Appendix A: Copy of Survey
"Energy Consumption, Materials, and Costs to Treat Wastewater and Water in Iowa"
Conducted by Iowa Association of Municipal Utilities
Funded by the Iowa Energy Center and the Iowa Association of Municipal Utilities

PLEASE COMPLETE THIS SURVEY ONLY IF YOU MANAGE/ OPERATE A WASTEWATER AND/OR WATER TREATMENT PLANT

If you do not manage/operate such a facility return the survey to us in the enclosed envelope.

- If you provide both **WASTEWATER** and **WATER** treatment please fill out <u>all</u> **Sections** of this survey.
- If you provide **WASTEWATER** treatment only, fill out **Sections I, III, and IV.**
- If you provide **WATER** treatment only, fill out **Sections II, III, and IV.**

(Please circle appropriate response(s) and provide information when necessary)

Section I. Wastewater Treatment

Where do you discharge your treated wastewater? (Circle all that apply)

1 = Surface Water, if yes name of lake, river, etc.

2 = Groundwater

3 = Evaporation

4 = No Discharge

2. What are your sources of wastewater? (Circle all that apply)

1 = Residential

2 = Commercia

3 = Industrial

4 = Agricultural

5 = Stormwater

6= Other Please specify_____ _____

3. If you included stormwater in your response to question 2, is your stormwater combined with your wastewater for treatment?

1 = Yes 2 = No

If your response to question 3 is " no", where does the stormwater go? (Options continue on next page)

Treatment Type	Used	Not Used
Sedimentation Basin		2
b. Wetland		?

Treatment Type	Used	Not Used
c. Lagoon		2
d. Direct Discharge to Surface Water		2
e. Other: Specify _____		2

4. What type of wastewater treatment do you use? (Table continues next page)
(Please circle one response (1,2,3,or 8) for each line "a" through "rr".

Type of Treatment	Most Recent Upgrade 0-15 Years Ago	Most Recent Upgrade 16-30 Years Ago	Most Recent Upgrade >31 Years Ago	Do Not Use
Septic Tank Systems:				
a. with aerator	1	2	3	8
b. with drainfield		2	3	8
c. with wetland		2	3	8
d. with mound		2	3	8
e. with sand filter		2	3	8
f. with grinder pumps		2	3	8
g. Septic tank with other soil treatment system Specify _____		2	3	8
h. Gravity-fed system		2	3	8
i. Pressurized system		2	3	8
Primary Treatment:				
j. Screens/Bars		2	3	8
k. Comminuter/Barminuter		2	3	8
l. Grit Removal		2	3	8
m. Primary Clarification		2	3	8
n. Other: Specify_____		2	3	8
Secondary Treatment:				
o. Activated Sludge		2	3	8
p. Trickling Filter		2	3	8
q. Oxidation Ditches		2	3	8
r. Rotating Biological Contactor		2	3	8
s. Ponds and Lagoons		2	3	8
t. Bio-Towers		2	3	8
u. Secondary Clarification		2	3	8
v. Wetlands		2	3	8
w. Sequenching Batch Reactor (SBR)		2	3	8
x. Dissolved Air Flotation Basin (DAF)		2	3	8
y. Other: Specify_____		2	3	8
Disinfection:				
z. Chlorination (Gas)		2	3	8
aa. Sodium Hypochlorite		2	3	8
bb. Calcium Hypochlorite		2	3	8
cc. Ozonation		2	3	8
dd. Other: Specify_____		2	3	8

Type of Treatment	Most Recent Upgrade 0-15 Years Ago	Most Recent Upgrade 16-30 Years Ago	Most Recent Upgrade >31 Years Ago	Do Not Use
Biosolids Management:				
ee. Biosolids Thickner		2	3	8
ff. Biosolids Digestor		2	3	8
gg. Biosolids Drying Beds		2	3	8
hh. Land Disposal of Biosolids		2	3	8
ii. Mechanical Dewatering		2	3	8
jj. Incineration		2	3	8
kk. Other: Specify_____		2	3	8
Other Treatment Options:				
ll. Spray Irrigation	1	2	3	8
mm.Rapid Infiltration	1	2	3	8
nn. Other: Specify_____		2	3	8
Tertiary Treatment:				
oo. Air Stripping for nitrogen removal		2	3	8
pp. Nitrification-denitrification for nitrogen removal		2	3	8
qq. Phosphorus removal using chemical precipitation		2	3	8
rr. Other: Specify_____		2	3	8

5. What is the design treatment capacity in million gallons per day (mgd) for your system?

_____ mgd

6. How many actual million gallons per day on average are treated at your facility?

_____mgd

Section II. Water Treatment

What is your source of drinking water? (Circle all that apply)

= Surface water, specify source

= Groundwater obtained from shallow wells, specify aquifer

3 = Groundwater obtained from deep wells, specify aquifer

4 = Both surface water and groundwater, name of lake, reservoir, river, etc.

5 = Purchase water from other utility: Specify

8. What type of water treatment do you use? (Table continues next page)
(Please circle one response (1,2,3,or 8) for each line "a" through "ff".

