MEMORANDUM

DATE: February 24, 2012

TO: Georganne Myers, Energy Services

FROM: Robin Bobzien, City Engineer/PWD

RE: 5-year Small Customer Plan Report for the City of Aberdeen, SD

Attached you will find the updated spreadsheet for the City of Aberdeen's Booster Station, NW Lift Station and Ordway Water Treatment facilities power usage for the past 5 plus years .

As stated in our original Small Customer Plan proposal, the City would attempt to utilize higher efficiency equipment as equipment is replaced. The following items are examples of higher efficiency improvements that have been implemented:

Energy Audit	An energy audit sponsored by the EPA was completed at the Water Treatment Plant in 2011. Many of the suggested improvements are not compatible with our water treatment operation, but we will look into the possibility of motion sensor lighting in areas of the plant with low employee population.
Boiler Replacement	The boiler was replaced in the old building at the Water Treatment Plant in 2011. It has not yet been determined if there will be a noticeable energy savings due to the new boiler's higher efficiency.
Pump Renovations	Pump renovations for the three sewage pumps at NW Lift Station in 2010. We will continue to look at power factor corrections in the future including the Northwest Holding Pond in 2012.
Lighting Improvements	More efficient fluorescent lighting has been installed in several non-wapa locations and as the T-12 fluorescent lighting at the Booster Station and the Water Plant becomes obsolete, we will look at replacement with T-8 or more efficient lighting. We will also be looking at replacing the high pressure sodium outdoor lighting with higher efficiency LED as funds become available.
Emergency Generators	Installation of emergency generators at the Booster Station and NW Lift in 2010.

Variable Frequency Drives	Variable frequency drive installation in 2008 at Booster Station. This VFD is currently in need of a new mother board to be replaced in 2012. In the future we will continue to install variable frequency drives for appropriate applications as funds are available.

If you have any questions or need anything further please let me know.

Sincerely,

Robin Bobzien, PE
City Engineer/PWD

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ABERDEEN, SOUTH DAKOTA
WESTERN AREA POWER SUMMARY
SUMMARY PERIOD 2005-2011

	ABERDEEN BOOSTER STATION 2011					ABERDEEN ORDWAY 2011		
	Total Energy KWH	Peak Dem. KW	Avg Power Factor #1	Avg Power Factor #2		Total Energy KWH	Peak Dem. KW	Avg Power Factor
JANUARY	66,986	248	0.946	0.936		288,216	489	
FEBRUARY	63,619	201	0.938	0.918		258,120	471	
MARCH	69,912	206	0.945	0.919		290,592	491	0.908
APRIL	65,046	200	0.941	0.917		233,395	408	0.887
MAY	65,550	196	0.904	0.912		212,371	366	0.858
JUNE	76,984	185	0.824	0.948		215,021	380	0.855
JULY	83,342	231	0.887	0.946		215,424	374	0.858
AUGUST	110,134	232	0.709	0.955		226,310	392	0.886
SEPTEMBER	91,596	233	0.696	0.951		213,350	359	0.874
OCTOBER	70,700	174	0.734	0.929		211,795	347	0.929
NOVEMBER	58,883	187	0.801	0.912		249,638	452	0.901
DECEMBER	64,800	198	0.901	0.914		282,643	575	0.917
2011 TOTALS	**887,552**					**2,896,875**		
2011 AVERAGE	73,963					241,406		

	ABERDEEN BOOSTER STATION 2010					ABERDEEN ORDWAY 2010		
	Total Energy KWH	Peak Dem. KW	Avg Power Factor #1	Avg Power Factor #2		Total Energy KWH	Peak Dem. KW	Avg Power Factor
JANUARY	76596	258	0.873	0.921		318298	570	0.932
FEBRUARY	66391	250	0.871	0.920		276941	536	0.930
MARCH	71956	194	0.841	0.917		270835	515	0.917
APRIL	66436	183	0.745	0.916		214330	414	0.883
MAY	72217	238	0.753	0.914		208109	338	0.852
JUNE	74692	239	0.683	0.919		177754	357	0.853
JULY	99925	235	0.655	0.925		178963	348	0.870
AUGUST	121335	234	0.606	0.933		249005	431	0.877
SEPTEMBER	78561	235	0.652	0.932		216806	391	0.873
OCTOBER	70992	227	0.676	0.952		211450	376	0.878
NOVEMBER	30597	245	0.818	0.945		245088	471	0.902
DECEMBER	65057	192	0.912	0.942		293357	529	
2008 TOTALS	**894,755**					**2,860,936**		
2008 AVERAGE	74,563					238,411		

