

# Integrated Resource Plan

2012 to 2017

City of Fremont, Nebraska

Department of Utilities

May 2012

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# Executive Summary

Fremont, NE - Department of Utilities (FDU) is a multi-service utility, providing electric, natural gas, water, wastewater and solid waste disposal services to the community and the surrounding area. Because of the common customer base and the relationship of electricity to the other services provided, it is the intent to consider programs for all the utilities and services provided.

The FDU has generation capacity to meet customer demand until 2029. Our base (coal) units will meet demand until 2023 and we intend to maintain and operate these existing coal generating units as long as it is economically viable. A gas peaking turbine generator was added in 2003 and will provide the additional summer peak demand that is not supplied by the base (coal) units through 2029.

The natural gas system has completed major renovations in the distribution system that will handle growth demands for many years.

The water system has completed construction of a water storage reservoir to facilitate treatment and allow off-peak pumping. New wells are being installed with variable speed drives to reduce electric demand.

A major renovation and upgrade of the wastewater treatment plant was completed. The project included reuse of methane gas for heating and processing as well as installation of high efficiency motors, pumps and other mechanical equipment to reduce electric demand.

FDU continues to evaluate the full range of alternatives, including new generating technology, power purchases and sales, energy conservation and efficiency, cogeneration, renewable energy resources in an effort to provide reliable and the lowest cost energy to the customer.

The City participates in a low income home rehabilitation program to help residents reduce their energy consumption and costs. A conservation education program for 4<sup>th</sup> graders is offered at public and private elementary schools. Energy conservation and assessment tools are available on the City website. FDU will continue to evaluate demand side management programs.

Board of Public Works meetings and City Council meetings are held twice monthly and are open to the public for input and comment on system operation and resource planning.

# Community and Utility Service Area Profile

Fremont is situated in the Platte River Valley of Dodge County in eastern Nebraska. Fremont's industry is primarily agricultural based with commerce making a significant contribution to the community as well.

Fremont is a First Class City, and is governed by an Administrator, Mayor-Council form of government.

## Climate:

Average Daily Temperature	Minimum	Mean	Maximum
January	13	23	33
February	18	28	38
March	27	39	50
April	38	51	63
May	50	62	74
June	60	72	83
July	65	76	87
August	62	74	85
September	52	65	77
October	40	53	65
November	28	39	49
December	16	25	34
Annual	39	51	62

Area: 7.4 square miles

Households: 10,725

Housing Characteristics: Owner Occupied 6,552  
Renter Occupied 4,173

Home Ownership: 61%

Electric, Gas, Water, Wastewater, and Solid Waste Disposal are provided by the City of Fremont, Department of Utilities.

## Historic Community Growth

The table below shows the population for Fremont and Dodge County from 1870 to 2010 based on U. S. Bureau of Census data.

### Historic Population Data

Year	City of Fremont	Dodge County
1870	1195	4212
1880	3013	11263
1890	6747	19260
1900	7241	22298
1910	8718	22145
1920	9592	23197
1930	11407	25273
1940	11862	23799
1950	14762	26265
1960	19698	32471
1970	22962	34782
1980	23979	35847
1990	23680	34500
2000	25174	36160
2010	26397	36691

### Projected Population Data

The 2012 Comprehensive Plan prepared for the City of Fremont by Kendig Keast Collaborative projected the following population data for Fremont:

Year	City of Fremont
2010	26397
2015	26585
2020	27043
2025	27753
2030	28601

Since 1960, the population of Dodge County has mirrored the population of Fremont. Therefore, similar population changes would be expected in Dodge County.

# Utility Profile

FDU is one of the oldest municipal utilities in the State of Nebraska. The Water System started in 1885, the Wastewater System in 1892, the Electric System in 1895, the Natural Gas System was acquired in 1985, and Solid Waste Disposal was added in 1994.

The Electric System consists of facilities for generation and distribution of electricity. The Water System includes four (4) in town wells and eight (8) wells at the City's well field, a water storage and treatment facility, and distribution facilities. The Wastewater System provides collection and treatment of sanitary wastes for Fremont, Valley and Arlington. The Natural Gas System includes a peak shaving facility and the distribution piping. The Solid Waste Disposal Transfer Station is operated by a private contractor for the City.

The electric service area covers 60 square miles including Fremont and the surrounding area. The wastewater and water service areas consist generally of Fremont and the area adjacent to the City Limits (facilities include 160 miles of water main, 140 miles of sewer, 1,088 fire hydrants and 22 lift stations). The gas service area includes Fremont and the adjacent area as well as the Village of Inglewood and Cedar Bluffs.

Operation of the FDU is governed by a five (5) member Board of Public Works that is appointed by the Mayor and City Council.

Operational decisions and equipment purchases in all areas of the utility operation effect the electric system demand and energy requirements.

As a public utility, there is ample opportunity for the public to provide input into our planning process. The Board of Public Works has regular meetings twice a month which are open to the public. Also, the City Council has regular meetings twice a month which are open to the public, as well as a Study Session once a month. Capital projects contracted with private contractors and capital purchases exceeding \$30,000.00 are done through the public letting process and acted on by both the Board and the City Council.

The budget for the Utility is reviewed and recommended at Board meetings open to the public and then reviewed and adopted by the City Council at meetings open to the public following proper legal notices.

## Electric Load by Sector

There are 75 manufacturing plants in the community, the largest being George A. Hormel and Company, a processor and canner of pork products, which employs 1400 people.

The FDU electric system presently serves 14,216 customers in a sixty square mile service area. The utility has three coal/gas fired generators with a total net capacity of 120 Mega Watts (MW). The Utility also receives 4.8 MW of hydro power from Western Area Power Administration. The utility also has a 40 MW natural gas combustion turbine.

In 2008, Fremont established a new system net peak demand of 100.6 MW. Fremont has adequate generating resources to meet expected system demands until 2029 and maintain spinning reserves of 13.64 percent. Following is a breakdown of the electrical costs per customer class as of September 30, 2011.

	Number of Customers	MWH Sold	KWH per Customer	Average Cost per KW
Residential	12,159	148,212	12,189	0.069
Commercial	1,593	41,835	26,262	0.075
Industrial	464	230,071	495,844	0.055

2011 system net demand – 94.6 MW	2005 system net demand – 91.5 MW
2010 system net demand – 92.5 MW	2004 system net demand – 89.6 MW
2009 system net demand – 86.9 MW	2003 system net demand – 89.5 MW
2008 system net demand – 100.6 MW	2002 system net demand – 85.7 MW
2007 system net demand – 90.9 MW	2001 system net demand – 87.2 MW
2006 system net demand – 96.5 MW	2000 system net demand – 84.9 MW

FDU projects a growth rate of 1.6% for both capacity and energy planning (see Appendix A). Fremont has experienced a 1.1% average annual change in net system peak demand and net system usage over the past 10 years. Fremont has experienced a 1.2% average annual change in net system peak demand and net system usage over the past 25 years. And, Fremont has experienced a 1.6% average annual change in net system peak demand and net system usage over the past 40 years.

