

FOR A CLEAN ENVIRONMENT.

For a Healthy Community.



WESTERN LAKE SUPERIOR SANITARY DISTRICT

MISSION DRIVEN

› The mission of WLSSD is to plan and provide for the effective and economical collection and treatment of wastewater and to ensure responsible solid waste management through effective planning, oversight, education and customer services in order to:

- Protect public health and safety.
- Preserve and ensure the best use of waters, land and natural resources.
- Prevent, control and abate water and solid waste pollution, thereby protecting the St. Louis River basin and Lake Superior.

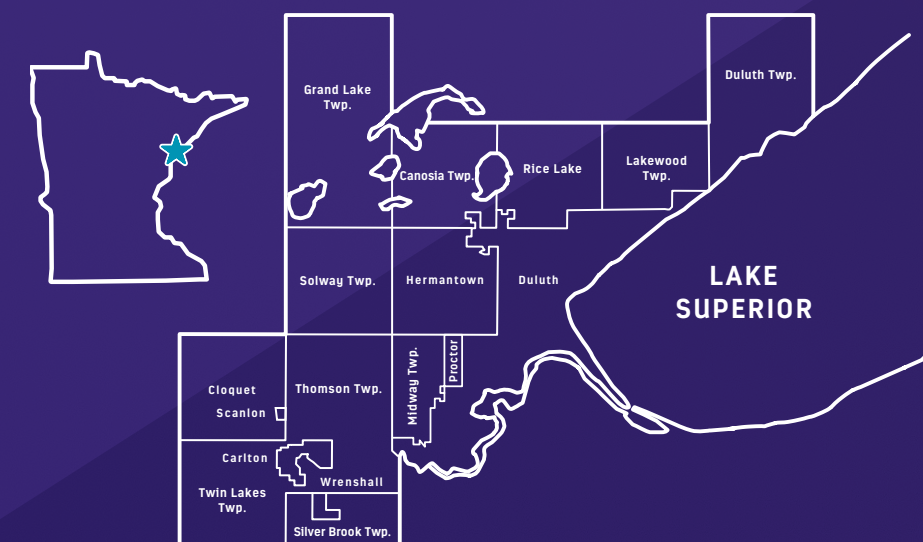
These services will be performed in a manner that exceeds state and federal environmental regulations with a focus on pollution prevention, waste and toxicity reduction, and beneficial reuse and recycling.

WLSSD

A Comprehensive Solution TO **REGIONAL PROBLEMS**

Western Lake Superior Sanitary District (WLSSD) is a special purpose unit of government created by the Minnesota legislature in 1971 to address serious environmental problems in the lower St. Louis River basin. The organization is responsible for treating wastewater and managing solid waste for a 530-square-mile region in northeastern Minnesota, providing services for 17 communities and four large industrial customers.

The dual role of managing wastewater and solid waste for the region makes it possible for WLSSD to offer collaborative solutions to the challenges posed by waste in our society. WLSSD programs have been recognized nationally for innovation and effectiveness while preserving and protecting the unique natural characteristics of the region.





The St. Louis River estuary of Lake Superior provides a vital commercial and industrial link from the region to numerous waterways and is also a premier destination for anglers, boaters and other outdoor enthusiasts. The 12,000-acre estuary supports abundant wildlife and offers beautiful vistas from its shores, but it hasn't always been this way.

The communities and industries along the St. Louis River used the river to take wastes "away" for nearly a century, including sewage and industrial waste. Most waste received little to no treatment before entering the river, resulting in lingering contamination and odor.

WLSSD's modern wastewater treatment facility was completed in 1978, with communities connecting to the system in stages as pipelines were constructed. The new regional treatment

plant replaced 17 inadequate and separate municipal and industrial systems in the region. The treatment plant met water quality standards from day one.

The river recovered quickly. Newspaper reports called the cleanup "astounding" and "miraculous," as local residents rediscovered recreation on the river within a year of plant operation.



Stewardship
IN ACTION

WLSSD treats about 40 million gallons of wastewater every day—nearly 14 billion gallons each year. We are the largest single discharger of water on the U.S. side of Lake Superior—the largest freshwater lake by surface area in the world.



What we do matters

FOR OUR COMMUNITY, OUR NATURAL ENVIRONMENT AND OUR QUALITY OF LIFE

Wastewater produced in homes, businesses and industries in the WLSSD service area is piped to the treatment plant at 27th Avenue West in Duluth.

WLSSD cleans the wastewater using a biological process that mimics the natural action of the river. Beneficial bacteria consume the nutrients in the water and are removed, returning clean water to the river and producing nutrient-rich solids that are used as fertilizer.

WLSSD also is the solid waste authority in the region, a role typically played by counties in Minnesota. This authority requires WLSSD to make and enforce rules and regulations that govern solid waste collection and disposal, and to effectively plan for the community's needs in the future. WLSSD provides services and facilities that allow residents and businesses to dispose of, recycle or reuse all kinds of wastes properly.





