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Energy Efficiency and Carbon Pollution Internship Program Description

Includes Inventory & Plan Modules

*Regional Environmental
Internship Program
(REIP)*



Missouri
Gateway
CHAPTER



Energy Efficiency and Carbon Pollution Internship

PROJECT DESCRIPTION

INTRODUCTION

The *Energy Efficiency and Carbon Pollution Internship* is an opportunity for local governments, local universities, and the local philanthropic community to work together in a cost-effective way to achieve common goals: goals important to each individually and to the St. Louis region as a whole. These include maximizing energy efficiency, thereby reducing energy costs and extending the life of our energy supplies; reducing carbon pollution; building the capabilities of local governments throughout the region; and supporting local educational institutions.

BASIC DESCRIPTION

The Energy Efficiency and Carbon Pollution Internship works with local governments to help them reduce energy consumption and its associated carbon pollution in their local government operations and in the community as a whole. It typically estimates energy use and its associated carbon emissions community-wide in transportation, solid waste disposal, buildings, lighting, wastewater treatment, and potable water delivery. It then estimates future trends and identifies opportunities to reduce energy consumption, thereby reducing expenses, increasing efficiency, and reducing carbon emissions. It recommends a reduction goal, evaluates existing and proposed strategies to achieve the goal, and builds a plan to implement the strategies. Local governments have the option to include opportunities beyond reducing energy consumption—such as the development of renewable energy resources, the conservation of natural resources, forestry (urban and beyond), agriculture, and green jobs. The internship addresses the co-benefits of its recommended initiatives, such as saving money on energy costs, improving air quality and public health or reducing storm water runoff. In addition, as mandated by the EPA, the State of Missouri has developed a State Energy Plan to reduce the consumption of energy from fossil fuel, thereby reducing carbon pollution. The internship will help local governments begin the process of aligning with the overall goals of the plan.

The Internship consists of two modules. The Inventory Module involves estimating energy consumption and the carbon pollution and emissions associated with it. It is primarily a technical internship. It involves studying energy use in the major sectors of the local government's operations and the major sectors of the community as a whole. Using this data, the intern is able to construct an estimate of the amount of energy used, its cost, and the amount of carbon pollution it creates. In addition, using estimates of future economic, population, and energy intensity trends, the intern is able to construct an estimate of future energy use, energy costs, and carbon pollution.

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The Plan Module involves working with the local government to set an energy efficiency goal (for both the operations of the local government and for the community as a whole) and to begin development of a plan to achieve the goal. Since carbon pollution results primarily from energy use, improving energy efficiency and reducing waste also identifies opportunities to reduce carbon pollution. This module is primarily administrative. It will involve helping to establish and lead a process to identify and evaluate abatement measures, including those already in place. It will also involve helping to educate municipal staff and officials and conducting community outreach. If the local government is participating in the Compact of Mayors, the internship will include abatement and mitigation measures as well the climate adaptation measure required by the Compact's commitment.

The tasks for both elements are too large to be successfully combined into a 12-week experience. Thus, the internship is structured as two consecutive 12-week modules – the Inventory module being followed by the Plan Module. When possible, the modules are best completed by a single intern, as a single, 24-week internship experience with the inventory module beginning in the summer or fall.

TECHNICAL TRAINING AND TOOLS

Technical training for the internship will be provided by ICLEI – Local Governments for Sustainability. ICLEI will provide training in the theoretical material, technical protocols, and data collection processes. They will provide specialized computer tools, protocols, and examples of national models for planning, resource development, and outreach.

ICLEI training and resources are accessed when the local government joins ICLEI. They are provided chiefly via webinars and the Internet. In addition, the intern(s) will participate in an orientation conducted by USGBC-Missouri Gateway Chapter, who will make every effort to connect intern(s) with other interns participating in or who have participated in similar internships hosted by other local governments as well as other applicable local resources and advisors. As long as a local government maintains their membership, ICLEI's resources will remain available for telephone consultation regarding the inventory and planning process. (For additional information about ICLEI, see their webpage: www.icleiusa.org.)

The technical tools needed for this internship include inventory protocols, data collection forms, a computer program used to calculate carbon pollution from energy use data, and a computer program used to evaluate the effects of proposed abatement measures. All will be provided by ICLEI once a local government has joined.

PROJECT



PROSPECTIVE INTERNS AND QUALIFICATIONS

The internship will be of interest to students in urban planning and environmental programs, as well as technical, engineering, or scientific programs. It requires a student with a bachelor's degree or beyond.

