SALT LAKE CITY DEPARTMENT OF PUBLIC UTILITIES

Water Reclamation Facility

Construction Update: Winter 2020

It has been almost a year since we began construction of Salt Lake City's new Water Reclamation Facility, located next to the existing Facility at 1365 West 2300 North. As work continues on this major project, we want to keep you informed on what is happening, provide ways to answer your questions, and be responsive to your needs.

The Project's Guiding Principles

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

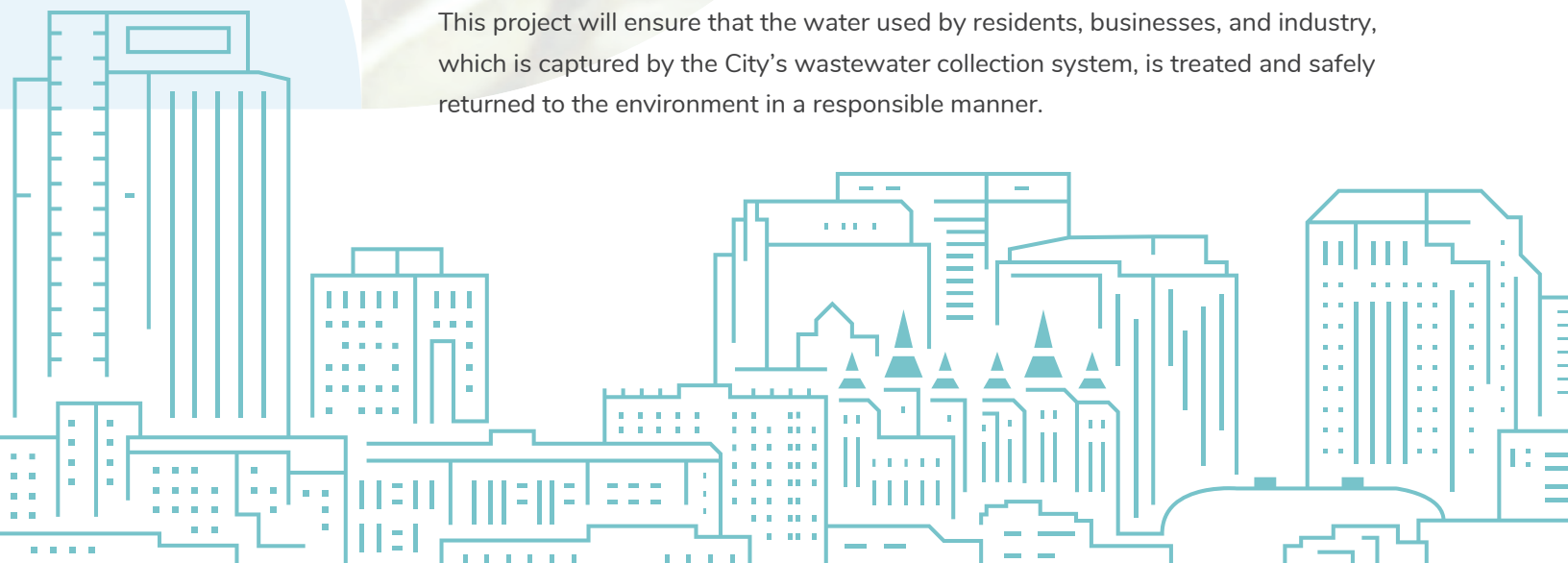
We are working hard to be a good neighbor and responsible member of the community.

About the Project

The new Water Reclamation Facility is a $700 million project that will take six years to construct and is the largest public utility project in Salt Lake City's history.

We are rebuilding the Facility to meet mandatory new water quality standards, improve efficiency and reliability, and avoid risks associated with the operation of a 55-year-old facility near the end of its service life. The Facility treats about 35 million gallons of wastewater every day and is the only wastewater treatment facility the City has. That means it must operate 24/7 without interruption, even during construction.

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



Upcoming Construction Activities

Here are construction activities that will take place over the next few months.