Fremont participated in the 20 year Statewide Integrated Resource Plan prepared in 2001. The Statewide projected growth rate was 1.7% per year with the urban areas having a greater projected growth rate. In 2012 Fremont completed a Power Supply Study that projects a 1.6 % growth rate for the next 20 years.

## Existing Electric Power Supply

Fremont's existing generation consists of:

Unit	Fuel	Capacity	Operational Since
# 6	Coal/Gas	16.5 MW	1956
# 7	Coal/Gas	22 MW	1963
# 8	Coal/Gas	91.5 MW	1976
CT	Gas/Diesel Fuel	40 MW	2003

Gross generation efficiency is 10,610 BTU per KWH.

Generally, unit # 8 is operated as the base unit. When summer load conditions warrant or power sales justify the cost, units # 6 and # 7 are brought on line. During the spring and fall maintenance of unit # 8, units # 6 and # 7 are operated with electric purchases at market prices off the electric grid making up the balance of Fremont's electrical needs.

FDU carefully assesses the cost of generation from each of the units to see whether upgrades in equipment or changes in operation and maintenance practices would result in lower production costs to maintain or improve competitive levels.

The utility has an energy marketing agreement with OPPD to market excess energy when the market provides a beneficial return to the utility. These sales not only provide a return for the utility, but also allow operation of our generating units at a more efficient level (see Appendix A).

## Environmental

All FDU operations comply fully with all current and known environmental regulations. The low level of emissions was one of the factors considered in choosing the supplier of our gas turbine peaking unit.

The Utility uses low sulfur coal and natural gas in all of our coal fired boilers. The utility continually looks at precipitator maintenance and elimination of PCB equipment.

The Utility employs an environmental engineer to help ensure full compliance to all regulatory requirements.

The next few years will see many upgrades, especially to the Lon D. Wright Power Plant, in order to maintain compliance with new environmental regulations. The Utility is currently in the process of evaluating the impact of new Environmental Protection Agency (EPA) proposed environmental regulations. FDU intends to fully comply with any future regulations to remain in compliance on all units.

FDU does not have any new resource acquisitions planned for the foreseeable future. When new resources acquisitions are planned, we will strive to minimize adverse effects to the environment.

## Maintenance Program of Existing Supply

FDU has completed several improvements and maintenance projects at the Lon D. Wright Plant over the last several years to increase efficiency of the operation of the generating units as well as the overall plant efficiency in order to keep the cost to our customers at a minimum.

Unit # 8 is brought off-line each spring and fall to perform routine maintenance which includes repacking steam valves and inspection of the boiler interior and removal of ash accumulation. Major overhauls of the turbine and generator are scheduled based on hours of operation. Unit # 8 is operated approximately 48,000 hours between major overhauls, while units # 6 and # 7 are operated approximately 42,000 hours.

Following is a list of the larger projects completed over the last five years:

- Inspection of unit 7 turbine, valves and generator.

- Installation of continuous condenser tube cleaning system on unit 8.

- Inspection of units 6 and 7 boiler for remaining boiler life.

- Boiler tuning and reprogramming to increase efficiency and better operation.

- Installation of new operator stations to allow operations to have better view of all plant operating parameters.

- Installed a water softener and RO system to pre-treat water for use in units 6, 7 and 8 boilers.

- Precipitator maintenance and sand blasting for better ash collection .

- Ongoing motor cleaning program.

- Ongoing retro-fill or replacement of transformers that contain PCB's.

- Ongoing replacement of lighting at the plant.

- Installed a continuous monitoring boiler water analysis panel to provide continuous monitoring and alarming to the control room. The data collected is used to help establish proper water treatment.

Installed automated water generation control system, to generate reverse osmosis water 24/7 and more accurately monitor water generation.

Inspected and rebuilt unit 8 boiler feed water pump to increase efficiency and reliability.

Installed new tubes in feed water heaters on units 7 and 8 to increase efficiency.

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## Supply Side Alternatives

FDU had a “Competitiveness Preparation Work Plan” study completed by U. S. Energy Services Inc. in early 2000. FDU also had an analysis report on generation capacity done by Lutz, Daily and Brain, LLC Consulting Engineers in early 2000. Both reports recommended the construction of a gas peaking generator which was completed in 2003. The addition of the peaking unit will postpone the need for additional capacity for several years.

The Utility is currently working on a Power Supply Study to evaluate our generation requirements for the next 20 years. Lutz, Daily and Brain, LLC is the consulting Engineering Firm completing the study. The overall purpose of this study is to develop a future power supply plan to provide reliable and economical service to the customers of the Fremont Department of Utilities (FDU) Electric System in an environmentally acceptable manner.

Alternatives being considered to offset future capacity deficiency are to purchase capacity on the wholesale market or to build and own additional generation. Options for additional generation included constructing a cogeneration unit, renewable energy, a joint venture with another utility or purchase power.

Another important factor that entered into the supply side review was transmission restrictions. Fremont is connected to the electric grid at two locations with OPPD. The capacity of these interconnections will only allow us to import approximately 60 MW of power without losing voltage.

In 2010 the Utility developed and implemented a Renewable Net Metering Policy. The policy outlines and establishes the guidelines for a customer to install a Small Renewable Power Production Facility on the Fremont Department of Utilities (FDU) Distribution System. The development of this policy should help to encourage the use of renewable power production by customers.

Therefore, to provide for system reliability and future growth, the utility staff, the Board of Public Works and the City Council will continue to review load projections and available options to ensure the utility has an adequate power supply.

## Demand Side Management

As stated earlier, the “Competitiveness Preparation Work Plan” also considered demand side management issues as well. The main proposal evaluated was load management by which the utility could limit use of water heaters and air conditioners during peak electric load periods. Participation in such an operation would be voluntary and probably would require a rate incentive program to attract enough participation to make the program self supporting.

Another program considered was to provide incentive payments to large electrical users to install equipment which is more energy efficient. The study pointed out; that Fremont’s rates are rather low, making it difficult to offer incentives at a level which would generate significant participation.

