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City of Rapid City

2011 Annual Energy Report for City Buildings and Facilities

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INTRODUCTION

It is estimated the City of Rapid City could conservatively save $300,000 annually, at little or no cost, by following the operational and behavioral guidelines outlined in the City Energy Policy. Studies and experience have shown that these operational and behavioral changes result in a 10-50% annual savings in energy use and costs.

An estimated additional $300,000 annual savings could be achieved by making capital investments in higher efficiency lighting, hvac and facility equipment for existing City buildings and facilities. Most improvements and upgrades to mechanical and electrical systems result in a 10-50% improvement in efficiency. Most of these improvements would pay for themselves in less than 10 years.

The following report is presented to show the City's total annual cost of energy used and how these costs and the associated use have grown compared to the City population growth and inflation. This information is presented to help the City of Rapid City elected officials determine priorities in upgrading and/or replacing City facilities.

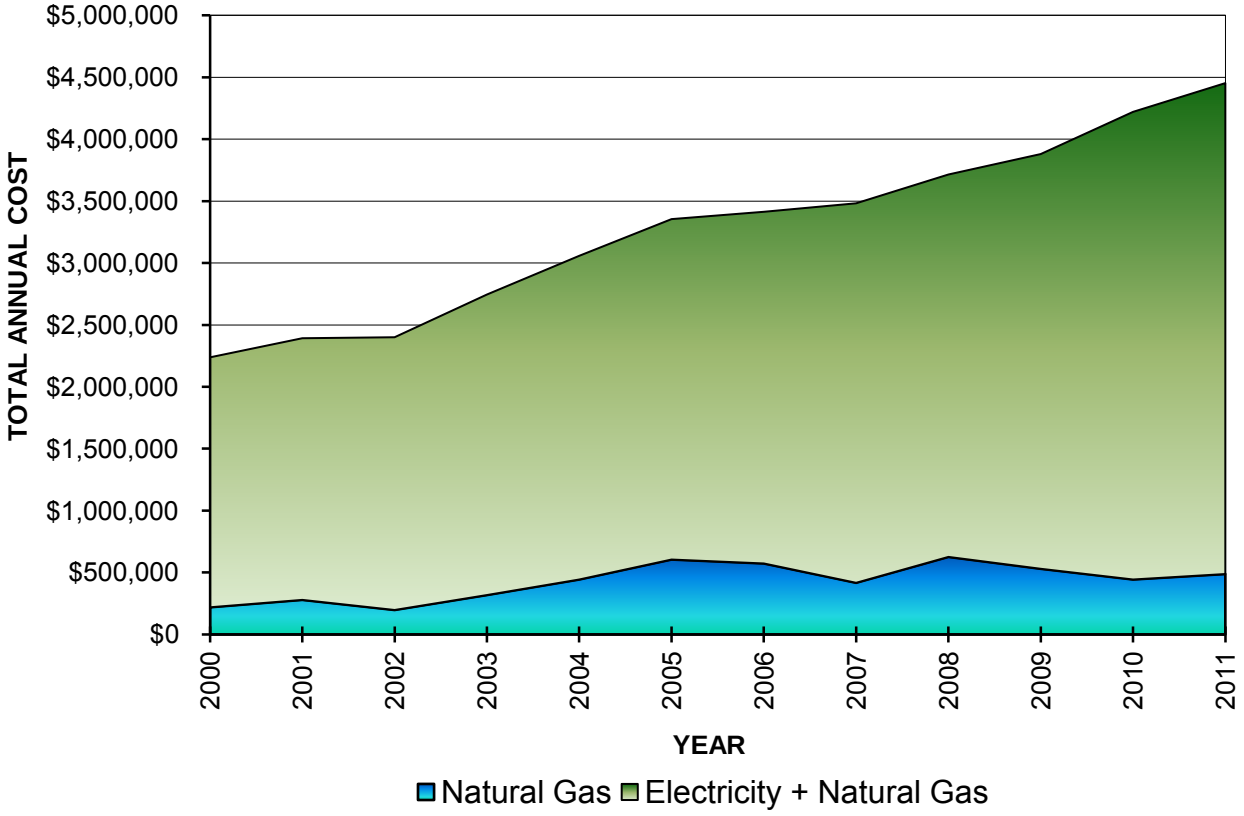
If you have specific questions please contact me, Gunar Dzintars, office phone 394-2660, gunar.dzintars@rcgov.org, or the Department Head that oversees the building you are interested in. Graphs, and energy use and cost information for specific Departments, Divisions, buildings and facilities can be provided upon request.

