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May 28, 2019

VIA EMAIL: Kelsey.lindquist@slcgov.com

Historic Landmark Commission
SALT LAKE CITY CORPORATION
451 South State Street, Room 326
Salt Lake City, Utah 84111

Re: Comment in Opposition by Kurt A. Fisher on 4th Avenue Pump Applications by the Department of Public Utilities at approximately 200 North Canyon Road, Salt Lake City, Utah (the "Well")¹
PLNHLC2018-00557 and PLNHLC2018-00558

Sirs:

Salt Lake City Department of Public Utilities ("DPU") proposed Well at approximately 200 North Canyon Road in Salt Lake City should be moved to the May 9 open house Option 2c site² in the park at State and Canyon Road (Tribune 4-30-2019) in a redesigned anti-terrorist and earthquake hardened structure. The DPU's May 9 concept design is a danger to the community and to first responders.

The Chemical Treatment Plant is proposed to be constructed in the geologic streambed of City Creek Canyon, at grade, and below the level of known prior floodwaters.

The DPU proposes to build the chlorine chemical treatment plant at level of the existing grade in the geologic streambed of City Creek Canyon. The site was underwater during the 1983 high-snowpack runoff of flooding with a peak flow of 331 cubic feet per second. The structure is vulnerable to foundation undermining, structural failure, chemical release and-or a toxic chlorine gas release from a 2,400 cubic feet per second cloudburst flood. In 1945, a cloudburst flood of that size that can down Perry's Hollow and "M" and "N" streets in 1945 and moved 300 lb boulders, grave headstones and eight cars from the cemetery to South Temple (Salt Lake Telegram August 20, 1945). City Creek is at risk of a similar catastrophic cloudburst flood that destroyed downtown Farmington in 1923. During such a cloudburst flood, residents and first responders also will be at risk for electrocution from the ground-level high-voltage, high-power transformers proposed for the north end of the chemical treatment plant. A cloudburst type flood

¹ Salt Lake City Department of Public Utilities. 2019. Information Website on 4th Avenue Well Project (url: <https://www.slc.gov/utilities/fourth-avenue-well-project/>, accessed May 2019).

² Memorandum by David E. Hansen, Hansen, Allen and Luce, Inc., to B. Stewart, Salt Lake Department of Public Utilities, re: 4th Avenue Well Assessment (hereafter "HAL Report") (url: https://docs.wixstatic.com/ugd/80b28b_3607f771b2984d63a44ce7a4c3d1c7a9.pdf).

of 2,400 cubic feet per second is beyond the design abilities of existing flood control measures implemented in the canyon after 1983.

If constructed at the proposed site, the chemical plant is a risk of structural failure from ground liquefaction during an anticipate 6.75 or greater magnitude earthquake.

The soils on which the plant is proposed to be built are susceptible to ground liquefaction and horizontal ground movements of 0.3 to 1 meters during the Wasatch Front's expected to greater than 6.75 magnitude earthquake. The chemical plant's foundation or the outflow connections to its chlorine storage tank could fail during such an earthquake resulting in residents and first responders having to cope with both a 500 to 900 gallon chlorine spill and-or toxic chlorine gas release as they dig their neighbors out from underneath their homes.

The proposed chemical attack is susceptible to a terrorist attack.

Finally, the concept chemical plant design is susceptible to a simple terrorist attack. A would-be terrorist could simply fill a van with several hundred gallons of chemicals easily purchased at a supermarket and janitorial supply stores – household vinegar and concentrated ammonia cleaner. Breaching the chemical plant door and then setting off a hand-grenade sized explosive charge would mix the chemical with the liquid chlorine stored in the structure and release a sizeable cloud of chlorine and chloramine gas. City Creek Canyon's winds would then blow the resulting cloud across the Church Office building and into the central business district that is populated with 48,000 to 70,000 daily residents and visitors.

Supporting backmatter

I have written several comments on the 4th Avenue Chemical Plant that provide back matter for the claims made in this letter in opposition. Those comments are attached as supporting matter.

Rebuttal to DPU Lack-of-Funding Argument

I anticipate that the DPU will claim lack of funds to move the proposed chemical plant. The DPU could move at the Salt Lake City Council the June 4 budget hearing to defer all or part of 1.5 million USD in DPU Reservoir Project 51-01301-2730.06 (about 0.8 percent of the agency's 239 million USD 2019-2020 budget) to the 4th Avenue Well, Project 5132268-2015-0213 in order fund the move and redesign. Alternatively, DPU could apply to the Council to raise DPU rates by 8 mills (about \$3 dollars per year or about less than a penny a day for each its 350,000+ customers for one year) to raise the needed funds.

Conclusion

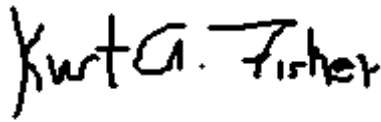
The stasis of this matter is whether the DPU should expend an additional 1 to 1.5 million in public funds to move the proposed chemical treatment plant about 400 feet to a nearby park. This justification for such a move and redesign is that as proposed, the treatment plant is a danger to the community and inconsistent with the neighborhood's historic character. A redesigned facility that provides adequate flood, earthquake, and terrorist resilience would obviously need to be larger and inconsistent with preserving the historic character of the design at the 200 North Canyon Road and 4th Avenue location.

The stasis of this matter *does not* involve balancing the water needs of the downtown which is projected to grow by another 25,000 persons in high-density housing and hotels against a backward-looking home owners. By moving and redesigning the chemical plant both the water

needs of the City and the goals of neighborhood for preserving its historic character can be achieved.

Our able DPU Director Briefer proposes the chemical plant 4th Avenue and Canyon Road out of a desire to conserve public funds. But sometimes engineers get fixated on economic efficiency. That is when citizen oversight, in form of your Commission, is most needed. Your Commission should formally condition the chemical plant's special permit exception request on moving the well to the Option 2c site at the State Street Park in a more flood, earthquake and terrorist resistant design. Please do not approve siting at 200 North Canyon Road. I have proposed a concept schematic, attached, for such a redesigned facility.

Very Truly Yours

A handwritten signature in black ink that reads "Kurt A. Fisher". The signature is written in a cursive, slightly slanted style.

Kurt A. Fisher

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Attachments

- A - Schematic Concept Design by Commenter
- B - Comment to DPU on Flooding Risk
- C - Supplemental Comment to DPU on Earthquake Risk and Liquefaction
- D – Initial Comment on Earthquake Risk
- E – Comment on Terrorist Attack Risk