

Geothermal: A Green Solution to Rising Temperatures

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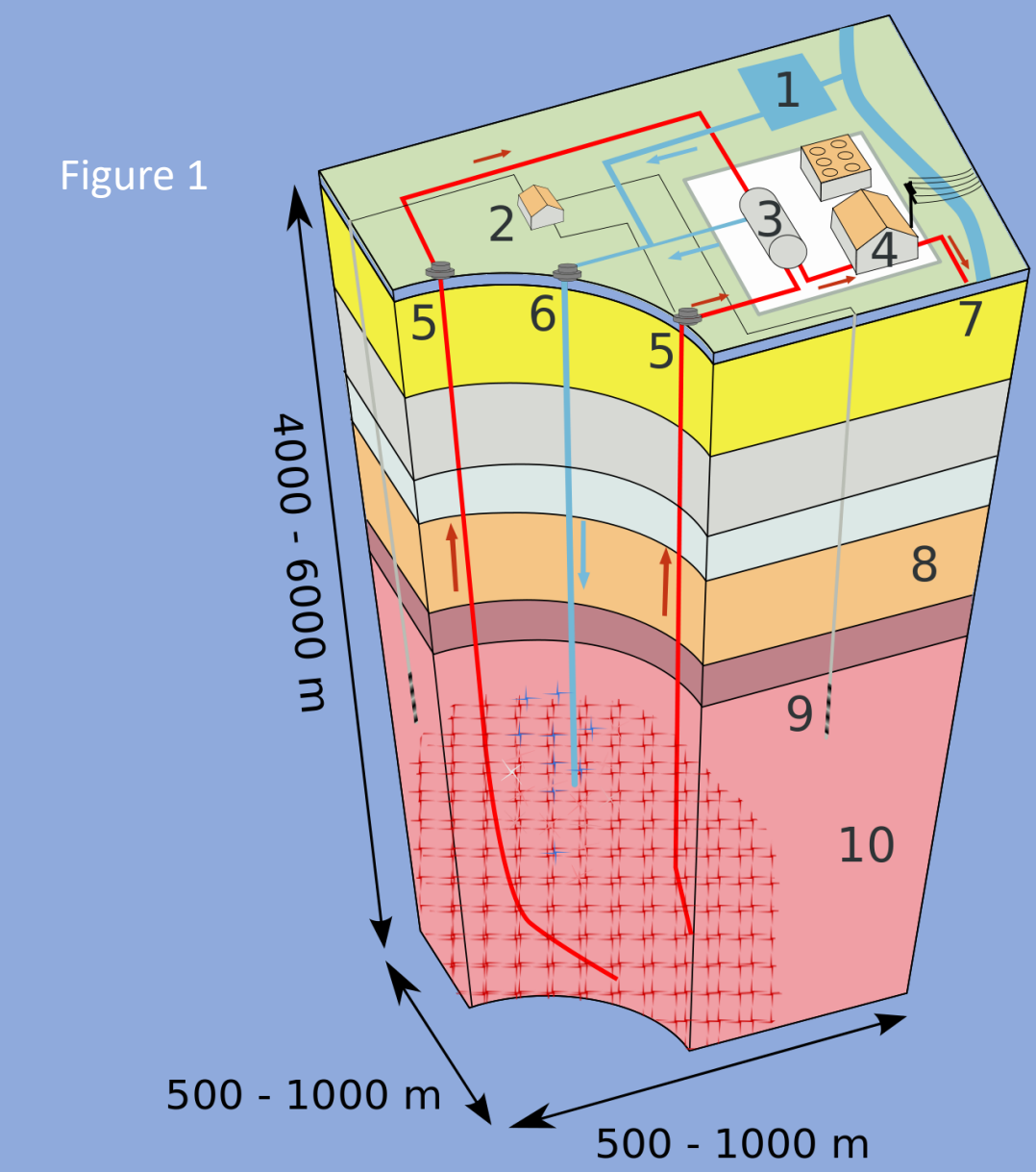
WPI's Current Plan \$45 million for 40 years:

- Replace aging equipment
- Work on existing systems to increase energy efficiency
- Look into renewable energy