GOING ABOVE & BEYOND

► **State and federal regulations set the performance standards WLSSD must follow for our various services and programs. WLSSD aims to achieve not just the minimum requirements, but to continually optimize all aspects of the organization, provide the highest-quality performance and services, protect the natural environment, and meet community needs today and into the future.**

The federal Clean Water Act of 1972 (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters, outlining strict requirements for wastewater treatment plants and other dischargers. The CWA requires the elimination of the discharge of pollutants into the nation's waters and the achievement of "fishable and swimmable water quality levels."

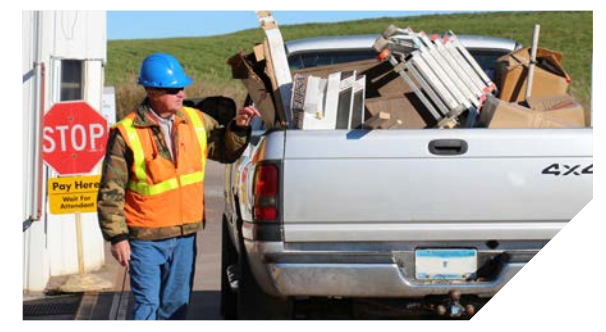
Over forty years later, this regulatory backbone continues to guide WLSSD's work. WLSSD's discharge permit, reissued every five years, sets standards for the quality of the water WLSSD discharges into the St. Louis Bay.

WLSSD operates its own laboratory and a sophisticated computer system to monitor performance. Some parts of our operation are



tested and monitored constantly, some daily, and others on a regular schedule. This testing and monitoring system ensures WLSSD's products—clean water, biogas, compost and biosolids—are of consistently high quality.

WLSSD also operates a permitting program following guidelines set by the U.S. Environmental Protection Agency (EPA). Each large industrial customer (plus many smaller businesses that may use certain chemicals or metals in their processes)



is issued a permit to discharge wastewater to the system. Under that permit, WLSSD sets limits about what can and cannot go down the drain. Each permit is unique and requires testing, reporting and inspections to ensure that any contaminants can be safely and effectively removed in the treatment process. WLSSD staff works hand-in-hand with industries and businesses to identify other ways to further reduce discharges to the sewer system.

Nearly 100,000 tons of trash is delivered by area waste haulers each year to the WLSSD Solid Waste Transfer Station. At the transfer station, loads of waste are packed into semi-trucks for delivery to a landfill. Waste inspectors examine the trash

to ensure the waste does not contain materials such as electronics, appliances, tires and excess recyclables. When these materials are found, WLSSD works with waste haulers and businesses to prevent these items from being placed in the trash in the future.

Beyond recycling basics, WLSSD has developed several innovative programs to recapture valuable materials from the wastes we produce in our region. These programs focus on recapturing valuable materials that remain in waste, reusing "waste" items and products whenever possible, and reducing the amount of waste we send to landfills.





VALUE FROM WASTE

CONVERTING PROBLEMS TO RESOURCES

› **WLSSD's wastewater treatment and solid waste programs provide alternatives to disposal by mirroring nature's economy: One organism's waste is another's resource. WLSSD's wastewater treatment process recaptures nutrients from wastewater through microbial processes that not only produce clean water, but also yield a valuable fertilizer and a methane-rich gas—a ready energy source to heat our facilities. WLSSD's Solid Waste Programs promote reuse and recycling of materials. Many discarded items retain value but are simply unwanted. Providing opportunities to reuse these goods for their original purpose or to reclaim, through recycling, the raw materials that went into making the items diminishes the amount of solid waste going to landfills.**

Residual wastewater solids are treated in anaerobic digesters to create a high-quality fertilizer called Field Green® biosolids. Nutrient-rich Field Green is used regionally on farms and Iron Range taconite mines, following detailed guidelines and using state-of-the-art technology to deliver the right amount of nutrients needed for crops, while protecting water and the environment. WLSSD's Field Green biosolids are tested regularly to measure nutrients and other constituents ensuring that correct amounts are spread on agricultural fields and that metals are below the strictest limits set by the EPA.

Biogas, a methane-rich byproduct of the wastewater treatment process, is used on-site to provide heat for treatment processes and

buildings—meeting about 8 percent of WLSSD's energy needs. WLSSD has begun a multi-phased project to use the biogas to generate electricity. Heat from the process will also be recovered and used to heat buildings and treatment processes. When completed, WLSSD will generate 50-100 percent of the electricity needed to operate our energy-intensive treatment plant.

Recyclables, mercury and pharmaceuticals are among the many items consumed in our community that are either too valuable to treat as wastes or not safe to put down the drain or in the garbage. WLSSD operates several facilities to manage some of these items safely; other items still have value and are managed through reuse programs or recycled to recover resources.

WLSSD's Materials Recovery Center (MRC) provides an opportunity to reuse, recycle or recover as many usable materials from waste as possible. Traditional recyclables such as bottles, cans, paper, cardboard and scrap metal are kept out of the trash, along with other recyclable items—appliances, electronics, tires, mattresses and box springs, concrete and wood waste and more. Many items delivered to the MRC are still usable, but simply no longer wanted. These items are placed in the MRC's popular Reuse Area, where others can "shop" free of charge and give items a new home or purpose—keeping them out of the landfill.