The following qualifications will be desired:

Prior experience working for and knowledge of government, particularly local/city government;

Experience working in and leading meetings and work groups;

Experience with issues surrounding energy use, transportation, utilities, and/or solid waste;

Assertive personality, persistence, and strong people skills critical for working with a variety of city departments and personalities;

General understanding of the causes, science, and impacts of carbon pollution;

Basic data manipulation skills; and

Basic computer skills.

INTERN WORK LOAD

Each module will involve approximately 480 work hours by the intern (12 weeks at 40 hours per week). Combined, they will involve 960 work hours (24 weeks at 40 hours per week).

The number of work hours required to complete an energy and carbon pollution inventory typically varies according to the size and complexity of the local government and its jurisdiction, as well as the accessibility of the required information. The St. Louis region has dozens of small municipalities. For these communities it might be possible to complete an inventory in less than 480 work hours. Because there would be duplication of effort in inventories for separate jurisdictions, one intern might be able to complete inventories for more than one local government within the 480-hour timeframe. Thus, under the scenario in which the modules are completed by different interns, an intern working on the Inventory Module might work with more than one local government at a time in order to create a sufficiently rich and challenging internship experience.

Not all of the hours during the period required to complete an energy and carbon pollution inventory will be spent actively working on the inventory, however. Some will be spent waiting for phone calls to be returned, for data to be produced, etc. During those hours, the intern could be involved in projects to educate local government staff and officials about energy efficiency, carbon pollution, the purpose of the inventory, and to communicate findings, results, and forecasts.



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The development of an energy efficiency and carbon pollution plan is a process that could vary considerably in length, depending on the size and complexity of the community and how extensive a planning process it undertakes. It may not be completed in 480 hours of work. An intern would be able to help initiate and design the planning process, survey existing measures, and would be able to organize and participate in some of the initial activities. An intern pursuing both modules over 24 weeks could work on activities related to the plan (for example, surveying measures that have already been taken by the local government) while waiting for data related to the inventory to come in, and then focus more intently on planning activities after completion of the inventory.

INTERNS

INTERESTED UNIVERSITIES

The following universities and academic programs in the St. Louis region have expressed an interest in participating in the Energy Efficiency and Carbon Pollution Internship program:

Saint Louis University:

Masters of Public Administration
Masters in Urban Planning & Real Estate Development
Masters in Urban Affairs
Masters in Sustainability

Southern Illinois Univ. – Edwardsville

Masters of Public Policy and Public Administration

University of Missouri – St. Louis

Masters in Political Science / Public Policy
Masters of Public Administration
Washington University:
Masters in Arch. & Urban Design
Master in Environmental Studies

Webster University

Masters of Science in Environmental Management
Masters of Public Administration

Responsibilities of participating universities will include prospectively and retrospectively determining that the internship program meets the requirements of the academic program. In addition, participating universities will need to establish what intern deliverables (beyond those required by the internship program) are required to meet academic requirements. The primary mentor for the intern during the internship will be a staff member at the host local government, supplemented by input from USGBC-Missouri Gateway Chapter and ICLEI.



LOCAL GOVERNMENT PREREQUISITES AND SUPERVISION

As a prerequisite for this internship program, a local government should be familiar with ICLEI's Five Milestone process, and be willing to commit to developing an energy efficiency and carbon pollution plan that follows those steps. The local government should have authorized participation in the internship program plus membership in ICLEI. (For more information, see the ICLEI website, www.icleiusa.org.)

Relatively little local government staff time will be required for the inventory module of the internship. The technical training, protocols, and tools will be provided by ICLEI once the local government has joined. Interns are expected to be self-motivated and work independently. Municipal staff responsibilities will include:

- Orienting the intern to the local government,
- Distributing a memo informing all departments and staff of participation in the internship program and requesting cooperation (sample memo can be provided);
- Providing interns with a workspace, desk, and computer;
- Facilitating the intern's efforts to obtain data from internal and external sources when necessary;
- Setting aside a small amount of time (e.g. 1 hour weekly) to review the interns work and make suggestions;
- Being available when questions arise. It is anticipated that staff will need to complete a 2-3 page evaluation form at the end of the internship, review interim data summaries, and review the inventory report produced by the intern.

Greater local government staff involvement will be required during the Plan Module of the internship, especially if the local government is participating in the Compact of Mayors and including climate adaptation measures. As it involves developing internal structures for the local government, as well as designing and running processes to establish fundamental policy, it is not a task that an intern should pursue independently.

It is likely that local governmental staff will want to retain primary responsibility for many of the activities, working with and delegating to the intern as appropriate. The time required will certainly be less than if the projects were done wholly by staff. However the number of staff hours required will depend on the projects selected and the amount of responsibility delegated to the intern.

