



CITY COUNCIL TRANSMITTAL


Patrick Leary, Chief of Staff

Date Received: 9/25
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TO: Salt Lake City Council
Charlie Luke, Chair

DATE: September 24, 2019

FROM: Laura Briefer, Director, Department of Public Utilities 

SUBJECT: 4th Avenue Well Rehabilitation Project
Presentation of Alternatives

STAFF CONTACTS: Jesse Stewart, Deputy Director, jesse.stewart@slcgov.com; Jason Brown, PE, Chief Engineer, jason.brown@slcgov.com

Laura Briefer, Jesse Stewart, Jason Brown, and representatives Bowen Collins & Associates (BCA) will be at the Council table.

DOCUMENT TYPE: Information Item

RECOMMENDATION: Public Utilities recommends that the City Council review the alternatives prepared by the professional staff of BCA and Public Utilities and provide its preferences regarding the approach for the project. Public Utilities also recommends that the City Council agree to remove the contingency and allow Public Utilities to move forward with the next phase of the project so that construction can commence in fall 2020.

During the Fiscal Year 2019-2020 budget discussion, the City Council took a unanimous straw poll that made funding for the 4th Avenue Well Rehabilitation Project contingent on Public Utilities' presentation of potential alternatives that would reduce the building size and other impacts of the well rehabilitation project. As part of the straw poll, the City Council also indicated that review by an outside engineer or resource would be helpful to identify possible additional concepts that would result in a smaller/quieter facility through building design and footprint alterations.

It would be helpful to further discuss with the Council the role of an outside engineering review. In addition to timing, it would be helpful to discuss the amount of review that would be needed (depending on how the updated designs are received by the public), and some of the potential concerns about this type of third-party review. Public Utilities reached out to the University of Utah Engineering Department to determine whether they would be willing to serve as an additional resource. Public Utilities also considered issuing a request for proposal to hire an additional outside engineer as a resource and reached

out to two reputable engineering firms. While options for an outside engineering review may be a possibility in the future, there are significant challenges to this approach. The primary challenge is that BCA, a national expert in water resource engineering, is the Engineer of Record for the project and has the legal and ethical responsibility associated with the final engineering certification and regulatory approval for the project. Our contact at the University of Utah expressed hesitation due the fact that the work of academia is rooted in theory and research and they do not have the necessary experience of designing a water system pursuant to safe drinking water standards. Representatives of the two other engineering firms also expressed hesitation due to professional and ethical considerations.

We understand that the request for additional engineering resources was made in the spirit of ensuring alternatives are considered that would reduce impacts to the community. I have provided direction to Public Utilities and BCA staff that these concerns be incorporated into development of potential alternatives that can best address public concerns and needs. I am confident that Public Utilities' and BCA's professional staff can address the community's concerns. Additionally, BCA has an internal peer review process that will be incorporated.

BUDGET IMPACT: The window for project construction is limited to the fall and winter seasons due to the criticality of the 4th Avenue well operation during the summer. Public Utilities submitted its recommended budget in March 2019. At the time of submittal of our budget, the budgeted costs included final engineering and construction during FY 19-20. The development of additional alternatives and public engagement has shifted anticipated construction to the FY 20-21 budget year. Some additional design costs will also be incurred during FY 19-20 due to the need for increased engineering, architecture and public engagement tasks.

BACKGROUND/DISCUSSION:

The 4th Avenue Well is an essential component of Salt Lake City's drinking water system. The well was constructed in 1943 and is situated in a center island park near the intersection of Canyon Road and 4th Avenue. The 4th Avenue Well provides drinking water and fire flow pressure to downtown Salt Lake City and northern areas of the City during high demand between April and October, although it can be used year-round if needed. At times, the well provides up to 100% of the drinking water in portions of Salt Lake City's water service area and is relied upon by residents, businesses and visitors at more than 12,000 water connections.

Capital Improvement Program - Criticality and Condition of the 4th Avenue Well

The 4th Avenue Well Rehabilitation Project is a necessary capital improvement program (CIP) project that will ensure future viability of this water resource. As part of CIP and asset management, Public Utilities regularly evaluates the Criticality and Condition of its water system and assigns a score to each water system asset. The 4th Avenue Well scores at the highest levels for both Criticality and Condition components of Public Utilities' CIP. This means that the well is essential to the public and its condition has degraded in such a way that it needs immediate attention in order to ensure it can continue to operate.

The 4th Avenue Well received a **Criticality 5** score (the highest score possible), meaning it is a necessary component of the City's water system and infrastructure. This also means that the consequences of failure of the 4th Avenue Well would include water disruption to residents and businesses of the area served by the well.

The 4th Avenue Well received a **Condition 5** score (the highest score possible) because of the very high risk of failure of the well in its current condition. The electrical system that powers the well pump is outdated and no longer the standard for the City or Rocky Mountain Power. Should the pump's electrical system fail, the well would not be able to be used, and water disruption to the area served by the well would be likely. The current configuration of the well pump and electrical system located in a below-ground vault do not meet current regulations and put both the well and Public Utilities workers at risk. The well's pump and electrical components are subject to failure due to potential flooding and contamination. Furthermore, the integrity of the below-grade vault is currently at risk due to pressure from tree roots along the walls of the vault, which subjects the well to failing. Finally, from a worker safety perspective, Public Utilities' maintenance and operations crews are at risk of electrocution from high voltage electrical components when they enter the narrow and confined space.