The report also suggested that the utility consider doing energy audits of the largest electrical users and provide a report with suggestions on facility improvements the customer could make on their own to reduce electrical consumption and costs. The utility has completed four (4) of these type audits.

We currently offer a rate incentive program to encourage industrial users to improve their power factor. In addition to our annual review of the customers’ demand readings, we will record and provide to our large power customers electric consumption and electric demand meter readings so they can analyze their operation in an effort to reduce their electrical demand needs.

The utility is investigating the use of rebates for Energy Star appliances and higher SEER rated A/C equipment to encourage energy efficiency. We are researching the cost and benefits of this program to determine participation levels and energy savings.

The FDU has purchased “Kill-A-Watt” meters to help customers monitor their power consumption. The meter is available all customer to borrow and determine the consumption of different household appliances. The use of the “Kill-A-Watt” will encourage customers to make informed and energy efficient choices concerning appliance purchases.

A personalized energy conservation plan is available on-line in conjunction with “Wattz On.” The plan addresses a customers’ specific habits when using electricity, gas and carbon and offers ideas and actions to help them reduce consumption.

The FDU completed the installation of an Automated Meter Reading (AMR) System in 2011. The system is able to record time of usage readings that could be used in the future for a time of usage rate. This would allow an electric rate that would vary with the system wide peaks to make energy more costly at times of peak usage and encourage customers to minimize peak usage. The AMR system has reduced the cost for meter reading and fuel consumption.

We contract for energy audit services for the largest industrial customers. As a result of the audits, recommendations are made for replacement with more energy efficient equipment and lighting, with a two (2) to five (5) year payback period.

## Action Plan for Electrical Utility

Conduct stack testing on units 6 and 7. Data collected will be evaluated for compliance with new Environmental Protection Agency (EPA) proposed regulations.

Develop a controls strategy for compliance of EPA proposed regulations as they affect unit 8.

Install environmental control equipment on units 6, 7 and 8 to meet the proposed EPA regulations.

Operate Lon D. Wright Power Plant according to current schedule (2012 – 2017) to maintain the most efficient operations.

Continue to inspect and monitor major plant equipment to maintain cost effective long term life of the boilers, turbines and generators.

Continue to monitor growth, wholesale supply cost, transmission costs, local generation costs, and retail supply costs to ensure required power is available and obtained by the most economical means.

Explore transmission improvements with OPPD to improve interconnect capacity with electric grid to continue to provide reliable low cost power to our customers.

Continue to monitor boiler and turbine operations and adjust control tuning to improve efficiency and maintain proper equipment operations.

Continue to upgrade and improve power plant control system and data acquisition for more efficient control and operation.

FDU plans to participate in the Southwest Power Pool (SPP) Market.

Evaluate demand side management options: load control, incentives, and real time rates to determine if customers can be encouraged to lower demand. Due to the low rates and adequate power supply at FDU these options have not been considered as viable.

Evaluate alternatives for additional base load generation to meet future growth to continue to provide reliable, low cost power to our customers.

Without considerable cost, it is difficult for a utility the size of the FDU to precisely measure the benefits of each individual action item. Improving efficiencies in existing equipment will eliminate the need for additional capacity and equipment. We will reduce pollutants that are released into the environment. And, this action plan will extend the life of existing equipment.

# Electric Distribution System

FDU operates its distribution system in a manner to provide the most dependable and lowest cost product to the customer. We have recently had the entire system mapped and the circuits evaluated to determine load levels and areas where circuits needed to be upgraded and/or added to provide for more flexibility in shifting loads and for future growth.

We continue to evaluate transformers to ensure they are not overloaded and operating inefficiently as a result. New transformers are evaluated when purchased for not only first cost but also for load losses over the expected life of the transformer.

The utility has installed newer computer based relaying on both our 13.8 kV and 69 kV systems. The new equipment has resulted in fewer widespread outages and therefore better system reliability. The distribution department reviewed fuse coordination on the system to minimize customer outages. And, continue to review outage records to identify potential weaknesses in the distribution system and to determine placement of additional fusing. The FDU also monitors the power factor on distribution circuits and updates the capacitor size and placement to optimize power efficiency.

The Distribution Department has three (3) long term projects to improve the safety and reliability of the system. These projects are Replacement of 69 kV Substation Breakers, Replacement of 13.8 kV Substation Breakers and Upgrading Customer Substations. The two (2) breaker replacement projects will remove old and obsolete outdoor oil filled breakers and help to make the system more reliable. The upgrade to customer substations will bring these smaller distribution substations up to current code requirements and make them safer for our customers and employees.

The utility started a pilot project to investigate the use of LED Street Lights. We have installed different brands of LED Street Lights to monitor and evaluate their output, quality and life span. This pilot project will help the FDU to determine the cost benefits and energy efficiencies of switching to LED Street Lights.

The utility purchased an infrared camera to monitor hot spots in substations and motors at the power plant. Regular monitoring will help to minimize unplanned outages and breakdowns. This monitoring will also reduce energy losses caused by loose connections and failing equipment. The camera is shared with other departments in the utility to help improve their operations.

Our customers will see the benefits of these changes through fewer outages due to equipment failure and stability in the electric rates. Customers will also benefit indirectly from reducing safety risk. The FDU will measure the benefits from monitoring outage records.

## Natural Gas System

FDU owns and operates the natural gas distribution system in Fremont, Inglewood, and Cedar Bluffs. Approximately 10,780 customers are served.

FDU has a propane air peak shaving plant with a daily capacity of 4,000 Mcf available to control peak demands and to supplement supply if we are curtailed.

The utility has replaced about 90% of the distribution piping in the system to eliminate leaks which were prevalent in the system when it was acquired in 1985. Lost and unaccountable gas was reduced by 76,000 Mcf per year. The utility completed a major distribution loop around the North and East sides of the community to provide for expansion and to insure sufficient pipeline capacity at the power plant to operate unit # 8 on gas in case of a problem with the coal supply. This new line also provides gas for the new peaking generator.

We continue to aggressively monitor the distribution system for leaks in an effort to operate a safe system and to reduce lost and unaccounted for gas.

## Community Efforts

The City of Fremont is presently involved in a housing rehabilitation program for low to moderate income homes to reduce energy demand. Eligible properties can apply for funds to replace windows, siding, roofing, doors and storm doors, insulation, and/or heating, air conditioning systems and water heaters. A major portion of the project cost are for heating and air conditioning replacements, installation of new windows, insulation and siding. The City applies for new funding annually averaging \$300,000 a year. Energy loan repayments are redistributed for rehabilitation of additional properties.

