Sustainability Fellowship
Municipal Greenhouse Gas Inventory
City of 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. This work spans the spectrum from policy commitments to plan development and implementation, including specific operational measures, legislation, and now the redesign of our local electricity grid. In 2009, the City completed a baseline emissions inventory for municipal facilities. In 2009, the City also signed an agreement encouraging itself to meet or beat the Kyoto Protocol by achieving a 7% emissions reduction from 1990 levels by 2012. The metrics included within our 2012 Master Plan’s Energy Chapter, which guides current climate action planning, reflect a continued commitment to this goal. It states:

“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. Lebanon is rapidly moving towards 100% renewable electricity through our landfill gas-to-energy project and a municipal solar roll-out. The above actions to develop, adopt, and implement climate policy and a plan collectively drive the City’s leadership in sustainability, however our tracking of how each action affects the total carbon footprint has lagged. This Fellowship will address the City’s present need to undertake a
comprehensive greenhouse gas (GHG) inventory, develop a protocol for tracking emissions in the years ahead, and provide verifiable measurement of our progress in 2019 and beyond. The project could also serve as a catalyst to help the City achieve GHG policy goals by influencing the continued prioritization, selection, and implementation of energy-related projects and mitigation measures.

**Outcomes:**
The project goals are:
- Completion of a GHG inventory
- Development of a Data Foundation for Climate Action planning.
- Creation of a Legacy Inventory System for tracking GHG.

This project results in a department-by-department Local Government Operations (LGO) inventory, with the potential for a complementary community-wide inventory if deemed to be appropriate. (If there is additional time and capacity the City hopes that the Fellow will help the City to plan for the expansion of the GHG audit to encompass all sectors of the city, in addition to the municipality.)

**Impact:**
The Greenhouse Gas Inventory will help the City to quantify its emissions and compare emissions sources in order to identify the areas of greatest opportunity for GHG emissions abatement.

An outcome of an updated GHG inventory would be the ability to demonstrate and celebrate the positive impact of past and present mitigation and renewable energy projects, an important part of Lebanon’s communications or ‘storytelling’ about sustainability projects. Publicizing our efforts and successes will help to educate the general public about the value of this process, including the function of individual actions.

The completion of an updated GHG inventory will serve as a building block for the pending update to the existing Master Plan Energy Chapter, including the creation of a specific climate action plan.

In addition, the City’s various stakeholders will use the inventory as an opportunity to undertake GHG record keeping going in the future. Through the identification of present data gaps of incomplete or unavailable information or processes, the Fellow will help the City to create a solid benchmark and protocols for complete data gathering. This process or protocol will be designed to be easily used by City departments in future years to record data and analyze the impacts of GHG mitigation projects. This will include a mechanism to prioritize projects based on their potential GHG impact.

For the Fellow, 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 $71M annual budget that has set substantial GHG reduction goals.

• Second-hand experience with a municipality implementing substantial GHG reduction measures: municipal building energy conservation, a multi-site mega-Watt solar power project, landfill gas-to-energy, real-time pricing of electricity, a home Tesla Powerwall battery pilot project, a unique municipal aggregation program, and our smart, networked LED streetlight conversion. All of these should be active or being implemented 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.

• Lebanon starts on the path of documenting and consciously reducing its greenhouse gasses.

A completed GHG inventory will be a tangible product, serving the Fellow in their professional advancement within their chosen field.

**Desired Qualifications:**

• Educational experience such as BA, BS, or graduate degree in a related field, e.g. environmental studies, political science or government affairs, sciences, biology/ecology, environmental engineering, sustainability, etc.

• Project management skills such as the ability to define the bounds of a project, develop a working schedule and action tasks, and provide deliverables

• Good communication and writing skills; emotional intelligence.

• A basic understanding of energy, its different forms, its terms and metrics, and how it relates to global warming

• 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 would be 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: Tad Montgomery, Energy and Facilities Manager. Support: Mark Goodwin, Senior Planner; Rebecca Owens, Associate Planner and former UNHSI Fellow.

**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 [https://sustainableunh.unh.edu/sustainability-fellows](https://sustainableunh.unh.edu/sustainability-fellows).

**Questions** may be addressed to megan.carney@unh.edu.