Continued Soil Placement to Improve Ground Conditions

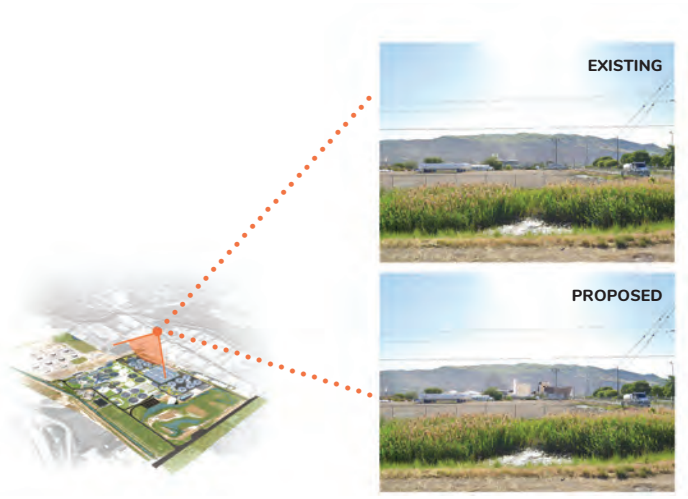
There will continue to be soil hauled to the site to improve ground conditions. Geotechnical engineers, who are responsible for the structural foundations of the new Facility, determined that the poor soil conditions and high groundwater level would result in the new construction elements settling three to five feet unless the ground is compressed and stabilized prior to construction. It will take a total of approximately six months to haul and place 1.9 million tons of preload materials. Using this method of compacting the soil where possible, instead of driving piles, saves ratepayers roughly $40 million.

The soil that has been placed on the site measures up to 22 feet tall on the north side of the area and will eventually reach 35 feet. It has already compressed the soil up to 4 feet in some areas. A complex monitoring system has been installed to monitor the settlement daily. Ultimately, the soil on the site will be 35 feet tall, nearly equivalent to a four-story building, and covering 23 acres, about the size of 18 football fields. This work started in November 2020 and is scheduled to be finished in May 2021.

Wick drains have been installed and are being monitored on the site where additional soil has been placed. These geotextile filter-wrapped plastic strips with molded channels provide drainage paths to move water out of the soft compressible soil so it consolidates faster. About 44,000 wick drains, each extending 120 feet deep, have been installed.

Working to Reduce Community Impact

We continue to monitor the truck traffic on Warm Springs Road to 2300 North and along 2300 North. We have put in place a designated truck route for trucks leaving the Staker Parson Gravel Pit to mitigate neighborhood impacts, a traffic management plan, and dust control plans.



Mechanical Dewatering Building

During the wastewater treatment process, solids are separated from the liquids. The solids are then treated biologically, physically, and chemically to produce a semisolid, nutrient-rich product known as biosolids. Historically, we have relied on using drying beds to remove water from the biosolids through solar evaporation. To make more space for the new Facility, reduce odors in neighboring communities, and be more efficient, these drying beds are being replaced with a mechanical dewatering system housed in a new, three-story building. This system is a key component of the new Facility that we believe will better serve the public and protect the environment.

Construction of the Mechanical Dewatering Building started on November 30, 2020, with the excavation for the main foundation slab. The structure will be supported by a deep foundation system consisting of 144 16-inch diameter steel piles driven 160 feet into the ground. The piles will be filled with concrete and rebar to create a solid foundation for the new building. The installation of the steel piles began on December 14, 2020 and is expected to be completed by the end of February 2021.

New Biosolids Storage Pad

The concrete slabs and walls of the new biosolids storage pad have been constructed. The new biosolids storage pad, which replaces an existing facility, was completed at the end of January. This pad will be used for temporary storage of stabilized biosolids when immediate hauling offsite cannot be achieved due to weather or other unforeseen conditions. The new pad is located along the southern boundary of the Facility. Because of the location and the fact that biosolids are stabilized, any odor emissions should not be detected by the public.

Working to Reduce Community Impact

The process of installing foundational piles for the Mechanical Dewatering Building creates some vibration and noise. We have reached out to surrounding neighbors and have heard there are no adverse impacts from this work. We have also put in place a vibration monitoring system and are taking noise readings to monitor our work during the installation of the piles.

What We Are Doing To Reduce Odors

Odors emitted from the existing Facility have historically come mainly from four sources:

1) The pump station where raw sewage is collected and pumped to the main plant;
2) Sludge thickeners that are open to the atmosphere;
3) Sludge drying beds that are shallow concrete basins also open to the atmosphere;
4) Storage pads used for processing odorous materials removed from sewers during maintenance operations.

The following are things that we are doing with the new Facility to help reduce odors.