Keep Fremont Beautiful sponsors a metal recycling program annually in cooperation with the City.

In addition, the City will plant, for a nominal fee, trees in the right of way or adjacent thereto. Generally the City plants 50 to 60 trees per year. Some of these trees will provide natural cooling in the future as they mature.

Street lighting improvements: FDU continues to make efforts to reduce street lighting costs by replacing mercury vapor lights with high pressure sodium lights. Residential streets are relamped with 100 watt high pressure sodium in place of 175 mercury vapor and arterial streets are relamped with 250 watt high pressure sodium instead of 400 watt mercury vapor.

The utility participates in a yearly Eco-Fair that is offered to all 4<sup>th</sup> grade students in the Fremont area. The fair is sponsored by Keep Fremont Beautiful and encourages conservation, recycling and environmental stewardship. The FDU promotes electricity conservation and safety. The Eco-Fair usually reaches 200 to 300 participants each year.

Participation in the Fremont Area Builders Home Show helped educate several hundred attendees on various energy conservation opportunities.

“Kill-A-Watt Detectors” are available for loan to utility customers. These simple devices are preprogrammed with Fremont’s electric rates and allow customers to see exactly how much an electrical device costs daily, monthly or annually.

Energy conservation and assessment tools are available on the FDU website.

Community Education is done throughout the year. Meetings, programs on local radio stations, Keep Fremont Beautiful brochures and narratives on the monthly utility bills are all used to promote energy conservation awareness.

## Water System

FDU's 10,770 water customers are served from ground water wells. The system is pressurized through the use of electric pumps and a 5,000,000 gallon water storage reservoir. The FDU will add a 1,500,000 gallon water storage reservoir on the west side of the city. The reservoir will be 25 feet high and will have a pumping station to maximize efficiency.

FDU flushes the City water mains on a regular basis to clean the mains and maintain a low coefficient of friction. The system wells are pulled on a regular basis to allow for the well screens to be cleaned and the pump bowls inspected to maintain high efficiency in the well pumps and reduce electrical usage.

Two of the wells and three booster pumps at the water reservoir have variable speed drives to govern water flow in off peak conditions and reduce electrical consumption. New wells installed have larger screens to reduce water to wire pumping. New well motors are variable speed to reduce energy requirements.

## Wastewater Treatment

FDU has just completed a major upgrade of the wastewater treatment plant. Modifications included the replacement of several old pumps and motors. Many of the motors are variable speed drive to control electrical usage.

All of the heating needs of the new digester are accomplished with methane gas generated by the digester except during extremely cold weather. In addition, the gas from the digester is used to heat the solids processing building and the old digester building.

