eberteiu Park**

Security lights – (3) 175W M.H. on light sensitive switch  
Canopy – (6) 70W Metal arc  
Men Bathroom – (3) fixtures (2) bulbs each, Total (6) 40W T8s  
Motion sensor ceiling  
Women Bathroom – (3) fixtures (2) bulbs each, Total (6) 40W T8s  
Motion sensor ceiling  
Maintenance room – (2) light fixtures (2) bulbs, total (4) 40W T8s  
Motion sensor  
Hot water heater electric 30 gal, Element 45W upper/lower  
Storage area – (3) fixtures (2) bulbs, Total (6) 40W T8s  
Motion sensor  
Kitchen Area – (6) fixtures (3) bulbs, Total 18 bulbs 40W T8s

Exit LED

*What we could do* –Replace Metal Halite bulbs with LEDs.

2. Equipment
3. Other – Water Irrigation at 3 parks. Ebertein Park has a rain sensor, while Memorial and Martzki must be operated manually.

*What we could do* –Install rain sensor switches at Memorial and Martzke. What we will do in the next 12 months –Budget to install Rain Sensor switches at Memorial and Martzke.

**Storage Building/Ice Shack/Wadding Pool/Ball Diamond**

A. Electrical

1. Lighting -

a. Indoor

Storage building and Ice shack have switched incandescent lights.

b. Outdoor on Buildings

Wading pool has dawn to dusk Metal Halite security light.

2. Equipment

3. Other

Ball Diamonds

Lighting demand is significant, even if used part of the year. Four ball diamonds are lit as are one basketball court and 2 sand volley ball courts.

**Fire Station – The building needs to be replaced rather than investing more money in an inefficient structure**

What we will do in the next 12 months –Budget for and seek grants to replace the existing Fire Station.

a. Electrical

1. Lighting

a. Indoor

There are switched fluorescent lights in the truck storage area, meeting room, gear storage and bathrooms.

Three fluorescent lights remain on 24 hours.

Exit lights of unknown type

b. Outdoor on Building

2. Equipment

3. Other

b. Heat/HVAC

Oldest part of the building is 80 years old and newest 35 years. Insulation has been added to the oldest part of the building. Truck storage area is heated by infrared tube heating. Smaller rooms are heated by 82% and 92% efficient furnaces powered by natural gas. Small rooms have air conditioner, but seldom used.

**Shawano Municipal Utilities (SMU) Main Utility Office and Storage Facility**

c. Electrical

1. Lighting

a. Indoor

On first floor there are switched fluorescent lights in the equipment storage area, computer server room and bathrooms.

On second floor there are switched fluorescent lights (T-8's or T-Super 8's) in the 4 offices. Restrooms are switched fluorescent lights. All interior lights turned off at night except hall lights.

Exit lights of unknown type

b. Outdoor on Building

There are four security lights of unknown type controlled by light sensor.

*What we could do* –Install motion sensor switches in the bathrooms, equipment room and computer room. Install LED bulbs in the Exit lights. Consider installing timer switches or motion sensor switches on some exterior lights.

Install a timer to operate the Bathroom exhaust fans at times the lights are not on. What we will do in the next 12 months - Install motion sensor switches in the bathrooms, equipment room and computer room. Install LED bulbs in the Exit lights. Consider installing timer switches or motion sensor switches on some exterior lights. Install a timer to operate the Bathroom exhaust fans at times the lights are not on.

2. Equipment

a. Twelve computers of which most turned off at night.

b. Printers

Five printers do a variety of tasks and use varies considerably. None of the printers print both sides.

c. Machinery

Two copy machines. One is seldom used and other has significant use and prints both sides. Copiers are left in “rest mode” when not in use.

3. Other

Two refrigerators are used. One is about 10 years old and the other 15 years.

*What we could do* –Replace all equipment with Energy Star equipment. Check the efficiency of the refrigerators, replace if not efficient. What we will do in the next 12 months –Check the efficiency of the refrigerators and budget for replacement if necessary.

d. Heating/HVAC

The building is heated with 3 natural gas forced air heaters, each on its own thermostat. The computer room has 2 wall mounted air conditioners. The balance of the building utilizes 3 zones, each with its own controls, to cool with central air. *What we could do* –Install 7 day setback thermostats. What we will do in the next 12 months –Install 7 day set back thermostats. Apply for an Energy Independent Community Grant to do a detailed Energy Audit of the building.