To provide continuity, both modules of the internship should be hosted in the same city department. It could be any of several, including the City Manager's Office (or Mayor's Office in municipalities that don't use the city manager model), Public Works Department, Municipal Utility (gas or electric), or Planning Department. The Plan Module will best be hosted by the Planning Department. For graduate student interns, the staff supervisor will need to have an advanced degree that meets the national requirements for internship supervision in the intern's academic field.

It is understood that many small local governments in the St. Louis region do not have professional staff that meet these requirements. USGBC-Missouri Gateway Chapter is willing to work with interested, smaller municipalities to provide alternative arrangements.

STIPENDS AND OTHER BUDGET ITEMS

The cost of the internship per module is \$6,000. The internship stipend is the primary cost associated with the internship. Costs beyond the internship cover program management and promotion by USGBC-Missouri Gateway. The REIP model contemplates funding as much of it as possible via donations or from the private sector or foundation grants. In some cases, it may be possible to cover the whole stipend in this way. In other cases, it may only be possible to partially cover the cost of the internship stipend, and the local government will provide the uncovered portion or assist with securing donations from the local community. The stipend will be paid by USGBC-Missouri Gateway to the intern at a rate of \$11 per hour. Thus, internship stipend for each module will be \$11/hr. * 480 hours = approximately \$5,300, and the stipend for both halves of the internship will be \$10,600. Currently, the stipend is paid in monthly installments to the intern.

The primary budget items for the local government include the yearly membership in ICLEI and the local government's potential contribution to the intern stipends. The ICLEI Membership Fee Schedule is based on population (as of October, 2014):

\$600 (population up to 50,000);

\$1,200 (population 50,000-100,000).

(Source: <http://icleiusa.org/membership/join-iclei/>)

The local government should anticipate providing the intern with a place to work and a computer connected to the Internet. The local government should also expect to cover ancillary expenses, such as printing and copying, expenses for holding meetings and charettes, etc.

The cost of administrating and promoting the program will be the responsibility of USGBC-Missouri Gateway Chapter.

Specific Work Activities

While every local government is different and may want to develop custom activities for the internship, following is a model list of activities involved in the two modules of the internship. More detailed information is available in protocols available through the ICLEI website and more recently through the Compact of Mayors website.

-Inventory Module:

Training from ICLEI.

- What carbon dioxide is and how it is related to climate change.

- The major sources of carbon pollution.

- The process of conducting an inventory.

- How to use CACP2009.

- Protocols for conducting an inventory.

The inventory and forecast for local government operations.

- Identify major sources of energy consumption.

- Identify non-energy carbon pollution sources.

- Identify data needed.

- Identify where needed data may be obtained in local government.

- Interact with various departments to obtain data.

- Input building energy data into ENERGY STAR Portfolio Manager.

Community energy consumption and carbon pollution.

- Identify major sectors of energy consumption.

- Identify major non-energy carbon pollution sources.

- Identify data needed.

- Identify where community data is available.

- Interact with utilities, community agencies, and private organizations to obtain information.

- Develop strategy for obtain information where necessary.

Develop report.

- Enter data into CACP2009 computer program

- Work with supervisor to analyze results, develop recommendations.

- Write report, communicate results to staff.

Develop presentation and present to relevant body (e.g. City Council).

Plan Module:

(Choose among the following, depending on time availability, intern's interests, and local governmental goals.)

Training by ICLEI.

- Organizational structures.

- Outreach and education.

- The planning process and community involvements.



WORK ACTIVITIES

Successful models already in use.

Educate and Build Support for initiating action to mitigate/adapt to energy use challenges and the effects of carbon pollution.

Energy use/sustainability champion.

Assist mentor to identify best way to structure the “champion” function within the local government. (E.g. sustainability director, staff green team, citizen environmental committee, etc.)

Assist mentor to plan and establish the “champion” function within the local government.

Education within local government operations.

Work with mentor to educate local government staff about energy use challenges/carbon pollution, and the process of mitigation/adaptation.

Work with mentor to educate appointed bodies about energy use challenges/carbon pollution and the process of mitigation/adaptation.

Work with mentor to educate elected officials about energy use challenges/carbon pollution and the process of mitigation/adaptation.

Education/support building in community.

Work with mentor to identify best opportunities to educate community.

Work with mentor to develop process for involving community in planning process to mitigate/adapt to the damage caused by carbon pollution.

Participate in planning, administering, conducting community involvement events.

Participate in writing summary of results.

Energy efficiency and carbon pollution action plan.

Research existing local government programs and policies related to energy efficiency and carbon pollution.

Research programs and policies in other local governments related to energy efficiency and carbon pollution.

Identify strategies that may be of use.

Use ICLEI tools to develop an energy efficiency and carbon pollution plan.