# Appendix A

## Load Information

Peak Electric Load - Graph

Generation and Output - Table and Graph

## Projected Loads

Projected Electric Loads 1998 to 2017 – Table

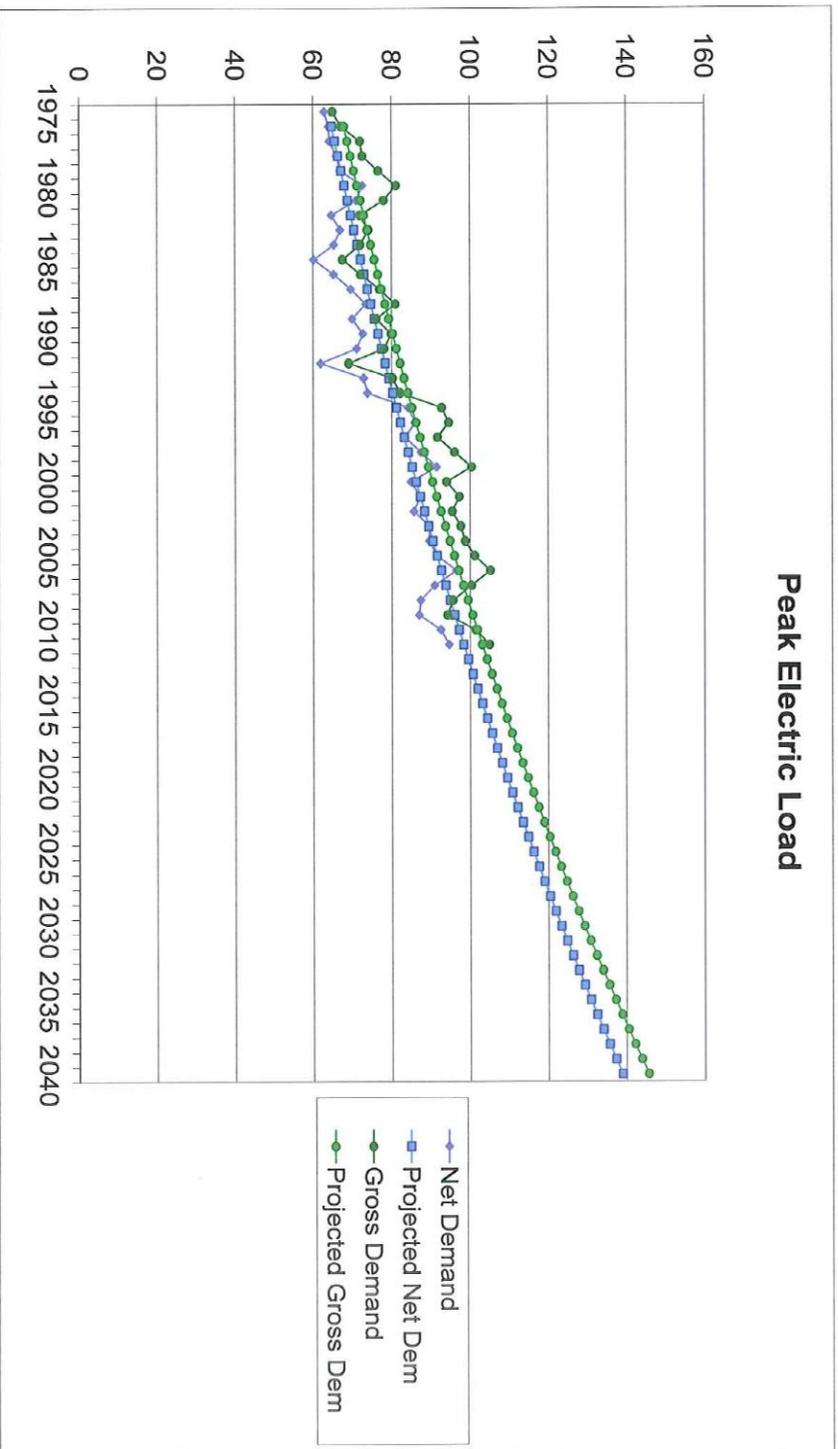
## Efficiency

Unit #8 Gross Heat Rate versus Load - Graph

Unit #7 Gross Heat Rate versus Load - Graph

Unit #6 Gross Heat Rate versus Load – Graph

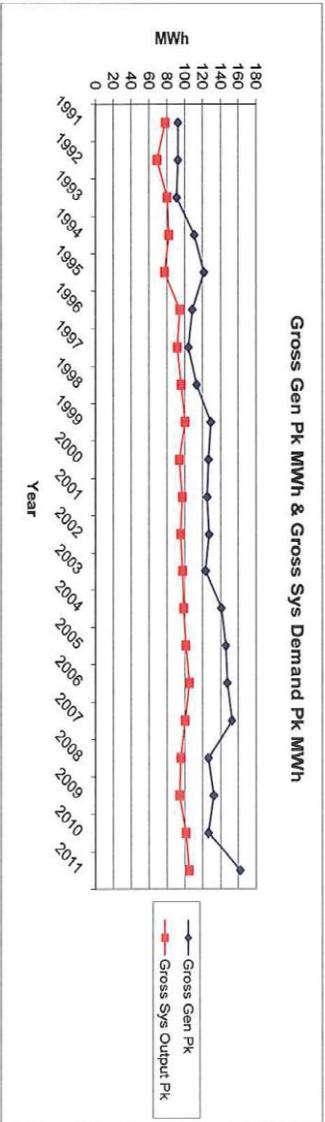
### Peak Electric Load



# Fremont, NE - Department of Utilities

## Load Figures 1991 - 2011

Year	Gross Gen (Min)	Gross Gen Pk	Gross Sys Output Pk	Net Sys Output Pk	Gross Gen Pk Day
1991	3.96	92.64	78.12	71.15	1195.80
1992	10.08	92.64	69.06	61.92	1082.00
1993	0.00	91.08	80.24	72.88	1301.30
1994	18.50	110.99	82.20	73.86	1222.40
1995	11.50	121.84	77.36	60.32	1585.40
1996	9.84	108.72	94.52	85.97	1670.40
1997	0.09	104.28	91.69	83.39	1641.50
1998	0.00	113.64	96.02	87.44	1517.3
1999	11.65	129.31	100.41	91.44	1780.50
2000	0.00	126.66	93.99	84.90	1555.50
2001	0.00	125.32	97.26	87.23	1474.20
2002	11.80	127.30	95.43	85.68	1396.30
2003	0.00	123.44	97.62	89.54	1687.18
2004	0.00	140.73	98.77	89.55	1313.33
2005	0.00	145.73	101.18	91.49	1638.47
2006	15.08	147.48	105.20	96.52	1519.28
2007	0.02	152.96	100.39	90.91	1275.31
2008	18.52	126.57	95.60	87.34	1200.11
2009	14.54	132.38	94.18	86.93	1466.88
2010	0.00	126.54	101.42	92.49	1436.11
2011	0.00	162.49	104.94	94.58	1799.49





## Fremont, NE - Department of Utilities Projected Electric Loads 2001 to 2022

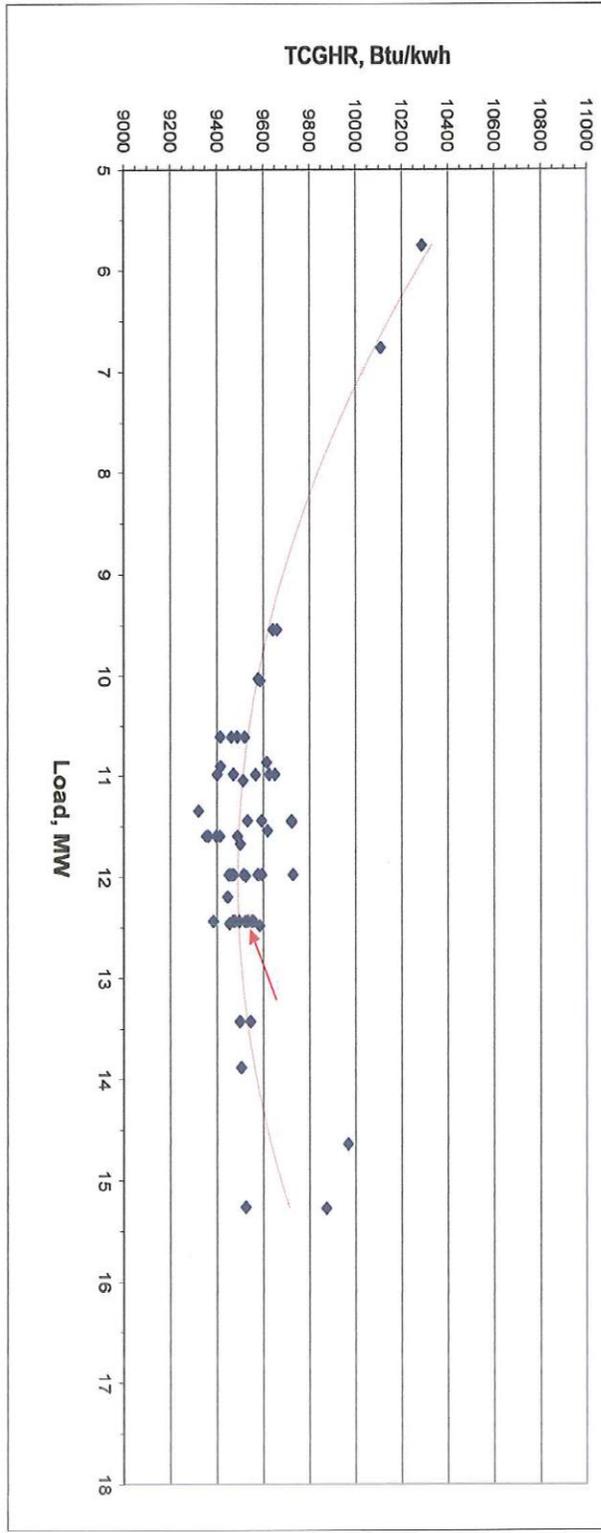
2001 to 2011 are actual and 2012 to 2022 are projections