97%
of WPI's Scope 1 emissions come from their outdated heating system

Our Solution

- Start the implementation of geothermal ground pump heat systems

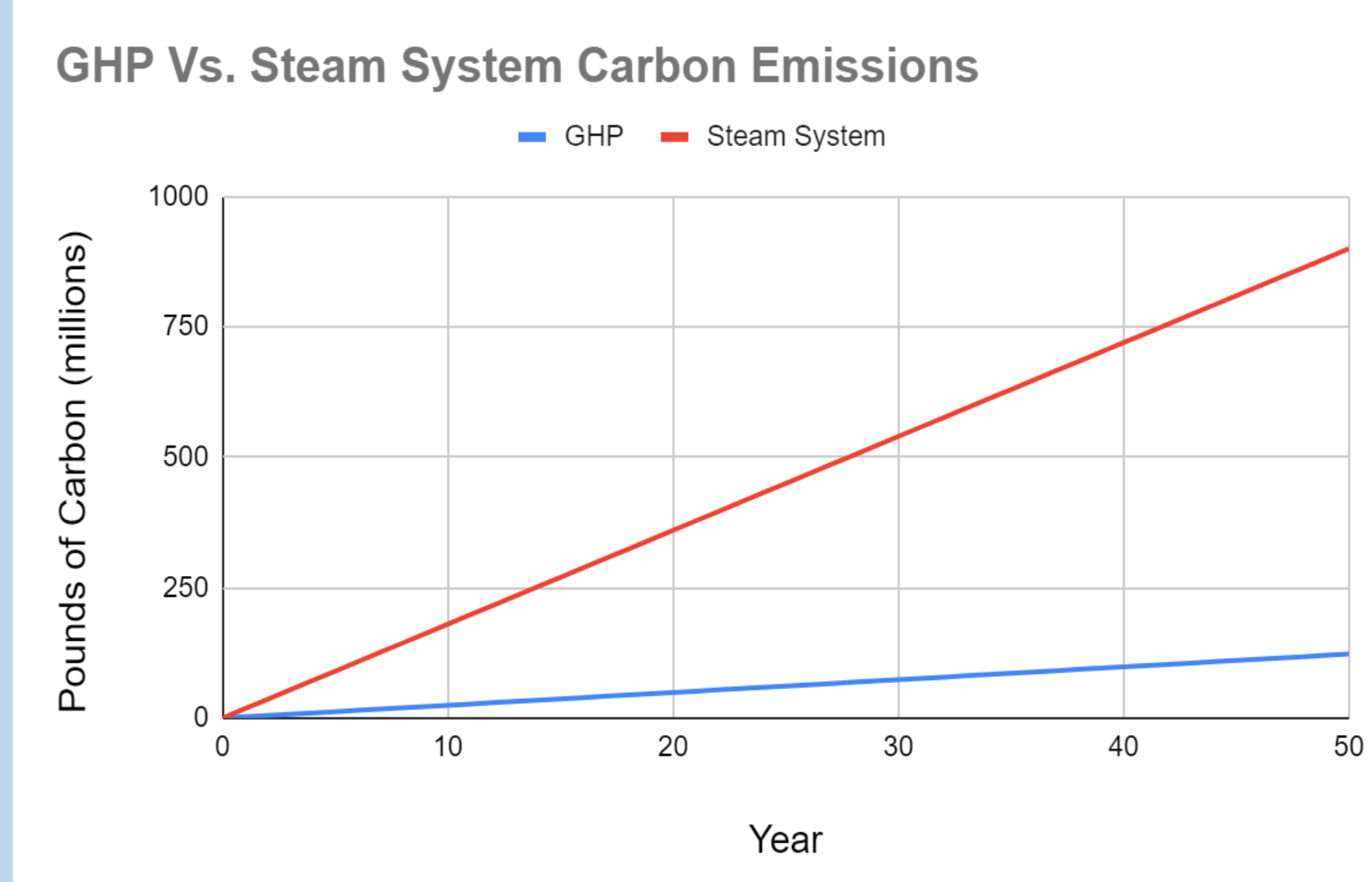


SUSTAINABILITY

-Zero Emissions when Combined with Renewable Energy

-Heating Efficiencies of 50-70% Higher than Other Heating Systems, 91.1% less energy than current system

