

**Date:** June 3, 2025

**To:** Salt Lake City School District Board of Education; Superintendent Grant

**From:** Isaac Astill, Executive Director, Auxiliary Services

**Subject:** Temporary Athletic Fields for West and Highland High Schools

**Summary:**

As part of our continued effort to make sustainable and cost-effective decisions in the design of our new high schools, we are recommending the installation of ground source heat pump wells beneath the existing baseball and softball fields on our current property. The following points provide a rationale for this recommendation:

**1. Site Limitations and Feasibility**

After careful site analysis, only two viable areas on our property were identified for the installation of the ground source heat pump system:

- The existing parking lot, and
- The baseball/softball fields.

The parking lot was ultimately ruled out for two reasons:

- **Storm Drainage Requirements:** A significant portion of the parking lot is designated for stormwater retention basins, per city requirements. These areas must remain undisturbed and do not offer sufficient square footage for the required number of geothermal wells.
- **Structural Disruption and Cost:** The cost and impact of tearing up and re-pouring the lot—combined with drainage engineering modifications—would be far more disruptive and expensive.

**2. Pre-Existing Field Conditions**

The current baseball and softball fields already present existing challenges:

- A documented drainage issue, which has caused frequent disruptions in play and maintenance needs.
- A significant grade issue, with an 18-inch slope from right field to home plate on the baseball field. This slope was not corrected during previous field investments due to funding limitations at the time.

Because these fields were already challenged to meet programmatic needs and standards, placing the geothermal system below them now allows us to correct these deficiencies without losing usable program space elsewhere on site.

**3. Cost and Risk of Off-Property Installation**

We explored the possibility of placing geothermal wells on neighboring properties. However, this option presents multiple issues:

- We received no guarantees that neighboring property owners would grant the required easements or long-term access for installation, maintenance, or replacement.
- More critically, running geothermal lines from off-site locations would require extensive trenching, long-distance conduit runs, and coordination with utility companies and public right-of-way permits.
- Based on similar-scale projects, this would add hundreds of thousands of dollars in trenching, insulation, and access vaults, while increasing the risk of future system failure due to added pipe length, exposure, and limited site control.

These added risks and costs make off-site placement financially and operationally impractical.

#### 4. Long-Term Energy Savings and Sustainability

By installing a ground source heat pump system sufficient to support approximately 225,000 square feet of building, we anticipate substantial long-term benefits, including:

- **Energy Savings:** Ground source systems are up to 40-60% more efficient than traditional HVAC systems.
- **Operational Cost Reduction:** Based on regional utility rates and industry averages, we anticipate:
  - \$2.00–\$2.50/square foot annual savings, equating to \$450,000–\$562,500 per year in reduced utility costs.
  - Over a 70-year system lifespan, this represents an estimated \$31.5M–\$39.4M in utility cost savings.
- **Lifecycle Efficiency:** Ground source systems typically have a 50+ year lifespan for the well field and 20–25 years for indoor components, outlasting traditional rooftop units or boilers.

#### Conclusion

Installing ground source heat pumps beneath the current sports fields is the most efficient, cost-effective, and future-forward solution available. It leverages underutilized space in need of improvement, avoids costly and uncertain off-site complications, and provides decades of operational savings while supporting our long-term sustainability goals.

#### **Requested Board Action:**

I respectfully recommend board support for moving forward with this plan. Please let me know if additional technical data or cost modeling is needed.