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Net Peak Demand	87.2	85.7	89.5	89.6	91.5	96.5	90.9	100.6	86.9	92.5	94.6	96.1	97.6	99.2	100.8	102.4	104.0	105.7	107.4	109.1	110.9	112.6
Reserve Capacity	13.1	12.9	13.4	13.4	13.7	14.5	13.6	15.1	13.0	13.9	14.2	12.5	12.7	12.9	13.1	13.3	13.5	13.8	14.0	14.2	14.5	14.7
Firm Purchases	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
Gross Peak Demand	97.3	95.4	97.6	98.8	101.2	105.2	100.4	95.6	94.2	101.4	104.9	106.6	108.3	110.1	111.8	113.6	115.4	117.3	119.1	121.1	123.0	125.0
Net Generating Capacity	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0
Surplus or Deficit Capacity	22.7	24.6	22.4	21.2	18.5	14.8	19.6	24.4	25.8	18.6	15.1	13.4	11.7	9.9	8.2	6.4	4.6	2.7	0.9	-1.1	-3.0	-5.0
Peaking Unit	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0
Net Generating Capacity	156.0	156.0	156.0	156.0	156.0	156.0	156.0	156.0	156.0	156.0	156.0	156.0	156.0	156.0	156.0	156.0	156.0	156.0	156.0	156.0	156.0	156.0
Surplus or Deficit	58.7	60.6	58.4	57.2	54.8	50.8	55.6	60.4	61.8	54.6	51.1	49.4	47.7	45.9	44.2	42.4	40.6	38.7	36.9	34.9	33.0	31.0

( 1.60% Projected Increase Per Year)  
 Reference: LD88 Power Supply Study Draft Submittal Phase II, 2.0-3  
 Reserve Requirement = 15.00% x (Projected Net System Peak Demand) 2001 - 2011.  
 Reference: WAPA Integrated Resource Plan 2007 to 2012  
 Reserve Requirement = 13.64% x (Projected Net System Peak Demand - WAPA Power Allocation) beginning in 2012 - 2022.  
 Reference: LD88 Power Supply Study Final Submittal Phase I, 5.0-3

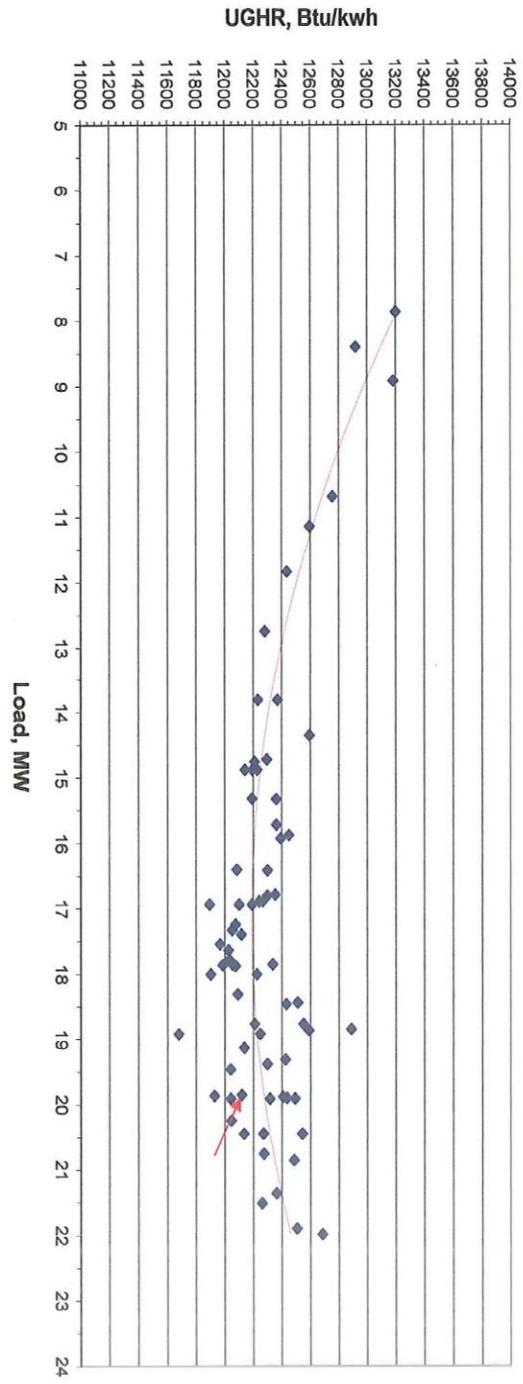
Unit 6 Turbine Cycle Gross Heat Rate vs Load