CITY OF RAPID CITY'S 2011 TOTAL UTILITY COSTS

Electricity	***$ 3,964,677***
Natural Gas	***$ 488,212***
Heating Fuel Oil	***$ 2,911***
Grand Total	***$ 4,455,800***

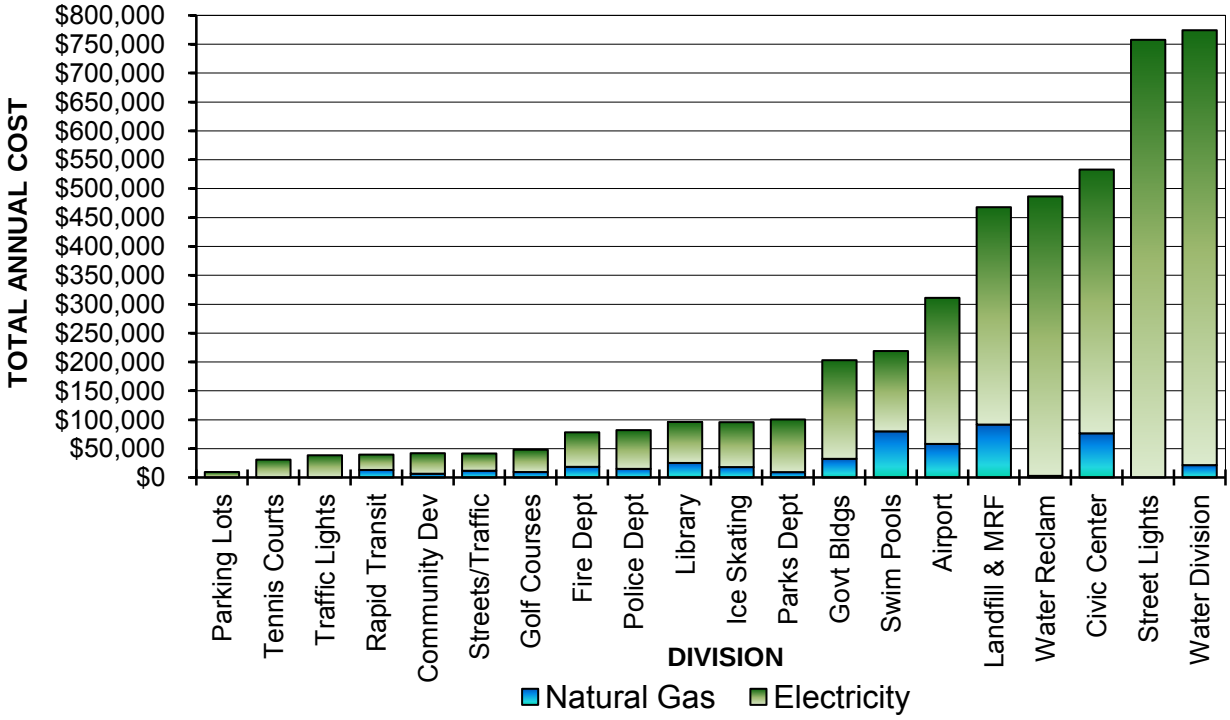
CITY OF RAPID CITY TOTAL ANNUAL UTILITY COST HISTORY

The following graph shows an 11-year history of the total annual costs paid for electricity and natural gas by the City of Rapid City.



CITY OF RAPID CITY DEPT./DIVISION 2011 UTILITY COSTS

This graph and the accompanying table shows the 2011 Utility Costs by Dept./Division. The electricity and natural gas costs are shown individually in the graph bars.



