



To: City of Longmont Staff

From: Shanti Pless,
Senior Energy Efficiency Researcher,
National Renewable Energy Laboratory

Re: NREL Research and Support for ModernWest Net Zero Energy Mixed Use Development

ModernWest, a new mixed-use development is being planned for an area near Longmont's Vance Brand Municipal Airport. The development, which includes a mixture of multifamily residential, commercial, and light industrial/warehouse space is striving for net-zero energy through a district systems approach. NREL is supporting the work with the ModernWest project team and stakeholders in order to assess and develop resources needed to resolve barriers and create replicable process to support future net zero energy district efforts. The ModernWest development has the potential to be a model for future sustainable district-scale development. Such a model will need to be thoroughly designed and analyzed by professionals in order to ensure the strategies can be replicated and become a smart growth tool for other communities and neighborhoods.

The Alliance for Sustainable Energy, LLC, manager and operator of the National Renewable Energy Laboratory (NREL) under U.S. Department of Energy (DOE) has a zero energy building research group at 15013 Denver West Parkway, Golden, CO 80401. An NREL team of researchers and energy engineers are providing technical support and modeling leadership to the ModernWest development team with the goals of transforming the national energy sector to reduce costs, increase resiliency, and meet our environmental goals. The performance and feasibility of district energy systems depends greatly on the efficiency features of the building designs in the ModernWest Development. NREL, as leader in zero energy building Research, supports ModernWest goals and development efforts by providing neutral 3rd party technical guidance on the efficient design of buildings and building systems, as well as support with the necessary information and tools to take steps toward planning and implementing highly efficient buildings and district systems.

In particular, the team will be evaluating the benefits of highly insulated and well-sealed multifamily building design strategies that will both reduce peak heating and cooling loads, but also result in a superior acoustical envelope to limit sound transfer from exterior sounds to the interiors, as well as sound transmission from residence to residence. In addition, the NREL modeling team has past experience evaluating glare concerns with PV systems around airport, and supporting the design considerations to ensure appropriate system orientation and location (see example of past analysis here: <https://www.nrel.gov/docs/fy14osti/62349.pdf>)

Shanti Pless, NREL