$$Y = 21.305X^2 - 512.88X + 12577$$
$$R^2 = 0.4821$$



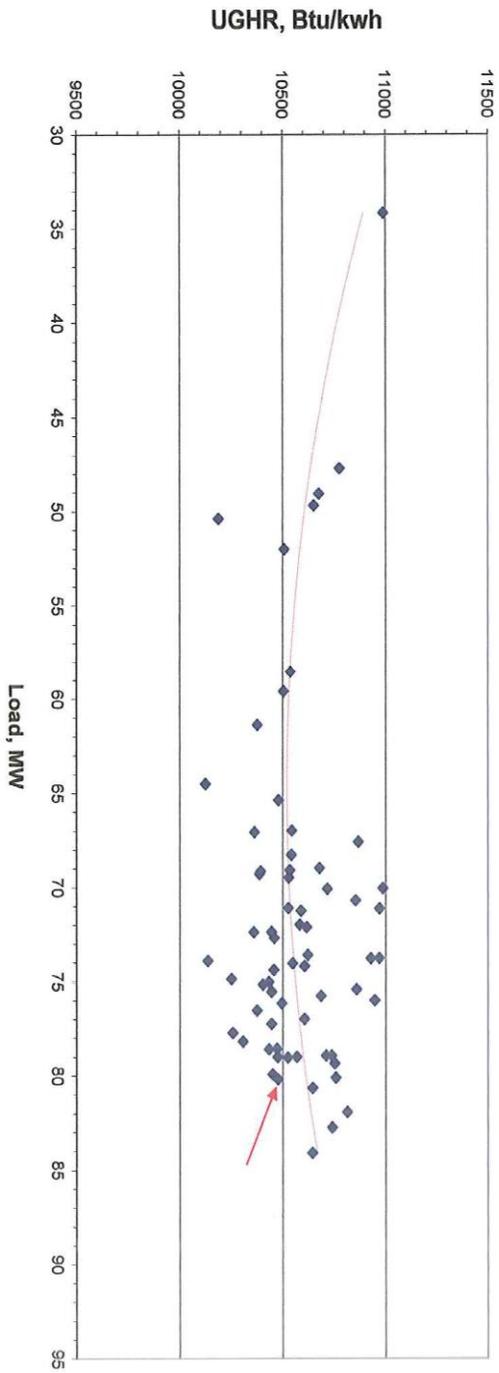
Unit 7 Unit Gross Heat Rate vs Load

$y = 11.799x^2 - 405.07x + 15668$   
 $R^2 = 0.5071$



Unit 8 Unit Gross Heat Rate vs Load  
11/1/05-Present

$$y = 0.3971x^2 - 51.438x + 12187$$
$$R^2 = 0.0691$$



## Appendix B

Board of Public Works Approval of Integrated Resource Plan

City Council Approval of Integrated Resource Plan

Public Comments and Response

**CITY OF FREMONT  
BOARD OF PUBLIC WORKS  
JUNE 6, 2012  
4:15 P.M.**

A meeting of the Board of Public Works was held on June 6, 2012 at 4:15 p.m. in the 2<sup>nd</sup> floor meeting room at 400 East Military, Fremont, Nebraska. The meeting was preceded by publicized notice in the Fremont Tribune and the agenda displayed in the Municipal Building and is open to the public. A continually current copy of the agenda was available for public inspection at the office of the General Manger, Department of Utilities, 400 East Military. The agenda was distributed to the Board of Public Works on June 1, 2012. A copy of the open meeting law is posted continually for public inspection.

Roll call showed Board Members Behrens, Gifford, Haave, Sawtelle and Shelso present – 5 present, 0 absent.

Moved by Member Haave, seconded by Member Sawtelle to approve the legality of the meeting. Roll call vote: 5 ayes. Motion carried.

Moved by Member Behrens, seconded by Member Haave to approve the minutes of May 23, 2012 meeting. Roll call vote: 5 ayes. Motion carried.

**ACCOUNTS PAYABLE – 1<sup>st</sup> HALF OF JUNE 2012**

Moved by Member Behrens, seconded by Member Gifford to approve. Roll call vote: 5 ayes. Motion carried.

**SANITARY SEWER MANHOLE REPAIR BID**

Moved by Member Sawtelle, seconded by Member Haave to recommend to City Council awarding bid, in the amount of \$32,107, to Utility Solutions, LLC. Roll call vote: 5 ayes. Motion carried.

**SANITARY SEWER REHABILITATION BID**

Moved by Member Haave, seconded by Member Sawtelle to recommend to City Council awarding bid, in the amount of \$137,343.50, to Municipal Pipe Tool Company, LLC. Roll call vote: 5 ayes. Motion carried.

**WATER MAIN REPLACEMENT, 5<sup>TH</sup> STREET – CLARKSON TO D STREET**

Moved by Member Sawtelle, seconded by Member Gifford to recommend to City Council awarding bid, in the amount of \$117,074.50, to Penro Construction Company, LLC. Roll call vote: 5 ayes. Motion carried.

**INTEGRATED RESOURCE PLAN**

Moved by Member Behrens, seconded by Member Haave to recommend to City Council approval of the plan for the years 2012 through 2017. Roll call vote: 5 ayes. Motion carried.

**PLANS, SPECIFICATIONS, ESTIMATE OF COSTS, PERMISSION TO ADVERTISE FOR BIDS FOR ROOF REPAIR FOR THE WASTEWATER TREATMENT PLANT SOLIDS PROCESSING BUILDING**

Moved by Member Haave, seconded by Member Gifford to recommend to City Council approval. Roll call vote: 5 ayes. Motion carried.

**SEWER BACKUP CLAIM AT 1800 NORTH NYE**

Moved by Member Behrens, seconded by Member Haave to approve claim, in the amount of \$26,161.43, subject to backflow prevention policy. Roll call vote: 5 ayes. Motion carried.

**INVESTMENTS:**

None.

**UTILITY DEPOSIT POLICY**

Discussion was held on possible changes to the policy. No motions made, policy remains unchanged.

**GENERAL MANAGER UPDATE**

General Manager Marshall discussed with the Board next year's coal contract, natural gas purchasing, and electric marketing agreement for "day ahead market" beginning in 2014.

Moved by Member Behrens, seconded by Member Sawtelle to adjourn the meeting. Roll call vote: 5 ayes. Motion carried. Meeting adjourned at 5:05 p.m.

CITY COUNCIL MEETING  
June 12, 2012  
7:00 P.M.

After the study session and the Pledge of Allegiance, the Mayor called the meeting to order. Roll call vote showed Council Members Johnson, Stange, Navarrette, Eairleywine, Bixby, Anderson, Hoppe and Gitt present – 8 present, 0 absent.

The City Clerk read a notice that this meeting was preceded by publicized notice in the Fremont Tribune and the agenda displayed in the Municipal Building and online at [www.fremontne.gov](http://www.fremontne.gov) and distributed to the Mayor and Council on June 8, 2012 and is open to the public. The City Clerk also stated a copy of the agenda was kept continually current and available to the public at the office of the City Clerk, 400 East Military and a copy of the open meeting law is posted continually for public inspection located near the entrance door by the agendas. Moved by Council Member Bixby, seconded by Council Member Navarrette to approve the legality of the meeting. Roll call vote: 8 ayes. Motion carried. Moved by Council Member Stange, seconded by Council Member Gitt to open the public hearing on the CDBG Comprehensive Revitalization Project 10-CR-003 budget amendment and CDBG Comprehensive Revitalization Project 11-CR-003 application . Roll call vote: 8 ayes. Motion carried.

Judy Joy and Tina Engelbart with the Northeast Nebraska Economic Development District gave an overview of the requested amendment and application. There being no further testimony, moved by Council Member Gitt, seconded by Council Member Navarrette to close the public hearing. Roll call vote: 8 ayes. Motion carried.

Moved by Council Member Stange, seconded by Council Member Gitt to approve Resolution No. 2012-094 authorizing the CDBG Comprehensive Revitalization Project 10-CR-003 budget amendment and extension. Roll call vote: 8 ayes. Motion carried.

Moved by Council Member Bixby, seconded by Council Member Anderson to approve Resolution No. 2012-095 approving CDBG Comprehensive Revitalization Project 11-CR-003 application. Roll call vote: 8 ayes. Motion carried.

Moved by Council Member Eairleywine, seconded by Council Member Johnson to open the public hearing on the changes to the Fremont Transit Lines bus route. Roll call vote: 8 ayes. Motion carried.

Craig Corn inquired if the bus would be stopping at Splash Station. Mr. Corn was told Splash Station and Ronin Pool were the proposed new stops that were added to the route. There being no further testimony, moved by Council Member Gitt, seconded by Council Member Navarrette to close the public hearing. Roll call vote: 8 ayes. Motion carried.

