Sustainability Fellowship
Municipal Greenhouse Gas Inventory
City of Lebanon
Lebanon, NH

About the Sustainability Fellows Program:

UNH Sustainability Fellowships pair exceptional students from across the U.S. with municipal, educational, corporate, and non-profit partners in New England to work on transformative sustainability initiatives each summer. Sustainability Fellows undertake challenging projects that are designed to create an immediate impact, offer a quality learning experience, and foster meaningful collaboration. Fellows work on-site with their mentors at partner organizations for 10 weeks, supported by a network of Fellows, partners, alumni, and the UNH Team. Graduate students, exceptional undergraduate students, and recent graduates from any accredited college or university are eligible to apply.

A detailed description of one Fellowship follows. To learn more about the other Fellowships offered this year, and for application instructions, see: www.sustainableunh.unh.edu/sustainability-fellows.

About the Fellowship:

Lebanon has been actively engaged in sustainability endeavors for approaching a decade, with efforts spanning from policy commitments to specific operational project endeavors. In 2009, in response to the City signing an agreement encouraging itself to meet or beat the Kyoto Protocol by achieving a 7% greenhouse gas (GHG) emissions reduction from 1990 levels by 2012, the City completed a baseline emissions inventory of its municipal facilities, so as to establish a “benchmark” from which reduction goals could be measured.

In 2012, the City adopted the 2030 Lebanon Master Plan, which contains the following goal stated within the Energy Chapter:

“The City shall comply with the New Hampshire Climate Action Plan, which aims to reduce greenhouse gas emissions 80% below 1990 levels by 2050. The NH CAP has chosen a mid-term goal of reducing greenhouse gas emissions 20% below 1990 levels by 2025.”

In 2017, the Lebanon City Council approved a resolution for the City to join the Climate Mayors Network and commit the City to the goals of the Paris Climate Accord.
With the updated commitment in place, we find ourselves again needing to engage in an exercise of measuring performance toward achieving related goals. The Fellow will update our baseline emissions inventory to support: evaluating progress, re-examining our best or highest priority areas for improvements, and creating an updated benchmark year for future comparisons. Additionally, as time permits, we would seek guidance from the Fellow on opportunities to expand from the current local government operations benchmarking and GHG emissions inventory, to a community scale GHG inventory report.

Outcomes:

The main objective is to assist the City in evaluating itself in the context of the GHG emission goals that it has set for itself. The following project outcomes are intended to support this objective:

- The completion of an updated 2019 Local Government Operations (LGO) baseline emission inventory, which may include modifications to the approach utilized in 2009, as informed by a review of recently completed efforts conducted by other New England municipalities.
- The 2019 LGO baseline emission inventory will provide emission sources and metrics that were omitted from the 2009 inventory, increasing the accuracy of the inventory. This is conditional upon the sensibility, as well as the logistical feasibility of including such.
- City leaders, staff, and the general public will be informed as to the current status and trends via the provision of a report and/or presentation.
- As a result of this effort, the City will be better situated to replicate an emissions inventory in future years.
- The City will be informed as to best practices and opportunities for expanding the LGO emission inventory to a community scale inventory.

Impact:

The Fellow’s work has the potential for significant impact as the City has continuously struggled with routine monitoring of performance and successful benchmarking, even though the benefits of such are well known. Foremost, the project outcomes will allow City staff to re-analyze the greatest opportunities for GHG emission abatement, directing efforts to such. The project will also demonstrate the effectiveness of recent initiatives, to recognize positive ‘stories’ of energy use reduction, and in turn GHG reductions. From a community engagement perspective, the Fellow’s work could excite and re-invigorate the significant number of members engaged in mitigation efforts, attract more to the cause, and lead to a “doubling down” of the intensity of the effort.
Within the Upper Valley region, Lebanon is looked to as a leader, and this effort will reinforce our policy commitments with the message that the community is serious about addressing GHG emissions and climate change. We hope the project may serve to assist the surrounding communities with their own ongoing commitments and subsequent mitigation efforts.

Skills or expertise gained from this project will include:

- First-hand knowledge of municipal operations, governance, decision-making and program implementation.
- Experience coordinating and implementing a GHG inventory program for an entity with a $55M annual budget that has set substantial GHG reduction goals.
- Experience observing how a municipality implements substantial GHG reduction measures: municipal building energy conservation, solar power, landfill gas-to-energy, real-time pricing of electricity, a home Tesla Powerwall battery pilot project, a highly-unique municipal aggregation program, and our smart/networked LED streetlight conversion. All of these should be active or in implementation phase in the summer of 2019.
- The deliverable, an inventory report, will become a valuable addition to the student’s professional portfolio in the short-term, and the project overall will deepen their pool of potential networking and reference contacts in the long-term.

Desired Qualifications:

- Educational experience such as BA, BS, or graduate degree in a related field, e.g. environmental studies, sciences, biology, sustainability, etc.
- Project management skills such as the ability to define action tasks, set a working schedule, and provide deliverables
- Good communication and writing skills
- Experience with computer database programs including data input and analysis
- Experience or familiarity with the EPA’s Portfolio Manager or other GHG metric tracking software programs a plus
- Ability to laugh, joke, tolerate, negotiate, detach, and diplomatically persuade

Work Location: City of Lebanon, office of Energy and Facilities Management, 193 Dartmouth College Highway, Lebanon NH, 03766.

Mentors: Primary: Mark Goodwin, Sustainability Planner; Rebecca Owens, Associate Planner and former UNHSI Fellow. Support: Tad Montgomery, Energy and Facilities Manager.

Compensation: $6500 summer stipend
(taxable and paid on a two-week payroll cycle over the course of the fellowship term)
Expectations:
Fellows are expected to be primarily dedicated to their assigned projects throughout the summer, and also participate in a variety of networking activities, professional development opportunities, and presentations coordinated by UNHSI. Specifically, Fellows are expected to:

- Attend a mandatory orientation at UNH prior to the start of the fellowship term, **May 28-30, 2019**. (Travel scholarships may be available for students traveling from outside New England.)
- Work full-time on-site at the partner organization for 10 weeks, for a total of 400 hours, **June 3 - August 16, 2019** (an eleven-week period, allowing for one week off, as mutually agreed upon with supervisor).
- Complete a fellowship project according to the work plan (with adjustments as necessary).
- Participate in weekly webinars or advisory group meetings.
- Present work at mid-term and final poster sessions at UNH on **July 12 and August 9**. (Travel support available.)
- Engage in additional professional development, networking, and advisory activities as offered.
- Provide and receive feedback at the end of the fellowship.

Apply by February 7 at [www.sustainableunh.unh.edu/sustainability-fellows](http://www.sustainableunh.unh.edu/sustainability-fellows).

Questions may be addressed to [megan.carney@unh.edu](mailto:megan.carney@unh.edu).