Regulatory and Water Quality Issues

The water from the 4th Avenue Well is very high quality and meets safe drinking water standards. However, state drinking water regulations require that residual disinfection be present throughout the City's overall water distribution system. This is to mitigate the risk of bacteria growth in the distribution system piping and infrastructure.

Based on correspondence from UDEQ's Division of Drinking Water (DDW), it is likely that Public Utilities will be required by DDW to disinfect water from the 4th Avenue Well before it enters the distribution system. Regardless of pending DDW requirements, Public Utilities is obligated to protect the public health and safety and has determined that the 4th Avenue Well should receive disinfection to meet this obligation. Public Utilities is concerned that the risk of contaminants such as Legionella or other bacteria in the distribution system be mitigated, especially given the amount of growth of high-rise, multi-family complexes in downtown Salt Lake City, and the presence of medical facilities, residences, and schools within the area that receives well water. Introduction of disinfection to water from the 4th Avenue Well prior to entering the distribution system will help mitigate these water quality risks.

The 4th Avenue Well does not meet other DDW and electrical code requirements due to its location in an underground vault. The well is currently not in compliance with these regulations, and cannot be grandfathered into compliance.

Proposed Action

To address the identified risks of failure of this critical water source, address public health and safety concerns, and to comply with regulations, the 4th Avenue Well Rehabilitation Project includes the following work:

- Construct the well head, pump, and electrical system above ground in compliance with regulations;
- Include a disinfection system; and
- Construct a secure building around the above-ground system.

To complete the 4th Avenue Well Rehabilitation Project, Public Utilities contracted with BCA to provide the engineering design and serve as the Engineer of Record for the Well Rehabilitation. Public Utilities contracted with CRSA Architecture to design the well building. We also contracted with the firm Hansen Allen and Luce, Inc. (HAL) to conduct an alternatives feasibility analysis related to the project. In

addition, Public Utilities recently contracted Wilkinson Ferrari and Co. to assist with public outreach.

PUBLIC PROCESS:

As of June 2019, BCA completed preliminary 30% engineering designs, HAL completed an alternatives feasibility analysis, and CRSA developed architectural renderings. This information was presented and discussed with the public, including residents along Canyon Road, the Greater Avenues Community Council, and others throughout the last year. SLCDPU submitted architectural designs to the Salt Lake City Planning Division seeking approval for the building architectural design pursuant to the Historic Landmark Commission requirements. The project team participated in two HLC work-sessions, and incorporated feedback from the HLC into architectural iterations.

Several residents along Canyon Road expressed significant concern about the impacts of the 4th Avenue Well Project to their neighborhood. The main concerns include building size, building aesthetics, noise, tree removal, loss of open space, and safety related to the proposed use of liquid sodium hypochlorite (bleach) as a disinfectant. Public Utilities and its consulting team have worked over the last year to try to address these issues. Community members continue to be very concerned about the impacts of the 4th Avenue Well Project.

In June 2019, the Salt Lake City Council requested, as part of the FY 2020 budget process, that additional engineering work be conducted to better address community concerns related to the impact of the 4th Avenue Well Project. Public Utilities authorized its engineer of record, BCA, to complete additional design concepts and document the engineering alternatives already considered to meet the goals of the neighborhood and community at large. Public Utilities is also engaging with DDW to provide additional assurance that different concepts would be acceptable to the regulatory agency.

There are many public values and considerations associated with the rehabilitation of the 4th Avenue Well. These include the following:

- Safety and Public Health Considerations
- Operational Needs
- Compliance with Regulations
- Minimize Building Size
- Aesthetic
- Alignment with the Historic Nature of the Neighborhood
- Noise and Odor Mitigation
- Minimize Tree Impacts
- Constructability
- Cost Sensitivity

According to recent interviews conducted by Wilkinson Ferrari & Co., a public engagement firm retained for this project, the values above reflect the concerns of the community. Wilkinson Ferrari & Co.'s interviews did indicate that one resident is opposed to completing the project. The risk to drinking water, public health, and safety by not completing the project is too great for us to recommend this as a responsible alternative.

The following is the public process and anticipated schedule to complete the additional work and construct the project:

August through October 2019: Explore alternatives that adhere to important public values associated with the project listed above. Public Utilities and BCA have developed several alternatives to present to the public and City Council.

September 2019 through February 2020: Public engagement and reporting these activities to the City Council, including:

- Public Utilities contracted with Wilkinson Ferrari & Co. to conduct individual interviews and report findings in order to identify and document public sentiment and inform the City's future decisions. This task was completed in September.
- Wilkinson Ferrari & Co. will coordinate a series of facilitated meetings with the project's nearby residents to find a workable solution, select a design and define an implementation plan. These meetings will take place beginning in October 2019 through February 2020.
- Once a workable solution identified and design selected Wilkinson Ferrari & Co. will coordinate a public open house for the broader Avenues/Salt Lake City to share this with them.
- Public Utilities would like to conduct an initial presentation of the alternatives and potential workable solution to the City Council in November to ensure appropriate communication and adherence to schedule.
- Public Utilities would like to present the selected design and implementation plan to the City Council in February 2020, if desired by the City Council.

February 2020 through August 2020: Prepare detailed engineering designs and update architectural designs. Keep nearby residents updated, and seek feedback on architectural designs from City Planning, Historic Landmarks Commission, and community. Acquire appropriate regulatory approvals. Procure construction services.

Fall 2020: Notify residents about construction starting. Begin construction. Provide residents with construction updates.

Winter 2021: Project completed.