



SALT LAKE CITY DEPARTMENT OF PUBLIC UTILITIES

Water Reclamation Facility

Construction Update: Summer 2022

A lot of work has taken place since construction of Salt Lake City's New Water Reclamation Facility started in 2020, and there is still much more to accomplish before the facility is operational in 2025.

We are building the new facility next to the existing plant at 1365 W. 2300 North, and must ensure the current facility stays operational 24/7, without interruption or operational surprises. This has required us to systematically approach the construction work that needs to happen very strategically. We have also been working hard to keep the project on schedule and within budget. The construction industry is very volatile right now because of the COVID situation, conflict in Europe, supply chain issues, surging costs of materials, and a shortage of skilled labor, due to Utah's booming construction sector.

Because this is the largest public utility project in the City's history, we want to make sure we keep you up-to-date on what work has happened, what will happen, and changes we have made.

The Project's Guiding Principles

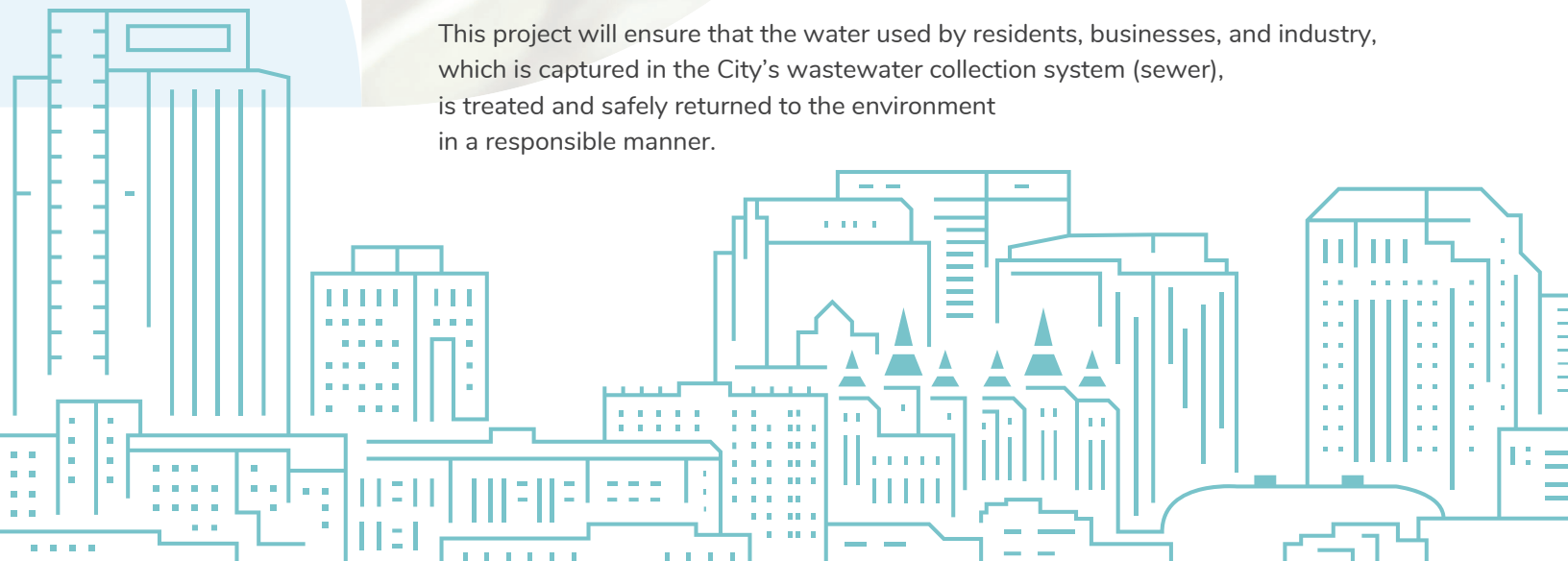
- Treat wastewater
- Cost and budget
- Safety
- Public engagement and education
- Sustainability

About the Project

We are rebuilding the Water Reclamation Facility to meet mandatory new water quality standards, improve efficiency, resiliency, and reliability, and avoid risks associated with the operation of a 55+ year-old facility that is near the end of its service life.

The existing Water Reclamation Facility is the only wastewater (sewage) treatment facility in Salt Lake City and treats an average of 35 million gallons of wastewater every day. That means the facility must operate 24/7/365 without interruption, even during construction.

