

**MONTANA-DAKOTA UTILITIES CO.  
GAS UTILITY - NORTH DAKOTA  
EMBEDDED CLASS COST OF SERVICE STUDY - STAFF MODIFIED  
SUMMARY REPORT  
PROJECTED 2005**

Projected Operating Income and Rate of Return	Total North Dakota 1/	Residential	Firm General	Air Force	Small Interruptible	Large Interruptible
Operating Revenues	\$ 120,495,896	\$ 67,042,296	\$ 44,166,358	\$ 4,988,829	\$ 3,901,148	\$ 397,265
Operating Expenses						
O&M Cost of Purchased Gas	99,473,000	53,653,000	37,819,000	4,860,000	3,141,000	-
Other O&M Expense	17,546,702	11,560,057	5,089,430	86,844	572,847	237,524
Total Operation & Maint. Exp.	\$ 117,019,702	\$ 65,213,057	\$ 42,908,430	\$ 4,946,844	\$ 3,713,847	\$ 237,524
Depreciation	2,615,003	1,456,453	949,123	11,562	133,291	64,574
Taxes Other Than Income Taxes	1,420,999	862,836	461,343	7,466	59,979	29,375
Fed. & State Inc. Taxes - Current	262,293	69,772	122,709	27,120	16,013	26,679
Deferred Income Taxes	(872,992)	(474,870)	(321,752)	(20,392)	(38,302)	(17,676)
Total Operating Expenses	\$ 120,445,005	\$ 67,127,248	\$ 44,119,853	\$ 4,972,600	\$ 3,884,828	\$ 340,476
Operating Income	50,891	(84,952)	46,505	16,229	16,320	56,789
Rate Base	\$ 20,914,271	\$ 11,364,958	\$ 7,375,276	\$ 126,982	\$ 1,048,114	\$ 998,941
Rate of Return	0.243%	-0.747%	0.631%	12.781%	1.557%	5.685%

1/ North Dakota allocations held to the level of Statement M, even though the change in Mains allocators would have resulted in small changes in jurisdictional allocations.

**MONTANA-DAKOTA UTILITIES COMPANY  
PIPE COST VARIABILITY**

**PLASTIC PIPE - Years Compositied 1999-2003**

Diameter	Area	Investment	Length	Cost per Foot
1.25	1.227	138,260	62,419	\$ 2.22
2	3.140	1,568,236	568,588	\$ 2.76
3	7.065	45,646	12,886	\$ 3.54
4	12.560	718,964	127,653	\$ 5.63
6	28.260	253,612	35,600	\$ 7.12

Independent variable is Area. Dependent variable is Cost per Foot

CorCoef 0.961322  
Intercept 2.344862  
Slope 0.182717

Diameter	Area	Area*Slope @ .182717	Feet	Variable Investment	Actual Investment	Percent Variable
1.25	1.227	0.224194	62,419	\$ 13,994	\$ 138,260	
2	3.14	0.573731	568,588	\$ 326,217	\$ 1,568,236	
3	7.065	1.290896	12,886	\$ 16,634	\$ 45,646	
4	12.56	2.294926	127,653	\$ 292,954	\$ 718,964	
6	28.26	5.163582	35,600	\$ 183,824	\$ 253,612	
Total			807,146	\$ 833,623	\$ 2,724,718	30.6%

**STEEL PIPE - Years Compositied 1999-2003**

Diameter	Area	Investment	Length	Cost per Foot
1.25	1.227	21,377	3,164	\$ 6.76
2	3.140	56,369	5,973	\$ 9.44
3	7.065	407	200	\$ 2.03
4.5	15.896	260,461	10,989	\$ 23.70
6	28.260	215,512	11,850	\$ 18.19
8	50.240	350,086	17,664	\$ 19.82
12	113.040	42,382	49	\$ 864.93

Independent variable is Area. Dependent variable is Cost per Foot

CorCoef 0.909404  
Intercept -94.2352  
Slope 7.330963

Source: MDU Response to Staff DR. No. 1, Q. 56.