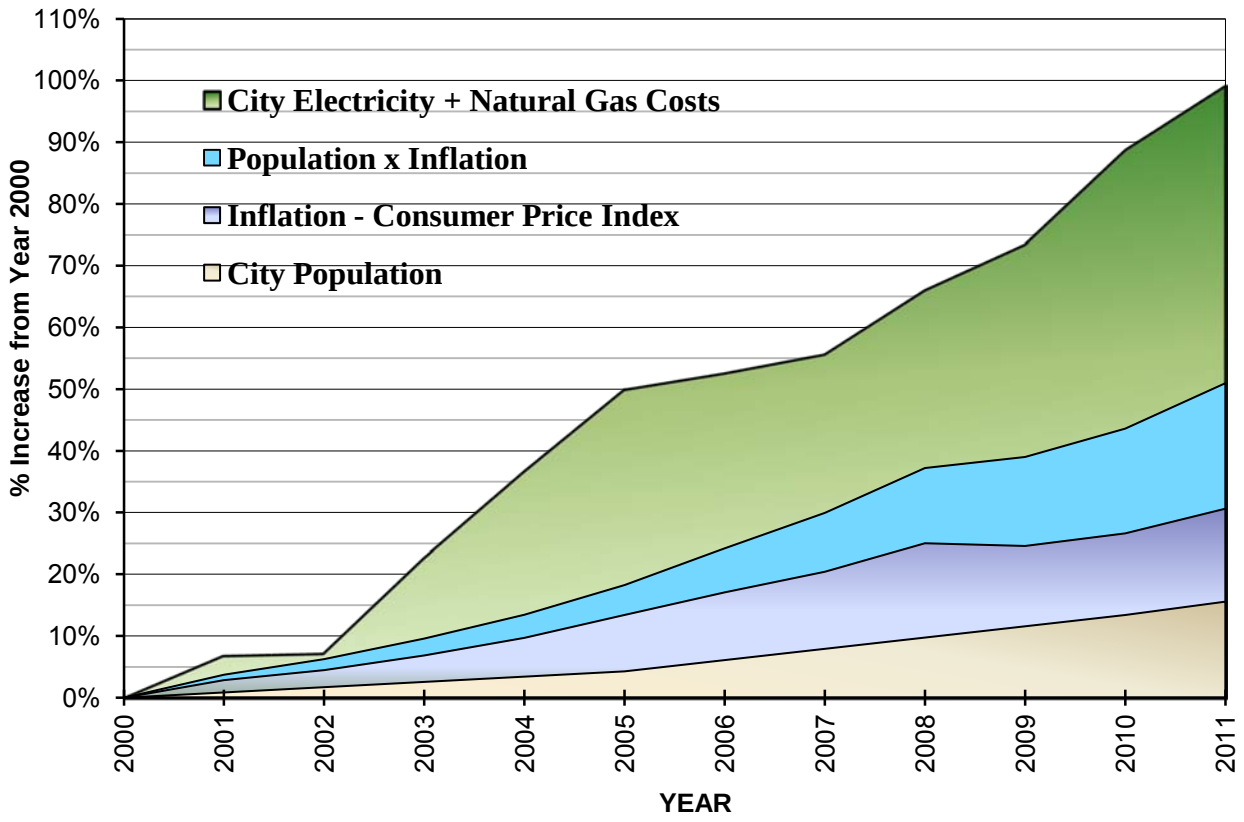
Rank	Dept./Division Name	Electricity Cost	Natural Gas Cost	Total Cost
1	Parking Lots	$9,442.19	------	$9,442.19
2	Tennis Courts	$30,835.18	------	$30,835.18
3	Traffic Lights	$38,418.68	------	$38,418.68
4	Rapid Transit	$26,587.41	$12,966.48	$39,553.89
5	Community Dev	$35,515.51	$6,470.72	$41,986.23
6	Streets/Traffic	$29,855.57	$11,639.55	$41,495.12
7	Golf Courses	$38,576.72	$9,418.32	$47,995.04
8	Fire Dept	$59,719.14	$18,413.44	$78,132.58
9	Police Dept	$67,065.43	$14,863.56	$81,928.99
10	Library	$70,888.07	$25,106.19	$95,994.26
11	Ice Skating	$77,703.61	$17,988.52	$95,692.13
12	Parks Dept	$91,092.95	$9,256.14	$100,349.09
13	Govt Bldgs	$170,705.87	$32,236.44	$202,942.31
14	Swim Pools	$139,028.60	$79,787.12	$218,815.72
15	Airport	$252,802.59	$58,038.84	$310,841.43
16	Landfill & MRF	$376,225.86	$91,530.32	$467,756.18
17	Water Reclam	$483,626.99	$2,760.88	$486,387.87
18	Civic Center + EP	$456,503.09	$76,378.05	$532,881.14
19	Street Lights	$757,401.99	------	$757,401.99
20	Water Division	$752,681.09	$21,357.79	$774,038.88
GRAND TOTAL		**$3,964,676.54**	**$488,212.36**	**$4,452,888.90**

CITY OF RAPID ANNUAL % INCREASES VS. CITY UTILITY COSTS % INCREASE

The following graph compares the percentage increase in the City of Rapid City's total annual electricity plus natural gas costs vs. the percentage increases in inflation and the City population.