This project will ensure that the water used by residents, businesses, and industry, which is captured in the City's wastewater collection system (sewer), is treated and safely returned to the environment in a responsible manner.



Upcoming Construction Activities



Pre-load Material Removed

A large pile of soil was placed at the site to improve ground conditions and prevent uneven settlement as the facility is built. The 1.6 million tons of fill material stood 35 feet tall, covered 23 acres, and compressed the underlying soil up to 6 feet in some areas. A high-tech monitoring system was installed to continually monitor the settlement. When the monitoring showed that the soil was sufficiently consolidated, the fill material was removed to the level of the original wick drain construction. A majority of this fill material has been stockpiled for future use in the construction of the new plant, while the rest is being hauled away for use on other projects. Stabilizing the ground using this method, rather than other ground improvement options, saved approximately \$40 million. Once the construction of the dewatering system is complete by the end of August, excavation can begin for the headworks facility, primary clarifiers, blower building, biological nutrient removal facility and secondary clarifiers.



New Biosolids Storage Pad Constructed and in Use

The new biosolids storage pad has been constructed and is in use. This storage pad replaced an existing facility and is used to temporarily store stabilized biosolids when immediate hauling offsite cannot be achieved due to weather or other unforeseen conditions. Because of the pad's location on the southern boundary of the facility, and the fact that the biosolids are stabilized, the public should not be able to detect odors from the storage pad.





Mechanical Dewatering Building Construction Continues

Construction of the mechanical dewatering building started on November 30, 2020, with the excavation for the main foundation slab. To create a solid foundation for the building, 144 16-inch-diameter steel piles were driven 160 feet into the ground in the location of the future building. Steel piles are basically a hollow steel pipe with each end capped, that are driven into place with a heavy hammer at the top of the pile. The piles were filled with concrete and rebar. Pile construction was completed in March 2021. Preloading soil and allowing the ground to settle over time as is being done elsewhere for the project was not an option for this building. Since completing the piles, the first, second and third levels of the building have been framed and concrete floor slabs have been poured. The roof level of the building will be complete by mid-July. The mechanical dewatering building removes excess water from the biosolids physically and chemically to produce a soil like, nutrient-rich product that is used for land application or landfill cover.

Odor Reduction

You may have noticed a reduction in the strength and frequency of strong odors coming from the Water Reclamation Facility. One of the primary sources of odors from the Facility were the biosolids drying beds, which were demolished at the beginning of the project. The drying beds have temporarily been replaced with screw presses located north of the anaerobic digesters. When the mechanical dewatering building is complete, the temporary dewatering will be decommissioned, and solids drying will be transferred to the new building. The building will have a rigorous odor control system designed to capture and treat air prior to release into the atmosphere. Other sources of odor, such as the influent pump station, headworks facility and primary clarifiers will also be constructed with odor control systems.

UV Disinfection Building

The New Water Reclamation Facility will use ultraviolet light to disinfect the treated wastewater prior to discharging the water to the environment. Excavation for the ultraviolet disinfection building began in April and 42 of the 129 auger cast piles have been completed. Auger cast piles are a type of drilled foundation in which the pile is drilled to the final depth in one continuous process using a continuous flight auger. The project team's decision to use auger cast piles saved the project approximately \$2 million compared to the steel pile option due to the recent escalation in steel prices. In addition, the placement of the concrete slab at the base of the concrete channel where the partially treated water enters the UV disinfection building was completed in late April.

New Substation

The excavation for the new substation, which will transfer power from Rocky Mountain Power to the New Water Reclamation Facility project, was completed in late April. Construction of concrete foundations will begin late August and will be complete by mid-October. The weight of the substation and soil conditions at this location did not require significant ground improvements prior to construction.

Out Of Sight and Out of Mind

Every day an average of 35 million gallons of wastewater is treated at the Water Reclamation Facility. Wastewater is created by every one of us who live, work, and play in Salt Lake City. Few people think about where wastewater goes and how it is cleaned so it can be safely reused and returned to the environment. But our communities are safe, healthy, and thriving in large part because of the Water Reclamation Facility and our team's commitment to meeting regulatory requirements following rigorous industry standards. Our quality of life would not be possible without this facility and the work our team does.



How You Can Help Us Out

It's Time to Clean Up Your Flushing Habits

Did you know that “flushable” wipes aren’t so flushable? Yes, it’s true. Those soft and durable moisturized wipes are wreaking havoc on our sewer system. Every year, homeowners and the City spend a lot of money unclogging pipes and repairing damage caused from people flushing wipes. Remember, only three things belong in the toilet – poo, pee, paper. It’s the 3P Rule.