ABERDEEN BOOSTER STATION
2009

	Total Energy KWH	Peak Dem. KW	Avg Power Factor #1	Avg Power Factor #2
JANUARY	67,519	194	0.871	0.918
FEBRUARY	57,918	168	0.853	0.945
MARCH	61,038	269	0.823	0.943
APRIL	56,952	211	0.762	0.944
MAY	81,893	231	0.664	0.943
JUNE	87,137	231	0.952	0.952
JULY	99,034	236	0.656	0.953
AUGUST	100,756	230	0.645	0.954
SEPTEMBER	78,853	230	0.645	0.953
OCTOBER	67,325	235	0.769	0.953
NOVEMBER	65,189	237	0.801	0.947
DECEMBER	81,950	218	0.953	0.919
2007 TOTALS	**905,564**			
2007 AVERAGE	75,464			
2007 TOTALS	**1,700,117**			
2007 AVERAGE	141,676			

ABERDEEN ORDWAY
2009

	Total Energy KWH	Peak Dem. KW	Avg Power Factor
JANUARY	289,325	485	0.942
FEBRUARY	254,189	452	0.938
MARCH	260,294	479	0.938
APRIL	203,616	409	0.933
MAY	199,123	361	0.946
JUNE	216,806	377	0.697
JULY	228,845	394	0.956
AUGUST	225,965	386	0.957
SEPTEMBER	190,080	359	0.940
OCTOBER	212,026	364	0.930
NOVEMBER	224,986	402	0.928
DECEMBER	293,357	529	0.936
2007 TOTALS	**2,798,612**		
2007 AVERAGE	233,218		
2007 TOTALS	**5,026,634**		
2007 AVERAGE	418,886		

ABERDEEN BOOSTER STATION
2008

	Total Energy KWH	Peak Dem. KW	Avg Power Factor #1	Avg Power Factor #2
JANUARY	69,599	194	0.893	0.917
FEBRUARY	66,098	198	0.953	0.918
MARCH	64,413	187	0.818	0.913
APRIL	59,834	179	0.650	0.913
MAY	80,575	232	0.622	0.922
JUNE	95,805	233	0.621	0.946
JULY	131,055	296	0.634	0.957
AUGUST	101,180	229	0.632	0.955
SEPTEMBER	77,262	266	0.609	0.952
OCTOBER	62,214	235	0.672	0.910
NOVEMBER	58,486	224	0.689	0.942
DECEMBER	67,400	196	0.865	0.919
2008 TOTALS	**933,921**			
2008 AVERAGE	77,827			

ABERDEEN ORDWAY
2008

	Total Energy KWH	Peak Dem. KW	Avg Power Factor
JANUARY	288,346	461	0.949
FEBRUARY	265,766	463	0.941
MARCH	260,122	425	0.948
APRIL	220,550	407	0.938
MAY	218,822	374	0.942
JUNE	218,189	420	0.946
JULY	261,907	491	0.946
AUGUST	237,370	396	0.943
SEPTEMBER	202,061	333	0.950
OCTOBER	204,192	348	0.926
NOVEMBER	241,402	431	0.935
DECEMBER	295,085	494	0.943
2008 TOTALS	**2,913,812**		
2008 AVERAGE	242,818		

ABERDEEN BOOSTER STATION
2007

	Total Energy KWH	Peak Dem. KW	Avg Power Factor #1	Avg Power Factor #2
JANUARY	66,955	194	0.888	0.916
FEBRUARY	62,355	208	0.907	0.917
MARCH	65,898	188	0.840	0.915
APRIL	67,128	190	0.863	0.916
MAY	75,799	303	0.810	0.914
JUNE	77,883	177	0.693	0.917
JULY	134,955	235	0.585	0.938
AUGUST	110,318	233	0.575	0.931
SEPTEMBER	85,691	230	0.591	0.922
OCTOBER	67,823	173	0.696	0.913
NOVEMBER	60,037	186	0.819	0.910
DECEMBER	66,304	251	0.877	0.916
2007 TOTALS	**941,146**			
2007 AVERAGE	78,429			

ABERDEEN ORDWAY
2007

	Total Energy KWH	Peak Dem. KW	Avg Power Factor
JANUARY	256,896	441	0.939
FEBRUARY	235,584	433	0.935
MARCH	246,816	415	0.945
APRIL	212,256	399	0.940
MAY	171,533	305	0.938
JUNE	170,208	326	0.947
JULY	205,404	406	0.938
AUGUST	232,566	401	0.950
SEPTEMBER	202,522	358	0.940
OCTOBER	203,616	333	0.935
NOVEMBER	235,930	415	0.928
DECEMBER	281,952	453	0.940
2007 TOTALS	**2,655,283**		
2007 AVERAGE	221,274		

ABERDEEN BOOSTER STATION
2006

	Total Energy KWH	Peak Dem. KW	Avg Power Factor #1	Avg Power Factor #2
JANUARY	60,645	181	0.812	0.910
FEBRUARY	56,119	187	0.848	0.911
MARCH	59,874	236	0.798	0.909
APRIL	58,632	175	0.680	0.909
MAY	76,826	231	0.650	0.917
JUNE	111,545	240	0.627	0.931
JULY	147,236	236	0.603	0.946
AUGUST	119,682	237	0.663	0.935
SEPTEMBER	75,342	171	0.611	0.918
OCTOBER	64,990	185	0.760	0.911
NOVEMBER	60,615	248	0.839	0.910
DECEMBER	65,620	192	0.875	0.915
2006 TOTALS	**957,126**			
2006 AVERAGE	79,761			