This is a measure of how efficient the City is doing at reducing its energy costs while providing services to an increasing population. The increase since the year 2000 in population x inflation has been 51% vs. a 99% increase in utility costs.

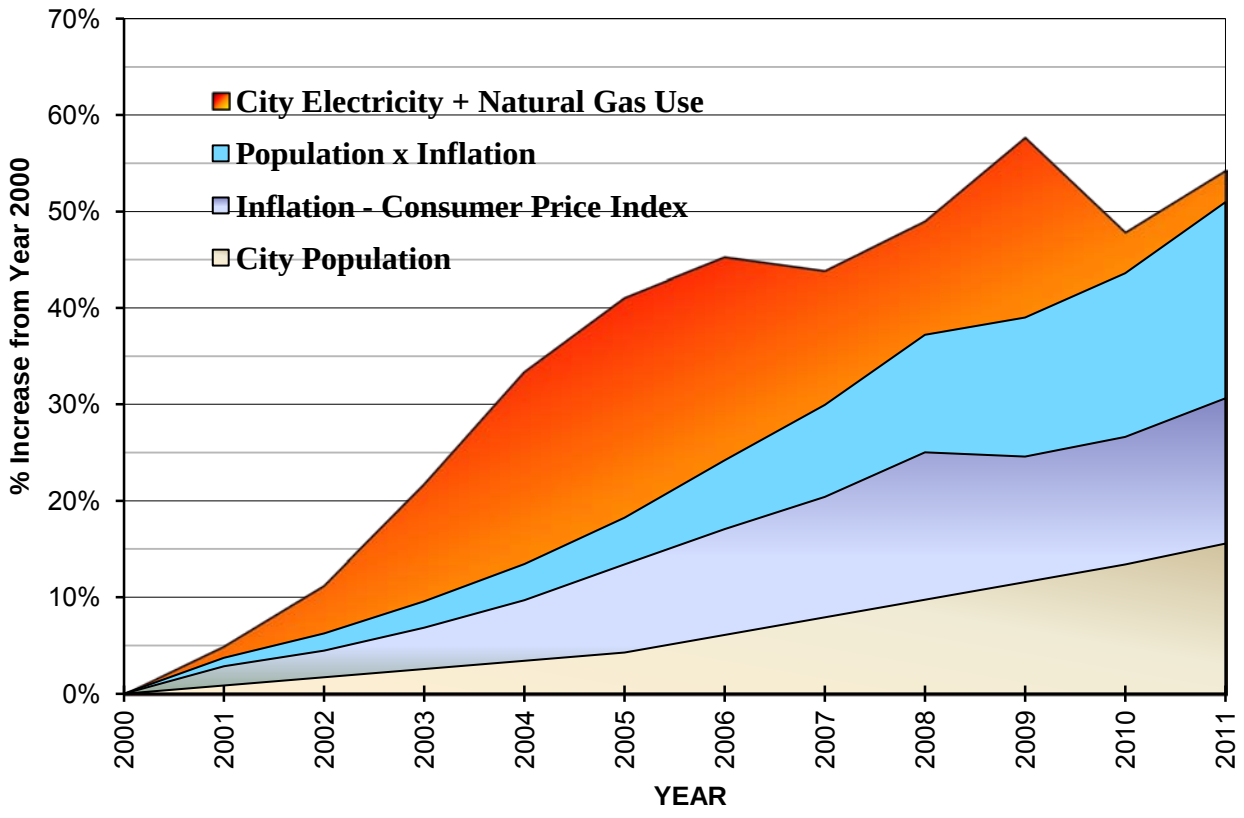
A more aggressive approach in reducing energy use and the associated costs is warranted. The goal should be to reduce energy costs so they require a lesser percentage of the total budget. At a minimum the energy costs percentage of the total budget should remain the same.



CITY OF RAPID ANNUAL % INCREASES VS. CITY UTILITY USE % INCREASE

The following graph compares the percentage increase in the City of Rapid City's total annual electricity plus natural gas use vs. the percentage increases in inflation and the City population.

This is a measure of how efficient the City is doing at reducing its energy use while providing services to an increasing population. The increase since the year 2000 in population x inflation has been 51% vs. a 54% increase in utility use. This graph shows that the City is doing a less than average job of matching utility use to population x inflation increase. An aggressive approach in following the City Energy Policy would result in estimated energy use 10% below the population x inflation increase.



Explanation of Graph Variations

2010 – The prevailing two reasons for the reduced energy use in this year appear to be that December was unusually mild and the increased electricity rates caused increased conservation.