Waste Not

We must all do our part to use our water resources wisely in light of ongoing droughts, population growth and the increase in water demand, and the overall need for us to live more sustainably.

Here are some things you can do to save water outdoors:

Water less, don’t water if it’s windy, water at nighttime to reduce evaporation loss, and plant water-wise plants.

Here are some tips for reducing indoor water use:

Reuse cooking water on your plants; fill your sink to rinse food, pans, and dishes, instead of just letting the water run; cut your time in the shower by one minute; and turn off the water while brushing your teeth.

For more information on ways to conserve, please visit www.slc.gov/utilities/conservation.



Meet Jason Brown

Chief Engineer for Salt Lake City Department of Public Utilities



Jason Brown once dreamed of becoming a veterinarian. He loves animals—horses, cattle, goats, birds, dogs, and cats. But one day, while sitting in a biology lab, he got a little bored. He started building a bridge of petri dishes and microscope slides.

“I realized at that moment in the biology lab that I may be in the wrong field, that maybe I was more suited for engineering,” Jason says, with a chuckle. “I soon entered the civil engineering program at Colorado State University.” After graduation, he moved with his wife to Utah and began a job with a small engineering firm.

Jason worked in the private engineering sector for five years, eventually joining Salt Lake City Department of Public Utilities (SLCDPU), where he has served the public for 16 years. He worked his way up through various divisions and is now Chief Engineer for the Department. In this role, Jason oversees a large team of designers, engineers, and project consultants for the new Water Reclamation Facility (WRF), currently under construction in Rose Park and planned for completion in 2025.

The WRF is the largest public works project ever undertaken by SLCDPU and is the second largest—only to the airport—to be built by Salt Lake City. Design and construction of the new facility have been underway while the current plant continues to operate 24/7, 365 days a year. As project director, Jason must ensure the community has a reliable, sustainable, and cost-effective facility to treat and reclaim wastewater for at least 50 years.

The current facility is more than 55 years old and has reached the end of its life. Additionally, the facility must meet new water quality regulations by 2025. During an extensive planning phase, the SLCDPU team determined it was more cost effective to build a new plant than to continue renovating the existing one.

Work began, as planned. But no one could have predicted the force and devastation of the COVID pandemic. For

more than two years work has continued on the WRF, although under strict health and safety requirements for workers’ protection. WRF engineers and consultants quickly adapted to the new normal of meeting online and have held hundreds of virtual discussions and planning sessions that way and implemented COVID health safety practices on the job site.

The pandemic has also taken its toll on the world economy, the labor force, and the supply chain of critical construction supplies like lumber, rebar, and concrete. Inflation, fuel prices, and even the war in Ukraine have also presented challenges in planning for costs.

“The first line of defense in combating rising costs is to have a clear set of principles so we are clear on what we are trying to accomplish and what is most important to the project’s success,” Jason says. The first guiding principle of the WRF has always been clear, he says. “This is a water reclamation facility. We must deliver a project that treats water from our sanitary sewer system before discharging it in the Great Salt Lake. We take this principle very seriously.”

Jason and his team also have embraced the concept of “value engineering” in containing and managing costs. The process requires the entire WRF team to dissect every aspect of the project, and to reduce its scope if necessary to save money. So far, finding creative cost-saving methods has reduced the bill by around \$120 million. In addition, scope modification has saved nearly \$150 million. A strong team approach with the contractor, design engineer, program managers, owners, and operators at the table is allowing for thorough vetting of ideas and nimble action, all of which support mindful budgeting.

The current cost estimate for the WRF is approximately \$830 million. But every effort is being made to continue to cut expenses while providing a wastewater treatment facility that will serve millions of people and protect public health and the environment for generations to come.

Jason looks at the massive WRF project, with its team effort, and takes pride. “One of the reasons I wanted to work for a municipality was, and still is, the ability to improve and contribute to the community,” he says.





Salt Lake City
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CONTACT US

If you have any questions about the Water Reclamation Facility or Salt Lake City Department of Public Utilities, please call our Project Information Line at 801-917-1124 or visit MakItPureSLC.com. You may also call Public Utilities customer service department at 801-483-6900 or visit slc.gov/utilities.



www.slc.gov/utilities

Project Sustainability and
Recycling Facts

881,104

Tons of material has been
recycled to-date



GOAL
50%

852,263

Tons of recycled material
has been used



GOAL
25%