ABERDEEN ORDWAY
2006

	Total Energy KWH	Peak Dem. KW	Avg Power Factor
JANUARY	240,480	475	0.959
FEBRUARY	249,869	583	0.948
MARCH	258,902	444	0.943
APRIL	217,843	402	0.943
MAY	221,990	377	0.941
JUNE	224,410	448	0.957
JULY	235,582	455	0.927
AUGUST	235,118	465	0.943
SEPTEMBER	191,981	361	0.926
OCTOBER	211,046	358	0.940
NOVEMBER	227,520	401	0.947
DECEMBER	244,512	412	0.942
2006 TOTALS	**2,759,253**		
2006 AVERAGE	229,938		

	ABERDEEN BOOSTER STATION 2005					ABERDEEN ORDWAY 2005		
	Total Energy KWH	Peak Dem. KW	Avg Power Factor #1	Avg Power Factor #2		Total Energy KWH	Peak Dem. KW	Avg Power Factor
JANUARY	64,571	189	0.874	0.915		139,433	249	0.883
FEBRUARY	55,248	182	0.829	0.912		110,592	200	0.870
MARCH	59,720	181	0.817	0.911		116,122	190	0.911
APRIL	65,515	238	0.704	0.915		91,699	174	0.910
MAY	76,676	184	0.712	0.918		88,301	180	0.899
JUNE	76,085	205	0.744	0.917		80,410	237	0.895
JULY	115,526	235	0.676	0.932		108,230	233	0.936
AUGUST	110,156	288	0.642	0.944		113,126	237	0.974
SEPTEMBER	88,996	233	0.667	0.922		114,854	230	0.951
OCTOBER	77,240	205	0.913	0.913		140,947	295	0.950
NOVEMBER	66,514	232	0.900	0.917		182,131	459	0.961
DECEMBER	63,434	185	0.866	0.912		260,122	525	0.970
2005 TOTALS	**919,681**					**1,545,967**		
2005 AVERAGE	76,640					128,831		
2005 AVERAGE	6,387					10,736		

WESTERN AREA POWER SUMMARY
CITY OF ABERDEEN, SOUTH DAKOTA
TOTAL ENERGY (KWH) USAGE

ABERDEEN BOOSTER STATION

	2011	2010	2009	2008	2007	2006	2005	2004
JANUARY	66,986	76596	67519	69599	66955	60645	64571	65,179
FEBRUARY	63,619	66391	57918	66098	62355	56119	55248	60,512
MARCH	69,912	71956	61038	64413	65898	59874	59720	59,853
APRIL	65,046	66436	56952	59834	67128	58632	65515	66,237
MAY	65,550	72217	81893	80575	75799	76826	76676	76,168
JUNE	76,984	74692	87137	95805	77883	111545	76085	75,438
JULY	83,342	99925	99034	131055	134955	147236	115526	91,076
AUGUST	110,134	121335	100756	101180	110318	119682	110156	100,259
SEPTEMBER	91,596	78561	78,853	77262	85691	75342	88996	81,184
OCTOBER	70,700	70992	67,325	62214	67823	64990	77240	67,057
NOVEMBER	58,883	30597	65,189	58486	60037	60615	66514	58,936
DECEMBER	64,800	65057	81,950	67400	66304	65620	63434	61,632
YEARLY TOTALS	**887,552**	**894,755**	**905,564**	**933,921**	**941,146**	**957,126**	**919,681**	**863,531**
MONTHLY AVG.	73,963	74,563	75,464	77,827	78,429	79,761	76,640	71,961

ABERDEEN ORDWAY

	2011	2010	2009	2008	2007	2006	2005	2004
JANUARY	288,216	318298	289325	288346	256896	240480	139433	97,747
FEBRUARY	258,120	276941	254189	265766	235584	249869	110592	95,501
MARCH	290,592	270835	260294	260122	246816	258902	116122	100,397
APRIL	233,395	214330	203616	220550	212256	217843	91699	115,373
MAY	212,371	208109	199123	218822	171533	221990	88301	116,410
JUNE	215,021	177754	216806	218189	170208	224410	80410	102,701
JULY	215,424	178963	228845	261907	205404	235582	108230	111,514
AUGUST	226,310	249005	225965	237370	232566	235118	113126	120,499
SEPTEMBER	213,350	216806	190,080	202061	202522	191981	114854	109,152
OCTOBER	211,795	211450	212,026	204192	203616	211046	140947	99,994
NOVEMBER	249,638	245088	224,986	241402	235930	227520	182131	87,034
DECEMBER	282,643	293357	293,357	295085	281952	244512	260122	88,660
YEARLY TOTALS	**2,896,875**	**2,860,936**	**2,798,612**	**2,913,812**	**2,655,283**	**2,759,253**	**1,545,967**	**1,244,982**
MONTHLY AVG.	241,406	238,411	233,218	242,818	221,274	229,938	128,831	103,749