Type of Treatment	Most Recent Upgrade 0-15 Years Ago	Most Recent Upgrade 16-30 Years Ago	Most Recent Upgrade >31 Years Ago	Do Not Use
Disinfection:				
a. Chlorine gas		2	3	
b. Sodium Hypochlorite		2		
c. Calcium Hypochlorite		2		8

Type of Treatment	Most Recent Upgrade 0-15 Years Ago	Most Recent Upgrade 16-30 Years Ago	Most Recent Upgrade >31 Years Ago	Do Not Use
d. MIOX™	1	2	3	8
e. Other: Specify _____	1	2	3	8
Fluoridation:				
f. Sodium Fluoride	1	2	3	8
g. Hydrofluorosilicic Acid	1	2	3	8
h. Sodium Fluorosilicate		2	3	8
i. Other: Specify_____	1	2	3	8
Iron Removal:				
j. Iron Removal Using Aeration		2	3	8
k. Iron Sequestration Using Potassium Permanganate		2	3	8
Chemical Sedimentation:				
l. Chemical Coagulation		2	3	8
m. Flocculation		2	3	8
n. Sedimentation		2	3	8
o. Filtration-Gravity		2	3	8
p. Filtration-Pressure		2	3	8
q. Other: Specify_____		2	3	8
Cation and Anion:				
r. Ion Exchange		2	3	8
s. Anion Exchange		2	3	8
t. Softening-Lime		2	3	8
u. Softening-Zeolite		2	3	8
v. Reverse Osmosis		2	3	8
w ElectrodialysisReversal Process (EDR)		2	3	8
x. Activated Alumina Process		2	3	8
y. Other: Specify_____		2	3	8
Treatment Bi-Product Management:				
z. Treatment Bi-Product Thickener		2	3	8
aa. Land Disposal of Treatment Bi-Product		2	3	8
bb. Mechanical Dewatering		2	3	8
cc. Land Application		2	3	8
dd. Landfilling		2	3	8
ee. Discharge to River		2	3	8
ff. Other: Specify_____		2	3	8

What is the design treatment capacity in million gallons per day for your system?

_____mgd

10. How many actual million gallons per day on average are treated at your facility?

_____mgd

Section III. Costs Associated With Wastewater and Water Treatment

11. How many customers do you bill for each category below?

Treatment Facility	Residential	Commercial	Industrial	Other
Wastewater				
Water				

12. What was your most recent fiscal year budget for your treatment system and collection and/or distribution system?

1= Wastewater treatment plant $_____ 2 = Wastewater collection system $

3 = Water treatment plant $_____ 4 = Water distribution system $_____

13. For your most recent fiscal year, what did you budget for the following for treatment only? (Exclude distribution system)
Note: If your wastewater and water are combined, please estimate the amount for each.

Budget Item	Wastewater Treatment	Water Treatment
a. Direct Labor Costs (operators, lab personnel, and billing clerk, wages and fringes, also includes staff labor for capital improvements and training)	$_____	$____
b. In-plant Equipment Purchases to Maintain Equipment	$	$
c. Annual Maintenance Budget (includes service contracts directly related to treatment, and excludes in-house labor)	$	$_____
d. Supplies (chemicals, laboratory supplies, safety equipment, etc.)	$	$_____
Training and Operator and/or Lab Certification (excludes labor)	$	$_____
f. Capital Replacement Costs (excludes labor)	$	$

Section IV. Electricity and Gas Consumption and Cost

14. Where do you get your energy? (Circle all that apply)

Municipal Utility

:stor Owned Utility

Rural Electric Cooperative

4 Self Generated (Specify

15. Do you have separate electric and/or gas metering for your distribution and/or collection system?

= Yes

2 = No

16. For your wastewater treatment system, please list 1999 total kilowatt hours (kWh) of electricity consumed, total electric costs, total gas consumed, and total gas costs. Then provide the same information for the treatment plant and collection system.
Note: This information can be obtained from your monthly electric and gas bills.

	Total Wastewater System	**Treatment Plant Only**	**Collection System Only**
Electricity:			
a. kWh consumed:	_____		
b. Costs:	$_____	$_____	$_____
c. Gas Consumed			
(Please circle units)*	ccf Mcf Therms		
d. Costs:	$_____	$_____	$_____

7. For your water treatment system, please list 1999 total kilowatt hours (kWh) of electricity consumed, total electric costs, total gas consumed, and total gas costs. Then provide the same information for the treatment plant and distribution system.
Note: This information can be obtained from your monthly electric and gas bills.

	Total Water System	**Treatment Plant Only**	**Distribution System Only**
Electricity:			
a. kWh consumed	_____		
b. Cost	$_____	$_____	$_____
c. Gas Consumed	_____		
(Please circle units)*	ccf Mcf Therms		
d. Costs	$_____	$_____	$_____

* ccf = 100 cubic feet (ft^3) Mcf = 1000 cubic feet (ft^3) 1 Therm = 100,000 btu (approximately 1 ccf)

***If you would like a copy of the final report please indicate here:

Yes, would like a copy of the final report No, don't want a copy of the final report

THANK YOU FOR YOUR TIME