

HVAC Design Standards

Background: The efficiency of HVAC systems is dependent on proper sizing of equipment. The equipment size is dependent on location, orientation, insulation, building type, fenestration and building size. When buildings change use, change configuration or are upgraded or enlarged, the HVAC system should be reevaluated for proper function and sizing. The sizing of the equipment is done by a defined set of calculations known as a Manual J for residential buildings or a Manual N for commercial buildings. A Manual D is the corresponding duct design. When these changes are to a commercial building, an engineer typically provides these calculations. The building department reviews and approves these designs for new buildings but may not require or review any sizing calculations for “like for like” replacement of old equipment.

Goal: Increase the efficiency of HVAC systems across the GRU service area thereby reducing load, demand, use of regulated refrigerants, and reducing the cost for the owners of the systems. For the City to save money and energy when replacing HVAC systems.

Policy: The City’s building department will review past building permits for potential impacts on the HVAC load and require sizing (Manual J) before a “like for like” system is replaced. If duct work has been modified a Manual D will be required. The City will obtain a “Manual N” from a third party (not the contracting HVAC company) before replacing, changing, or upgrading HVAC equipment in order to verify correct sizing and design and by advised on energy efficient operation. This Manual N will be used for competitive bidding purposes in order to obtain the best possible design for the least amount of money.

Energy Review of Large Projects

Background: Large projects have an impact on the distribution of power, water, wastewater and other services provided by the City.

Goal: Projects should be reviewed for ways they can contribute to the overall stability and/or efficiency of the system. Examples include a microgrid, solar contributions, battery storage, or rainwater collection.

Policy: Projects will be evaluated for impact to the system and how they fit into expected growth patterns with respect to existing infrastructure in an area. As part of the development negotiation process the developer will be asked to mitigate his impact to the system. When a development is presented to the City Commission for approval, the presentation will address these impacts and the mitigation.

Energy Districting

Background: Energy Districts have historically been areas where, through the economy of scale, efficient heating, cooling, and/or hot or chilled water are shared to a group of buildings. This allows greater versatility in the design of the structures, it frees property owners from the operation and maintenance cost of these systems, and typically there is greater reliability, redundancy and back up in the event of a power outage or system failure. A “net zero” energy district is a district that provides all its energy needs internally. A net zero energy district combines the synergistic effect of renewable energy, efficient building design, energy storage with both traditional energy districting and motivated tenants.

Goal: Opportunities for GRU to partner in the development process and expand GRU’s service role with its customers. Additional opportunities may be available for “net zero” energy districts as the City moves towards its goal of 100% renewable energy by 2045.

Policy: GRU and the City will look for opportunities for energy districting and for potential pilots for a net zero energy pilot project. The City will support these efforts with the cooperation and help from public works, the building department and the City Attorney’s office.