

# Amherst College Networked Geothermal System

The largest capital project in Amherst College's history, replacing a campus-wide steam heating system with a networked geothermal district energy network to achieve carbon neutrality by 2030.

<p>LOCATION</p> <p><b>Amherst, Hampshire County, Massachusetts</b></p>	<p>PROJECT TYPE</p> <p><b>College</b></p>	<p>CURRENT STATUS</p> <p><b>Under construction (as of April 2026)</b></p>
<p>LEAD ORGANIZATION</p> <p><b>Amherst College</b></p>	<p>SYSTEM SCALE</p> <p><b>80 buildings, 143 boreholes, 3,130 tons cooling capacity</b></p>	<p>ESTIMATED COST</p> <p><b>~\$80M total (self-financed)</b></p>
<p>KEY OBSTACLE</p> <p><b>Connecting a legacy steam campus to low-temperature geothermal while maintaining operations</b></p>		

## PROJECT DESCRIPTION

Amherst College is constructing a networked geothermal system to serve its entire campus, installing a 143-borehole field and approximately 10,000 feet of underground piping connected to the central energy plant.<sup>1,2</sup> The system replaces the college's existing steam-based heating infrastructure with a low-temperature hot water network powered by ground-source heat pumps, serving 80 buildings and approximately 3,130 tons of cooling capacity.<sup>2,8</sup> The project is the centerpiece of Amherst College's Climate Action Plan, which commits the institution to carbon neutrality by 2030.<sup>1</sup>

Construction broke ground in March 2023. Phase 1, which included 10,000 linear feet of distribution piping and conversion of 10 buildings, was completed in fall 2023.<sup>8</sup> Subsequent phases will continue building conversions and heat pump installation through 2029, with full campus steam retirement expected by 2030.<sup>1</sup> The

## TIMELINE

**2019:** Integral Group zero carbon energy study

**May 2022:** Board of Trustees approval

**March 2023:** Phase 1 construction begins

**Fall 2023:** Phase 1 complete (10 buildings)

**2030:** Full campus steam retirement expected

## POLICY ANCHOR

Amherst College Climate Action Plan, committing to carbon neutrality by 2030.

project is expected to reduce Amherst College's carbon emissions by approximately 13,300 metric tons of CO<sub>2</sub> annually.<sup>8</sup>

Second Nature Carbon  
Commitment signatory.<sup>1,4</sup>

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## KEY ACTORS AND GOVERNANCE

The Board of Trustees formally approved the project in May 2022, with Chair Alison Overseth and President Kathleen McCartney providing institutional leadership.<sup>2</sup> Internal capital project managers Chris Tait and Daren Gray lead day-to-day oversight, supported by the Climate Action Task Force.<sup>4</sup> Integral Group, a sustainability and engineering consultant, produced the 2019 Zero Carbon Energy Study that guided the campus energy transition, and Salas O'Brien serves as lead design engineer.<sup>5,6</sup> Additional partners include Haley & Aldrich, Berkshire Design, and C&H Architects for engineering, design, and permitting support.<sup>4</sup>

## NEXT STEP

Complete Phase 2 building conversions through summer 2025; begin Phase 3 (central district) including Mill River area work; finalize IRA tax credit applications.

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## FUNDING AND COSTS

The Amherst College Board of Trustees authorized approximately \$80 million for the geothermal project, funded entirely through institutional capital.<sup>7</sup> The new energy system will require an estimated \$4.4 million every 17 years for infrastructure replacement, compared against the existing steam system's ongoing maintenance costs.<sup>8</sup> The college is pursuing IRA tax credits, including prevailing wage, domestic content, and energy community bonus credits, though specific dollar amounts have not been publicly disclosed.<sup>10</sup>

Unlike community-led or utility-led projects, Amherst College's self-financing model bypasses the feasibility-to-construction funding gap that stalls many Massachusetts geothermal projects. A 30-year lifecycle net present value comparison found the geothermal system (\$279M) less costly than maintaining the status quo (\$340M).<sup>2,10</sup>

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## PERMITTING AND APPROVALS

The project requires a Board of Health geothermal well permit, wetlands permits related to Fearing Brook, and standard building, drilling, street opening, and railroad permits for subsurface infrastructure.<sup>9,10</sup> Agencies with oversight include the Amherst Board of Health, Conservation Commission, and local building authorities.<sup>11</sup> Despite initial delays in obtaining the drilling permit, key approvals have been secured and construction is proceeding on schedule.<sup>11</sup>

