

## **9.0 ENERGY CONSUMPTION AND CONSERVATION**

Energy consumption would occur during construction and operation of the proposed Project. During construction, energy would be used for power equipment and construction vehicles. Once construction is completed and the Project occupied, energy would be required for heating, air conditioning, and the use of various appliances and electrical equipment. According to data published in the 2003 Commercial Buildings Energy Consumption Survey (Source: U.S. Department of Energy), retail space consumes approximately 73,900 BTUs of energy per square foot annually and office space consumes 92,889 BTUs per square foot annually. It is expected that 184,800 square feet of retail space would expend 13.7 billion BTUs<sup>1</sup> of energy annually. The proposed office space is expected to expend 1.4 billion BTUs of energy annually.

In a letter dated January 8, 2007, New York State Electric & Gas (NYSEG) stated that they would be able to provide required utility services at the Project location. See Correspondence in Appendix B.

It is unknown what energy conservation design measures would be used as the specific design of buildings would be tenant driven. Regardless, energy conservation is mandated at the state level. The design and plans for commercial buildings must comply with the New York State Energy Conservation Construction Code. The code specifies basic requirements that are mandatory for commercial buildings. Requirements apply to the building envelope, mechanical systems, and lighting.

With regard to the design of building envelopes, the NYS Energy code requires that:

- insulation R-values and glazing and door U-factors be certified by the National Fenestration Rating Council (NFRC) or by using default values found in tables published in the Code,
- vapor retarders be installed in non-vented framed ceiling, wall, and floor areas,
- insulation levels for walls, roofs, and below-grade walls and glazing areas, and U-factors for windows and skylights meet or exceed minimum efficiency levels, and
- air leakage be limited through the building envelope.

The NYS Energy Code also requires that water and air cooling and heating mechanical systems and equipment comply with code, and compliance is dependent on the type of mechanicals proposed.

In terms of lighting standards, the NYS Energy Code requires:

- manual or automatic controls or switches that allow occupants to dim lights and turn them on or off when appropriate (the Code identifies control, switching, and wiring requirements that apply to all buildings),
- total connected loads for indoor lighting systems that do not exceed power allowances for a building (the Code demonstrates how to comply with interior-lighting power limits), and
- energy-efficient exterior lighting (the Code specifies criteria for complying with exterior-lighting requirements).

The proposed Project would be required to comply with the requirements of the NYS Energy Conservation Construction Code.

---

<sup>1</sup> BTU, or British Thermal Unit, is a unit of heat equal to the amount of heat required to raise one pound of water one degree Fahrenheit at one atmosphere pressure; equivalent to 251.997 calories.

The Project would reduce travel time, mileage and fuel consumption for local residents who currently travel long distances to shopping centers out of the county or state. The proposed Project would benefit local residents by providing them with a wider variety of retail offerings than currently exists in Putnam County, precluding the need for them to travel long distances for comparative shopping and selection of goods that are currently available only in surrounding counties. This could potentially result in a significant reduction in vehicle miles traveled (VMT), thereby reducing gas usage and vehicular emissions at the regional level. For local households in the Town of Southeast that might shop at the future Stateline Retail Center on a weekly basis instead of traveling to major retail stores in surrounding counties the reduction in distance traveled one way would be 10 to 15 miles with a corresponding reduction in the annual VMT of 6% to 8%. With gasoline prices in the region now averaging near \$3.00 per gallon and the potential for prices to rise in the future, a saving of well over \$120 per year in fuel costs would be realized. This is based on vehicle mileage of 20 miles per gallon and a typical annual household VMT of approximately 18,400 miles per year.<sup>2</sup>

### 9.1 Energy Consumption and Green Building Technologies

The Project would incorporate a number of green building practices that would conserve energy and offset potential adverse impacts associated with energy consumption related to the construction and operation of the Proposed Action. The U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) standards for new construction have been considered during the development of the project plan including the site layout and building design to minimize impacts on energy consumption. The green building technologies considered for incorporation in the project design which, either directly or indirectly, would reduce energy use are as follows:

- a. Sustainable Sites
  - i. Reduce Heat Islands (Roofing)
  - ii. Alternative Transportation (bus and train access)
- b. Water Efficiency
  - i. Water Efficient Landscaping
  - ii. Water Use Reduction
- c. Energy and Atmosphere
  - i. Green Power
- d. Materials and Resources
  - i. Construction Waste Management
- e. Indoor Environmental Quality
  - i. Daylight and Views (only daylight with skylights)

Implementation of any or all of these practices would reduce energy consumption at the Stateline Retail Center. For a complete list and description of LEED principals considered for incorporation into the Proposed Action, refer to Chapter 2.0, Project Description of this DEIS.

---

<sup>2</sup> New York State Energy and Research Authority (NYSERDA), 2002 NYS Energy Fast Facts, NYSERDA website, 2005.