**SMU Two Garages**

e. Electrical

1. Lighting

a. Indoor

There are switched fluorescent lights in both buildings

b. Outdoor on Building

Eight to ten security lights of unknown type controlled by light sensor. Most do not work.

f. Heat/HVAC

The 2 car stall garage is heated with forced air natural gas. The 3 stall garage is not heated. *What we could do* –Install motion sensor switches on both the interior and exterior. Replace exterior lights with LED’s. What we will do in the next 12 months –Install motion sensor switches and LED lights. Apply for an Energy Independent Community Grant to do a detailed Energy Audit of the building.

**SMU Ford Office Building and Storage (Shamoco Bldg)**

g. Electrical

1. Lighting

a. Indoor

There are switched fluorescent lights in the offices and bathrooms.

b. Outdoor on Building – There are none.

*What we could do* –Install motion sensor switch in the bathrooms. Install a motion sensor switch on one of the exterior lights. What we will do in the next 12 months –Install motion sensor switches.

2. Equipment

h. Heat/HVAC

Forced air natural gas from wall mounted units. The building has central air conditioning. *What we could do* –Install 7 day setback thermostats. What we will do in the next 12 months – Install 7 day setback thermostats. Apply for an Energy Independent Community Grant to do a detailed Energy Audit of the building.

**SMU Cable Television Building (Head-end n Waukechon Street)**

i. Electrical

1. Lighting

a. Indoor

There are switched fluorescent lights in the equipment room and bathrooms. Exit lights of unknown type

b. Outdoor on Building - None

2. Equipment

a. Computers

b. Printers

c. Machinery

Radio and television equipment consuming large quantities of electricity.

3. Other

j. Heat/HVAC

Heat is provided by forced air natural gas. Air conditioning is very important for the operation of the building. *What we could do* –Investigate a use for the “waste” heat. What we will do in the next 12 months –Contact the School District and ask if they would be interested in a student project to reuse “waste” heat. Apply for an Energy Independent Community Grant to do a detailed Energy Audit of the building.

## Fuel

### Police Fleet

#### A. Fuel

- a. Diesel
- b. Gasoline
- c. E-85 Nine squads with a tenth to be added this fall. Lights on all squads are on LED bulbs. Fuel cost per year is \$25,000.

#### Other

*What we could do* –Continue to use E-85 fuel. What we will do in the next 12 months –Continue to use E-85 fuel and tout its benefits to the state of Wisconsin.

### Department of Public Works Fleet

#### B. Fuel

- a. Diesel –In 2008 33,332.1 gallons used costing \$73,684.92
- b. Gasoline – In 2008 4,614.8 gallons used costing \$10, 677.82
- c. E-85

#### Other

*What we could do* –Over time switch the fleet over to alternative fuels including electrical, E-85 and bio-diesel. What we will do in the next 12 months –In replacing any fuel consuming equipment, investigate if one can be purchased that uses a renewal fuel.

### Fire Department Fleet

#### C. Fuel

- a. Diesel – Fuel cost in 2008 was \$8,000.
- b. Gasoline
- c. E-85

#### Other

*What we could do* –With time switch the fleet to bio-diesel. What we will do in the next 12 months –In replacing any fire engine investigate purchasing one that uses bio-diesel.

### SMU Fleet

#### D. Fuel

- a. Diesel – In 2008 1,937 gallons used costing \$6,808.
- b. Gasoline – In 2008 7,620 gallons used costing \$23,500.
- c. E-85

#### E. Other

*What we could do* –With time switch the fleet to alternative vehicles, particularly Electric, but also E-85 and Bio-diesel. What we will do in the next 12 months –In purchasing any vehicle investigate buying one that uses alternative fuel.

### Parks Department Fleet

#### F. Fuel

- a. Diesel – Total \$2,896, lowest month is zero(May), highest is \$836 (July)
- b. Gasoline – Total \$4,566, lowest month is \$115(Feb), highest is \$843(July)
- c. E-85
- d. Other

*What we could do* –With time switch the fleet over to alternative fuels, particularly electric but also E-85 and bio-diesel. What we will do in the next 12 months –In purchasing any equipment investigate the possibility of buying ones that use alternative fuels.