Massachusetts law requires geothermal boreholes to be registered and all drillers to hold MassDEP certification.<sup>6</sup> The Conservation Commission approved the project with conditions related to Fearing Brook wetland protection, and a well construction permit for the central energy plant borefield was issued in January 2026.<sup>11,12</sup>

## COMMUNITY ENGAGEMENT AND EQUITY

Engagement has taken place through formal and informal channels, including public hearings, planning board presentations, Conservation Commission hearings, and Board of Health proceedings, along with town committee updates and opportunities for public comment.<sup>12</sup> Local news coverage and college communications have informed the broader Amherst community.<sup>8</sup> One concern documented in the public record involves potential impacts to wetlands and Fearing Brook, raised during Conservation Commission discussions.<sup>12</sup>

Equity and environmental justice are not central to the project's stated rationale, which is framed around institutional decarbonization and climate commitment rather than community-serving infrastructure. Northampton's January 2025 fossil-fuel-free building code update and its October 2024 designation in the Commonwealth's Municipal Fossil Fuel Free Building Demonstration Program provide broader municipal policy context for the region.<sup>5,13</sup>

### WHY THIS CASE MATTERS

Amherst College demonstrates how networked geothermal can be deployed efficiently when led by a well-capitalized institution, but the case also highlights the privilege inherent in that pathway. Unlike municipalities or community-led projects that struggle to cross the feasibility-to-construction funding gap, Amherst College moved directly from study to construction by self-financing the full \$80 million. The project faces real logistical complexity in converting a legacy steam campus while maintaining uninterrupted operations, yet its capacity to absorb permitting delays, manage multi-year construction, and navigate regulatory processes reflects resources unavailable to most communities considering networked geothermal.

### Sources

1. Amherst College, "Climate Action at Amherst," n.d. PJ5\_ClimateActionplan\_R — <https://www.amherst.edu/about/sustainability/climate-action>
2. Chris Tait (LinkedIn), "No rest for the Amherst College Climate Action Plan!" May 2025. PJ5\_Linkedin\_Post
3. [Duplicate of source 1]
4. Amherst College, "East Lot Redevelopment Projects Planning Board Public Meeting," August 21, 2024. PJ5\_AO\_Permitting — <https://www.amherstma.gov/ArchiveCenter/ViewFile/Item/17434>
5. Amherst College, "Decarbonization of Our Campus Energy System," n.d. PJ5\_Decarbonization — <https://www.amherst.edu/about/sustainability/reporting-and-operations/climate-action-plan/decarbonization-of-our-campus-energy-system>
6. Integral Group, "Amherst College Zero Carbon Energy System Study," January 2019. PJ5\_Feasibility\_IntegralGroup2019 — [https://www.amherst.edu/system/files/media/Integral%20Group\\_Amherst%20College%20Report\\_January%202019.pdf](https://www.amherst.edu/system/files/media/Integral%20Group_Amherst%20College%20Report_January%202019.pdf)

7. Andrew J. Nussbaum / Board of Trustees, "Amherst Formalizes Commitment to Phase Out Fossil Fuel Investments," March 31, 2021. PJ5\_TotalCost\_Z — <https://www.amherst.edu/about/president-college-leadership/trustees/statements/node/797137>
8. Joshua Nife, "Geothermal Energy Switch Makes College History," *The Amherst Student*, March 29, 2023. PJ5\_Num\_Buildings\_Connected
9. Amherst College, "East Lot Redevelopment Projects Planning Board Public Meeting," August 21, 2024. PJ5\_AO\_Permitting, p. 3 — <https://www.amherstma.gov/ArchiveCenter/ViewFile/Item/17434>
10. Amherst Board of Health, "Townhall Meeting," October 9, 2025. PJ5\_AT\_Drilling\_Permit\_Extension, p. 3 (URL not yet located)
11. Amherst College, "Well Construction Permit 151 College Street," January 14, 2026. PJ5\_Amherst\_College\_Well\_Construction\_Permit (URL not yet located)
12. Amherst Conservation Commission, Meeting Minutes, July 2024, p. 3. PJ5\_AN\_Permits\_Wetlands — <https://www.amherstma.gov/ArchiveCenter/ViewFile/Item/17683>

**Sources still needed:** A geothermal-specific feasibility study (Integral Group's 2019 study evaluates multiple renewable pathways, not geothermal alone; project manager contacted but no geothermal-specific report identified); detailed Conservation Commission conditions regarding Fearing Brook wetland impacts and any conditions Amherst College was required to meet before approval.