WLSSD also operates a permanent Household Hazardous Waste (HHW) Facility, accepting unwanted products that could pollute our land and waters if disposed of improperly. Residents may bring paints, stains, solvents, pesticides and other commonly used chemicals for free disposal. Within the HHW Facility, WLSSD's Clean Shop program provides disposal services for businesses that produce small amounts of hazardous waste, providing qualifying businesses an affordable, convenient and local option. Also on-site is the Product Reuse Center, where staff



makes usable items available to the public free of charge. Hazardous products are often energy-intensive to manufacture and distribute, so making small amounts available for use by other residents helps prevent waste and makes the most out of our natural resources.

At WLSSD's Yard Waste Compost Site, residents can drop off leaves, grass clippings, brush and garden waste to recover the resources in these valuable organic materials. Adjacent to the

Yard Waste Site, WLSSD operates an industrial scale organics composting facility where food residuals from businesses, institutions and residents are composted with yard trimmings to produce a high-quality soil amendment: Garden Green® compost. WLSSD requires local restaurants, hospitals and nursing homes, grocery stores, and colleges to divert their food residuals for beneficial reuse: Edible food goes to feeding programs, and inedible food scraps—containing valuable nutrients and organic material—are made into compost for use in



gardens, farms and landscapes. WLSSD operates several residential food scrap drop sites where residents and small businesses can also drop off their food scraps for composting.

Employees closely monitor the composting process to produce a consistently high-quality product. WLSSD's finished compost, Garden Green®, is thoroughly tested before sale under the United States Composting Council's Seal of Testing Assurance program.

Waste reduction and recycling programs help WLSSD ensure that local residents and businesses have the knowledge and access to recycling options to help manage their wastes. The environmental programs team works with businesses, schools, single and multi-family housing residents, event-planners, and more to provide successful recycling options. Additionally, WLSSD funds the operation of nine rural recycling sites in smaller cities and towns in WLSSD's service area, where curbside recycling is not widely available in these less-densely populated communities.

Community COLLABORATION TO IMPROVE OUR

Land & Waters

► **Pollution prevention is in everyone's best interest. Residents, businesses and industries play a role in safeguarding what enters the sewer system. The successes we enjoy are not possible without the participation of area residents and businesses in the programs we offer.**

District staff works closely with area municipalities to understand each community's development plans and ensure the District's solid waste and wastewater services will have the capacity to support community needs now and into the future. Staff also works with each of these communities to set annual goals that address infrastructure improvements, as well as maintenance and inspection activities in their portions of the sewer system in order to eliminate risks of sewer overflows and other problems.

WLSSD has long been a national leader in developing programs to address pollutants in an effort to maintain high quality and improve the environment. In the late 1990s, WLSSD began to reduce mercury in wastewater through collaboration with community stakeholders like dental and health care professionals, and industries like paper manufacturing. WLSSD's dramatic reduction in mercury levels is

recounted in Blueprint for Mercury Elimination, a nationally acclaimed publication developed by WLSSD and used by utilities across the nation to achieve similar results.

Beginning in 2006, WLSSD staff worked with state and federal agencies, local law enforcement, and pharmacists to conduct Minnesota's first safe and legal events to collect unwanted pharmaceuticals and keep them out of the sewer system and landfills. The successful events helped state and national leaders understand the barriers to collecting medications and helped to fashion new rules and laws to more easily manage these wastes.

WLSSD collaborates with research scientists, participates in studies and conducts pilot-testing to find ways to improve wastewater treatment and solid waste management. Comprehensive research and planning will ensure ongoing effectiveness, efficiency, reliability and affordability of the waste management systems.





A Clean Future **AHEAD**

› For decades, WLSSD has focused on complex, long-standing issues such as improving water quality in the St. Louis River, eliminating sewer overflows, improving infrastructure integrity and reliability, increasing recycling, and reducing the waste we send to landfills to protect human health and help restore our natural environment.

In the coming years, WLSSD will continue to optimize treatment plant performance to continue to meet water quality standards. We will preserve the public assets for which we are responsible with carefully planned system replacements and rehabilitation to maintain the reliability, effectiveness, efficiency and affordability of the WLSSD regional system, all while ensuring our services, systems and facilities meet the region's changing population patterns, community development needs, and waste management needs.

While we'll continue to replace and rehabilitate our major pipelines, upgrade the treatment

plant, and work with the community to increase recycling, we'll also expand our focus to include projects aimed at recovering more resources from waste, promoting the manufacture of products in ways that have less impact on our environment, and finding better end-of-life solutions for the goods we produce in our society.

WLSSD will continue to use technology and proactive strategies to increase the effectiveness, security and efficiency of our operations, while achieving our clean water and solid waste missions and supporting the region's needs into the future.





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