- The influent pump station will include an odor control system to capture and treat odorous gas from the pump station.
- The existing sludge thickeners will be replaced with new units that will be covered and equipped with odor control systems.
- The drying beds have been removed over the past year to clear space for the new Facility. The drying beds provided space for the treated solids produced by the treatment process to dry as the final part of the process. To help dry the biosolids, they were turned periodically using large equipment to expose wet material and accelerate the drying process. When the biosolids were turned, escaping odors could be very strong. Biosolids are now dried using mechanical equipment to press liquid out of them. The water content in the biosolids will be reduced from 97 percent to about 20 percent. The biosolids "cake" is then loaded into trucks and hauled away for application to agricultural land. The new Facility will include a Mechanical Dewatering Building to house this equipment, which includes screw presses to separate liquid from the biosolids, a hopper to hold the biosolids, and a truck bay to haul the biosolids away. The entire process will be enclosed in the building. The new building will include odor control equipment to treat the air in the building before releasing into the atmosphere.
- Lastly, sawdust will be used periodically to cover materials offloaded by vacuum trucks that are used to clean out sewer lines. The sawdust layer will help contain odors from this material.

We hope that, as our neighbor, you have noticed a decrease in the amount of odor coming from the Facility since the drying beds were removed from service. Odors coming from the Facility should continue to be reduced as more project elements are completed.

Meet Michelle

One of Our Team Members Working on the Design of the New Facility

In our effort to update residents on the design and construction of the new Facility, we will introduce key members of our team in this and future newsletters. Today, we feature ***Michelle Barry, P.E., PhD.*** *Michelle is the Project Manager for Design of the Facility.*

Growing up in Star Valley, Wyoming, Dr. Michelle Barry was—in her words— "totally nerdy in my own way. I loved math and science and I also loved to build things. I used to play in our sandbox building roads, towns and rivers (when my mom would let us add water to the mix). I also loved to play with my brother's Legos."

It was all great practice for the job Michelle landed years later. Today she is a respected engineer with SLCDPU, and Project Manager for design of the new Facility. In her role, Michelle works closely with AECOM, the multi-national engineering firm under contract for the project design. She provides direction on wastewater treatment processes, and on key design decisions for the Facility as well as the administration building, and other operational structures planned for the site.

Michelle is a touchstone to every person involved with the project, from SLCDPU Director Laura Briefer, to division leaders in engineering, sustainability, public outreach, and dozens of consultants. She came to SLCDPU in 2016 after working as a civil/environmental process engineer in the private sector. Michelle earned her PhD from Arizona State University, where her dissertation focused on treatment of both surface water and wastewater to eliminate discarded pharmaceuticals and other wastes like heavy metals, manufactured chemicals, flame retardants and more from the wastewater stream.

> ***"I was totally nerdy in my own way. I loved math and science and I also loved to build things. I used to play in our sandbox building roads, towns and rivers."***

Michelle's work allows her to tackle environmental challenges to which every human contributes. According to Michelle, "The amount of salts we add to our water needs to be reduced, and the most common things we use every day, like personal care products, DEET in insect repellants, titanium dioxide in sunscreens and even anti-bacterial agents in clothing and soap—they all have impacts on our wastewater, how we treat it, and the environment to which we discharge the treated water into." In Salt Lake City's case, the end point is the Northwest Drain, and ultimately to the ecologically sensitive Farmington Bay of the Great Salt Lake.

Like the entire project team, Michelle is committed to protecting public health, the environment, and to careful stewardship of public dollars. Michelle brings the specialty skills needed for one of the City's largest public works projects ever, says SLCDPU Director Laura Briefer. "I'm impressed with Michelle's vision and ability to work with everyone on the team, as well as the general public. She is personable and very approachable. I have the highest confidence in her to manage the design of this project, which will serve us for many more decades."

So, it goes for the successful engineer who once played in Wyoming farm fields and waded in creeks building dams and constructing rivers in her sandbox. She turned her lifelong passions into a fascinating career and a commitment to public service.

Salt Lake City
Department Of Public Utilities
1530 South West Temple
Salt Lake City, UT 84115

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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 MakeItPureSLC.com. You may also call Public Utilities customer service department at 801-483-6900 or visit slc.gov/utilities.

www.slc.gov/utilities

COVID Study Participant

We are one of the 42 wastewater treatment plants in Utah cooperating with the Utah Department of Environmental Quality (DEQ) to collect and analyze sewage samples to identify trends in the spread of the coronavirus, which are shed in the feces of infected individuals. The data will help DEQ and public health partners determine trends in virus prevalence in Utah communities. The study is measuring the amount of COVID RNA in the wastewater, not the actual virus. COVID viable cells are not present in wastewater. Their outer shell (or envelop) is relatively weak and are quickly destroyed in our GI tracts.