

Ergs, Joules & Such

Notes on Energy Savings for the Rural Water Community and Maybe Others

December 2012

Indicated in a previous article that the National Rural Water Association would wind up 2012 completing a review of selected white papers. I believe it would be useful to finish with a look at our work on wastewater issues. Mike Keegan in recent Rural Water Washington Bullets has correctly, I believe, flagged TMDLs and resultant nutrient limit controversies as one of the hot topics we can look forward to in the water regulatory arena. I believe our white papers may be of assistance to anyone having to deal with these issues.

There are three white papers that deal with wastewater and all may be useful in this context. They are:

- ◆ The Impact Of Clean Water Act Regulations On Small And Rural Wastewater Systems
- ◆ Small Wastewater System Profile

- ◆ Assessing The Impact Of Current And Future TMDA Designations On Small Wastewater Systems

Please note the above and other White Papers can be found on the National Rural Water Association's Web site at <http://www.nrwa.org/benefits/whitepapers/TOC.htm>

The first is a comprehensive look at wastewater regulation under the Clean Water Act (CWA) and clearly shows how the TMDL process fits in the overall regulatory scheme.

The second gives a good picture of a typical small wastewater system with quantitative parameters and an indication of how such systems are being impacted by TMDLs. KRWA points out that there were no systems in Kansas included in this survey. The states involved were Connecticut, Georgia, Kentucky, Mississippi,



Missouri, Montana, Nebraska, New Hampshire, New Mexico, Nebraska, North Carolina, North Dakota, Pennsylvania, Texas, Utah, Washington and Wisconsin.

The third paper takes an in-depth look at TMDLs and small systems and is almost a must read for anyone dealing with this issue. Here are some highlights, especially TMDL related, from all three:

- ◆ The CWA provides that water bodies be assessed for quality against Water Quality Standards and if they don't measure up against one or more standards (impairment) a Total Maximum Daily Load (TMDL) for a contaminant(s) can be established for that body. This TMDL is then apportioned out among the possible contributors (e.g. small ww plants).
- ◆ The typical NRWA wastewater system is either a lagoon or activated sludge system with 1,770 sewer connections, serves 5,277 people, has a monthly residential sewer rate of \$21.53 and is likely not to have a capital improvement plan.
- ◆ Within the 17 states assessed for the profile in the second paper, 58 of the member systems are or will be impacted by a current, planned or proposed TMDL.
- ◆ Of these 11 have or will institute TMDL required upgrades at a projected cost of up to \$15,000,000.

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Estimates of Cost of Compliance

The data presented in the National Rural Water Association "White Paper" entitled *Assessing The Impact Of Current And Future TMDA Designations On Small Wastewater Systems* shows that municipal wastewater point sources and their collection systems are a relatively small percentage of the impairments with the exception of impaired bays and estuaries. Despite this, there continues to be a focus on wastewater plant upgrades and correspondingly significant economic resources being directed toward a source that is not the most significant problem. EPA continually shows non-point sources and air deposition as the largest sources of water quality impairments nationally. Within a given state, impairments from municipal sources may be a leading or significant cause of impairment, but nationally they are not. However costs that will be required of communities to upgrade their wastewater treatment systems are expected to be high and potentially not sustainable for many communities.

- ◆ Based on estimates presented in the third paper, monthly sewer rates in small communities could rise over 100 percent as a result of TMDL required upgrades.

And finally, remember that recent white paper work has shown that based on experience of drinking water systems, the ability to accurately measure low quantities of TMDL parameters such as nutrients, may be open to serious question.

This table below shows the projected costs for wastewater systems to meet Clean Water Act regulations. This table is based on EPA's Clean Watersheds Needs Survey 2004 Report to Congress.

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Assessing the Impacts of Current and Future TMDL Designations on Small Wastewater Systems December 2009

PROJECTED PER STATE UPGRADE COSTS

State	No. of Small Systems*	Potential No. of Small System Upgrades	Projected Per State Small System Upgrade Cost	State	No. of Small Systems*	Potential No. of Small System Upgrades	Projected Per State Small System Upgrade Costs
(# of systems/18558) x 12111		(Potential upgrades x \$6.9 million)		(# of systems/18558) x 12111		(Potential upgrades x \$6.9 million)	
Alabama	151	99	\$679,952,383	Montana	208	136	\$936,623,150
Alaska	No report			Nebraska	522	341	\$2,350,563,868
Arizona	169	110	\$761,006,310	Nevada	57	37	\$256,670,767
Arkansas	443	289	\$1,994,827,191	New Hampshire	87	57	\$391,760,645
California	301	196	\$1,355,401,771	New Jersey	503	328	\$2,265,006,946
Colorado	325	212	\$1,463,473,673	New Mexico	40	26	\$180,119,837
Connecticut	115	75	\$517,844,530	New York	1,100	718	\$4,953,295,507
Delaware	37	24	\$166,610,849	N. Carolina	440	287	\$1,981,318,203
Florida	116	76	\$522,347,526	N. Dakota	No report		
Georgia	61	40	\$274,682,751	Ohio	1,050	685	\$4,728,145,711
Hawaii	18	12	\$81,053,926	Oklahoma	437	285	\$1,967,809,215
Idaho	229	149	\$1,031,186,065	Oregon	209	136	\$941,126,146
Illinois	714	466	\$3,215,139,084	Pennsylvania	1,626	1061	\$7,321,871,359
Indiana	433	283	\$1,949,797,231	Rhode Island	14	9	\$63,041,943
Iowa	920	600	\$4,142,756,242	S. Carolina	92	60	\$414,275,624
Kansas	799	521	\$3,597,893,737	S. Dakota	11	7	\$49,532,955
Kentucky	300	196	\$1,350,898,775	Tennessee	223	146	\$1,004,168,089
Louisiana	311	203	\$1,400,431,730	Texas	1,629	1063	\$7,335,380,346
Maine	165	108	\$742,994,326	Utah	193	126	\$869,078,212
Maryland	274	179	\$1,233,820,881	Vermont	84	55	\$378,251,657
Massachusetts	141	92	\$634,922,424	Virginia	286	187	\$1,287,856,832
Michigan	24	16	\$108,071,902	Washington	222	145	\$999,665,093
Minnesota	298	194	\$1,341,892,783	West Virginia	625	408	\$2,814,372,447
Mississippi	660	431	\$2,971,977,304	Wisconsin	907	592	\$4,084,217,295
Missouri	866	565	\$3,899,594,463	Wyoming	120	78	\$540,359,510

*Clean Watersheds Needs Survey 2004 Report to Congress, US EPA