-Cooling Efficiencies 20-40% Higher than Other Air Conditioners



LOGISTICS

-Around 1300 Wells

-Around 12 Acres of Land

-Possible Dig Locations are the Football Field and Institute Park. See Figure 2

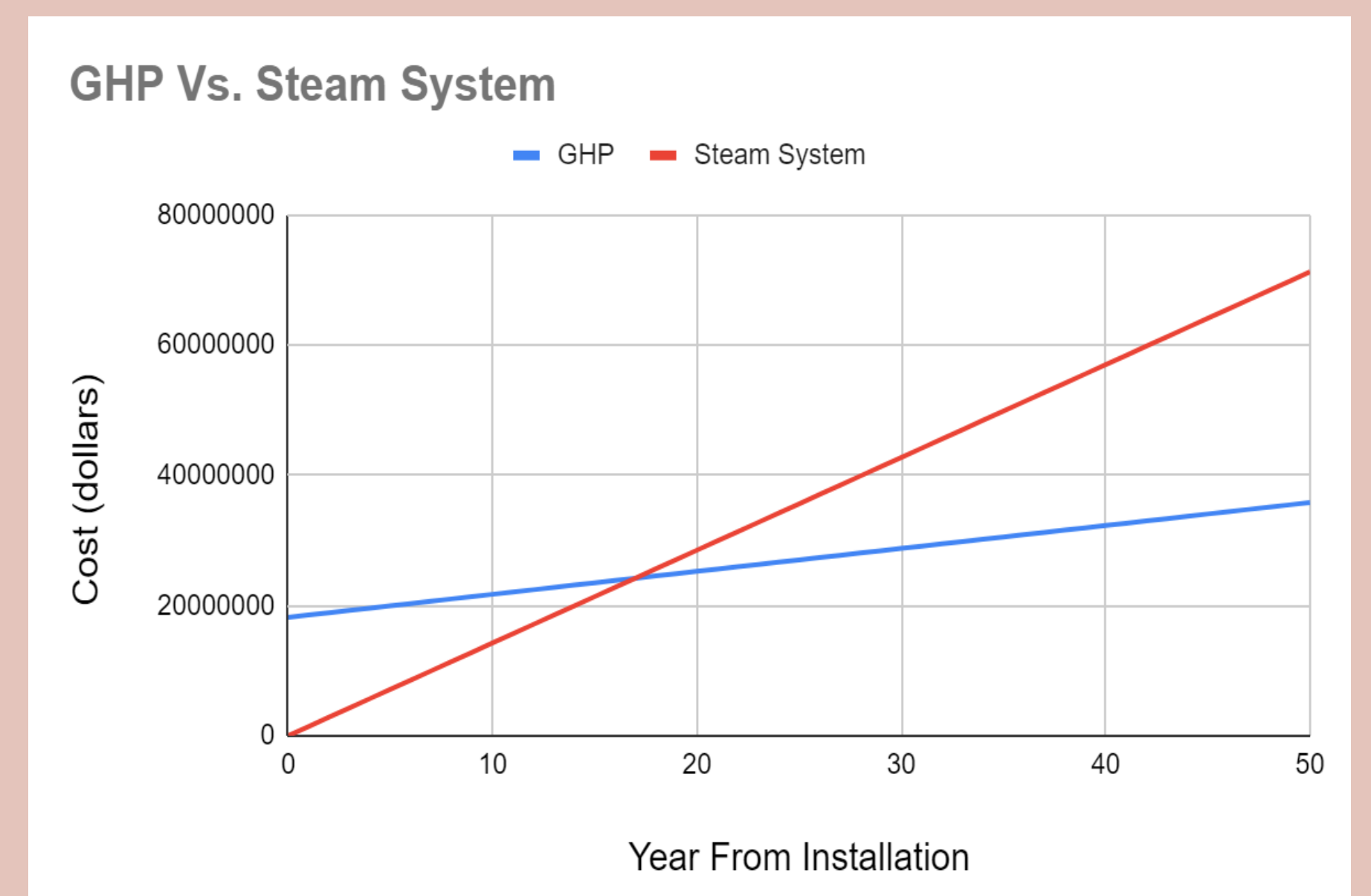


FINANCES

-Cost of the well field is around 26 million

-Inflation Reduction Act of 2022 provides a 30% tax rebate for installation

-Energy Savings for Heating Alone are about \$1,072,528.14 per year



LOOKING TOWARDS THE FUTURE

1) Change the Narrative with Harrison Street Group

- Pivot sustainability goals towards GHP's

2) Contact Local GHP Contractors

- Potential contractor: NEGPA

3) Dig Test Wells

- Determine the capacity of the project by analyzing the soil

4) Execute

- Install the GHP system during the summer months

Citations:

Figure 1: "Enhanced Geothermal System." Wikipedia, Wikimedia Foundation, 20 Feb. 2023, https://en.wikipedia.org/wiki/Enhanced_geothermal_system.
Figure 2: Worcester Polytechnic Institute (2019). Interactive Map of WPI. [wpi.maps.edu](https://maps.wpi.edu/). Retrieved February 24, 2023, from <https://maps.wpi.edu/?id=609#1ct/?s/>.