#### A. Other – Utility Costs

**City Hall/Police Department/Community Room**

In 2008 the Electricity, water and sewer cost \$13, 068 and the Heat cost \$6,653

**Public Works Garage**

In 2008 the cost was \$12,657 for Electricity and \$14,689 for Heat.

**Wells and Lift Stations**

**Land Fill/Recycling Center**

In 2008 the cost was \$6,768 for Electricity and \$9,225 for Heat

**Recreation Center**

Gas annual cost \$27,121, lowest month \$311(July), highest month \$5,405(Jan)

Electricity annual cost \$18,594, lowest month \$1,303(Nov), highest month \$1,904 July

Water and Sewer annual cost \$7,995, lowest month \$494(Nov), highest month \$1,190(Sept)

**Park Department Garage with small office**

Gas annual cost \$1,102, lowest cost \$14(May), highest \$263(Dec)

**Park Shelters**

**Storage Building/Ice shack/Wading Pool**

Wading Pool Gas annual total \$660, lowest zero(3 months), highest \$289(July)

Ice Shack annual gas cost \$101, \$3 monthly variance.

**Ball Diamonds**

Martzke diamond electric annual cost \$3,078, lowest month \$144(numerous), highest \$620(July)

Martzke Lights electric annual cost \$10,800, \$900 each month.

Memorial Electric annual cost \$7,307, lowest month cost \$412(8 months), highest \$1,131(July)

**Fire Station**

**SMU Main Utility Office (includes heated Garage)**

Annual electric cost \$14,708, lowest month \$1,067 (Nov), highest \$1,472 (Jan)

Annual natural gas cost \$8,166

**SMU Unheated Garages**

Annual electric cost \$92, lowest month \$2.44 (Dec), highest \$9.40 (April)

**SMU Ford Utility Building (Shamoco Bldg)**

Annual electric cost \$4,049, lowest month \$201 (April), highest \$506 (Aug)

Annual natural gas cost \$4,382

**SMU Cable Television Building (Head-end on Waukechon Street)**

Annual electric cost \$14, 358, lowest month \$905 (Oct), highest \$1,338 (Feb)

Annual natural gas cost \$160

**B. Street Lights**

City Owned:

468 150 Watt High Pressure Sodium (HPS) Utility Owned

6 150 Watt HPS City owned

339 250 Watt HPS Utility

147 100 Watt HPS (Acorn) Utility

20 100 Watt HPS (Acorn) City

These 980 lights cost about \$193,000 per year or \$197 per bulb.

*What we could do* –Replace these 980 bulbs with Orion Exterior T5 Technology. What we will do in the next 12 months –Apply for an EECEBG grant to replace the 980 street lights with energy efficient lights.

## II... Supplies for the City

- A. Office
  - 1. Paper
  - 2. Other
- B. Operations
  - 1. Sand
  - 2. Salt
  - 3. Other

## III... Tasks or Operations for the City

- A. Grass Cutting
  - 1. Road Sides
  - 2. Parks
- B. Snow Plowing
- C. Road Maintenance

## IV. Standards for the City

- A. Road Width – Roadway vs. right-of-way  
*What we could do:* On any new local streets reduce the width of the hard surface area. What we will do in the next year: Amend the Subdivision Ordinance to reduce the required street width in new subdivisions.
- B. Policy on snow plowing – may consider differentiating between highways and local streets. What we will do in the next year: Develop a policy on appropriate circumstances to plow snow.
- C. Policy on lawn mowing – consider frequency, reducing areas and utilizing electric and/or solar powered lawn mowers. What we will do in the next year: Develop a policy on under what circumstances the lawns should be mowed.
- D. Replace all incandescent light bulbs with LED or CFL bulbs. What we will do in the next year: Establish a policy that requires all incandescent light bulbs be replaced with CFL or LED bulbs unless a CFL or LED bulb will not physically fit.
- E. Establish The Natural Step (TNS) standards for all new commercial, industrial and multifamily development. What we will do in the next year: Work to establish such a policy.

