

Powering Energy Efficiency & Impacts Framework Project

The U.S. Department of Energy sponsored Powering Energy Efficiency & Impacts Framework (PEEIF) project is a collaborative effort demonstrating how data, analysis and mapping can support increases in energy efficiency and services to low-income households.

Project Area Characteristics

Population: ~300,000

Per Capita Income: ~\$36k

Population with income under the 150% poverty level: ~110,000

Housing Units: ~140,000



Challenge: Low-income households spend a disproportionate amount of disposable income on energy costs. Government agencies, utilities, non-profits, and municipalities often serve the same “in-need” residents with limited impact.

Solutions

- The creation of a secure central database with Geographic Information System (GIS) capability enables existing data to be layered, shared and analyzed so service providers can improve efficiency to better utilize limited resources.
- Depending on the data-sharing agreements between partners, PEEIF allows different “visibility” options and each data-providing partner can see their confidential data overlaid on essential “blended” or aggregated data.
- Visual displays have user-controlled filters to create unique configurations which provide new insights that can increase the effectiveness of energy service providers and help relieve energy burdens on residents.



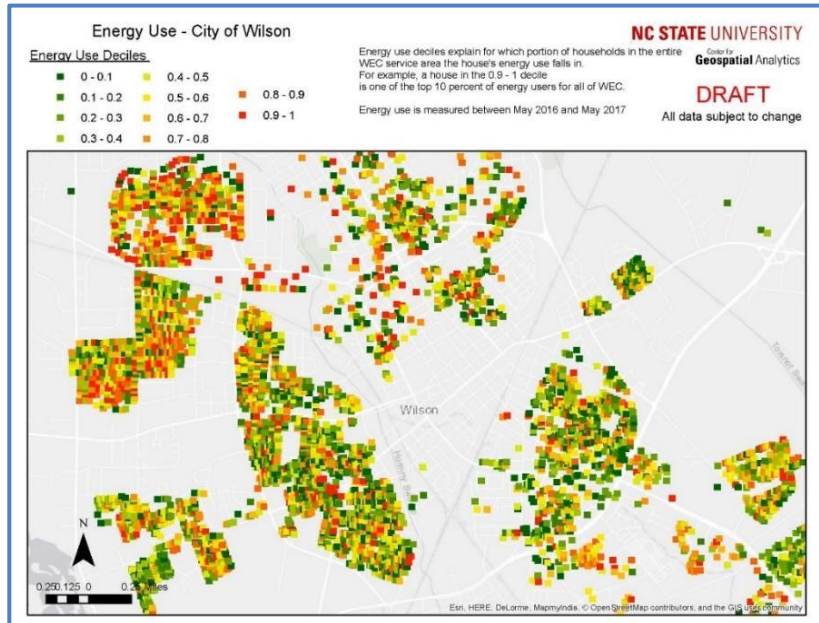
Pilot Project Collaborating Beneficiaries: The NC Dept. of Environmental Quality (DEQ), NC Dept. of Health & Human Services (DHHS), City of Wilson Energy, Roanoke Electric Cooperative (REC) and the Town of Enfield signed data-sharing agreements to protect the confidentiality of client information and facilitate the development of a GIS mapping

application and database tool utilizing the following data:

- American Community Survey (ACS) U.S. Census data on income, age, and population
- Home age and square footage
- Electricity usage data (3 utilities) and natural gas usage data (1 utility)



- Data from the Heating and Air Repair and Replacement Program and the NC Weatherization Assistance Program
- Service recipient data from the Low Income Home Energy Assistance Program (LIHEAP) and Crisis Intervention Program (CIP)



The Value Proposition

At the end of the project, the ArcGIS database framework and accompanying user manual will become available for new users to populate with their own data. Members of the current project team are available to expand this existing PEEIF tool by adding new partners and data depending on user needs.

The tool provides unique value for each user. Depending on data availability, user permissions and interests, individual users can use the tool to identify:

- High poverty communities
- The most energy-efficient or least energy-efficient homes, as compared to other residences served by a specific utility
- Communities served by participating federal and state energy efficiency and energy assistance programs
- Improvement in energy efficiency intensity among households

Next Steps

Learn more about the PEEIF tool by checking out the ArcGIS maps and 'Story Map' to experience the tool's capabilities. Visit: go.ncsu.edu/peeifaccess to get started.

Provide this document to additional governmental agencies, non-profits and utilities interested in increasing energy efficiency in low-income households.

To further consider the tool for your organization's effectiveness and community's improvement:

Ron Townley, Upper Coastal Plain Council of Governments, 252-234-5965,
rtownley@ucpcog.org

Anne Tazewell, NC Clean Energy Technology Center, 919-513-7831,
anne_tazewell@ncsu.edu