Moved by Council Member Gitt, seconded by Council Member Eairleywine to approve the route changes to incorporate stops at Splash Station and Ronin Pool for the Fremont Transit Lines. Roll call vote: 8 ayes. Motion carried.

Moved by Council Member Gitt, seconded by Council Member Johnson to approve the consent agenda. Roll call vote: 8 ayes. Council Member Gitt abstained on Sean Gitt request to subdivide Lots 7 & 8, Block 172, Original Town. Roll call vote: 8 ayes. Motion carried.

- Dispense with reading of minutes May 15 & 29, 2012 and June 5, 2012
- May 30 – June 12, 2012 claims
- Resolution No. 2012-096 granting permission to consume alcohol on City property for Jessica Hinken, City Auditorium, June 16, 2012, wedding; Heather Weinrich, City Auditorium, July 21, 2012, wedding; Cole Miller & Sumer Vergith, Christensen Field Senior Center, May 4, 2013, wedding reception
- Resolution No. 2012-097 approving Special Designated Permit applications for Shawsky's LLC, 925 North Broad, June 30, 2012, reception; St. Patrick's Parish, 431 South Union, July 14, 2012, dance, reception, fund raiser, beer garden, alumni reunion; Whis's End Zone Lounge, 845 South Broad, July 21, 201, fund raiser poker run; DeSauce Developments, 1710 West 16th, July 7, 2012, reception
- Certified election results of the primary election held May 15, 2012
- MainStreet of Fremont request to close various streets Annual Crazy Days Sidewalk Sale July 28, 2012
- Agreement with NENEDD to review CDBG program income loan program
- Resolution No. 2012-098 accepting and awarding bid for sanitary sewer manhole repair
- Resolution No. 2012-099 accepting and awarding bid for sanitary sewer line rehabilitation
- Resolution No. 2012-100 accepting and awarding bid for water main replacement, 5th Street - Clarkson to D Streets
- Resolution No. 2012-101 approving Integrated Resource Plan

- Resolution No. 2012-102 approving plans, specifications, estimate of cost and grant permission to advertise for bids for roof repair at Waste Water Treatment Plant Solids Processing building
- Fireworks display at Christensen Field on July 21, 2012
- Resolution No. 2012-103 approving request of Sean Gitt to subdivide part of Lots 1, 2, 7 and 8, Block 172, Original Town into two lots (335 North Park)
- Resolution No. 2012-014 approving plans, specifications, estimate of costs and granting permission to advertise for bids for Paving District. No. 548 (Main Street – 1st to 3rd)
- Resolution No. 2012-015 authorizing lease agreement with Ed Robinson for hangar site at Airport
- Resolution No. 2012-016 authorizing use of \$207,000 of LB840 funds for infrastructure extensions at the Municipal Airport

The City Clerk gave the second reading, by title only, of an ordinance amending FMC 6-406 relating to Criminal Trespass. The third reading will be at the next regular Council meeting.

The City Clerk gave the second reading, by title only, of an ordinance creating Paving District No. 549 encompassing the alley from 5<sup>th</sup> to 6<sup>th</sup> Street, between Platte and Logan. The third reading will be at the next regular Council meeting.

Moved by Council Member Navarrette, seconded by Council Member Anderson to suspend the rules and place on final reading the Ordinance approving the request of Sylvia Gocken to rezone the SE ¼ SE ¼ 33-17-8 Saunders County (1212 CR X) from AG Agricultural District to RR Rural Residential District. Roll call vote: 7 ayes, 1 abstain (Bixby). Motion carried.

The City Clerk gave the final reading, by title only, of an Ordinance approving the request of Sylvia Gocken to rezone the SE ¼ SE ¼ 33-17-8 Saunders County (1212 CR X) from AG Agricultural District to RR Rural Residential District. Roll call vote: 7 ayes, 1 abstain (Bixby). Ordinance No. 5242 passed.

Moved by Council Member Gitt, seconded by Council Member Eairleywine to approve Resolution No. 2012-107 banning, except in designated areas, smoking in all City parks. Council Member Navarrette read, for the record, a letter from Dave Pimper, 449 East 3<sup>rd</sup>, in opposition to the Resolution. Roll call vote: 8 ayes. Motion carried.

The City Clerk gave the first reading, by title only, of an Ordinance creating Paving District No. 550 (Johnson Road, Peterson Avenue to 16<sup>th</sup> Street, west side). The second reading will be at the next regular Council meeting.

The City Clerk gave the first reading, by title only, of an Ordinance repealing Ordinance No. 3904 regarding Civil Defense Director. Moved by Council Member Bixby, seconded by Council Member Stange to suspend the rules and place on final reading. Roll call vote: 8 ayes. Motion carried.

The City Clerk gave the final reading, by title only, of an Ordinance repealing Ordinance No. 3904 regarding Civil Defense Director. Roll call vote: 8 ayes. Ordinance No. 5243 passed.

Moved by Council Member Johnson, seconded by Council Member Navarrette to approve Resolution No. 2012-108 authorizing the Interlocal Agreement with Region 5/6 for Civil Defense Director. Roll call vote: 8 ayes. Motion carried.

Moved by Council Member Gitt, seconded by Council Member Anderson to approve Resolution No. 2012-109 relating to Airport Advisory Committee appointments. Roll call vote: 8 ayes. Motion carried.

Moved by Council Member Bixby, seconded by Council Member Navarrette to adjourn the meeting. Roll call vote: 8 ayes. Meeting adjourned at 7:28 p.m.

Scott

Getzschman, Mayor

Attest: Kimberly Volk, MMC, City Clerk

I, Kimberly Volk, the undersigned City Clerk, hereby certify that the foregoing is a true and correct copy of the proceedings had and done by the Mayor and Council; that all of the subjects included in the foregoing proceedings were contained in the agenda for the meeting, kept continually current and available for public inspection at the office of the Clerk; that such agenda items were sufficiently descriptive to give the public reasonable notice of the matters to be considered at the meeting; that such subjects were contained in said agenda for at least twenty-four hours prior to said meeting; that at least one copy of all reproducible material discussed at the meeting was available at the meeting for examination and copying by members of the public; that the said minutes were in written form and available for public inspection within ten working days and prior to the next convened meeting of said body; that all news media requesting notification concerning meetings of said body were provided advance notification of the time and place of said meeting and the subjects to be discussed at said meeting and that a current copy of the Nebraska Open Meetings Act was available and accessible to members of the public, posted during such meeting in the room in which such meeting was held.

Kimberly Volk, MMC, City Clerk

## Public Comments and Response

No Public Comments at Board of Public Works Meeting

No Public Comments at City Council Meeting