

wastewater— waste not



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It is hard to imagine that only about 30 years ago thousands of cities around the country discharged raw sewage into rivers, lakes and oceans without many regulatory restrictions. A lot has changed in the last few decades.

Regulations now require that wastewater is treated prior to being discharged back into the environment. While some regions in the U.S. still struggle to protect their water sources from pollution, thanks to technology advancements and effective treatment practices, many facilities now release treated effluent into water bodies with no adverse effect to the environment. This has had a direct impact on the use and disposal practices of biosolids, which are now either landfilled, disposed of at a surface site, incinerated or recycled as a fertilizer.

In recent years, however, the use of biosolids as soil amendments or for land reclamation has increased. This is partly due to communities' efforts to reduce the volume of biosolids that ends up in landfills, but more so because of their nutrient-rich

content. In addition, some facilities have implemented sustainable practices by producing energy from methane generated during solids processing.

For example, the King County, Wash., Wastewater Treatment Division (WTD), which serves about 1.5 million people, runs a biosolids program and has taken a notably sustainable approach. The county's biosolids are recycled as a fertilizer and soil conditioner in agriculture and forestry, and a portion of the biosolids are composted by a private company and sold as GroCo—a soil-enhancing compost—for use in landscaping and gardening.

In the last few years, the county has further diversified its biosolids program by using biosolids as an energy source and establishing aggressive conservation and renewable energy use goals. According to its Regional Wastewater Service Plan 2008 Annual Report, the county plans to achieve two specific goals by 2012: A 10% reduction of energy use based on both the amount of water treated and the level to which it is treated, and to use renewable sources to satisfy 50% of the WTD's energy demand.

As a result, at the South plant, digester gas is being used to fuel a boiler that provides heat for plant processes and buildings. The remainder of the gas is sold to the local natural gas utility. During times of high energy use, a turbine cogeneration system is used to generate supplemental heat and electricity to reduce peak-load utility charges for the plant. According to the county, in 2008, about 0.23 million kW hours of electricity were produced at the South plant, and 2.1 million therms of natural gas were sold to the Puget Sound region utility.

King County is not alone. Many other communities around the country are implementing sustainable wastewater practices. With the advancement of wastewater treatment technologies, the range of different options for biosolids applications seems to be limitless. While it is hard to tell how far future research and technology developments will take us, one thing is certain: Wastewater is a very valuable resource.

If we are to continue to increase the efficient and effective use of water, which in turn will maximize the sustainability of our country's water resources, it is time that we stop regarding wastewater as a "waste" and waste it not.



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