8.0 EFFECTS ON THE USE AND CONSERVATION OF ENERGY RESOURCES

Energy consumption will occur during construction and occupancy of the proposed residences and commercial space. During construction, energy will be used to power equipment and construction vehicles. The residences will consume energy for space heating, air conditioning, lighting, household appliances and other electrical devices once occupied. The impacts to energy resources are similar in the Meola Road Access Alternative as compared to the Hemlock Drive Access Plan.

Electricity and gas for the Orchard Ridge development will be provided by Orange and Rockland Utilities from a new underground distribution system that will constructed to distribute electricity to the development. Actual electrical and gas demands may vary considerably based upon the lifestyles and habits of the residential occupants.

The 320 dwelling units would be inhabited by households that would place demand on various energy sources. In a residential dwelling, energy is consumed for space heating, air-conditioning, water heating, refrigerators, appliances and lighting. According to data published in the 1997 Residential Energy Consumption Survey (Source: US Department of Energy), approximately 123 million BTUs are consumed per household annually in New York State. It is expected that 320 households would consume 39.36 billion BTU[1] of energy annually.

Energy conservation is regulated at the state level. The design and plans for residential buildings must comply with the New York State Energy Conservation Construction Code.

The code specifies basic requirements that are mandatory for all residential buildings. Requirements apply to heating and cooling systems, the hot water system, electrical system, material and equipment specifications and, sealing the building envelope.

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 nonvented 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.
- 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 mechanical equipment 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.

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[1] *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.*

- 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.

- energy-efficient exterior lighting. The Code specifies criteria for complying with exterior-lighting requirements.

The Orchard Ridge residential project will exceed the requirements of the NYS Energy Conservation Construction Code through the installation of high efficiency lighting fixtures.

Pedestrian Access

As shown in Figure 2-2 Preliminary Site Plan, the project has been designed in a pedestrian friendly manner. Sidewalks are proposed at the fronts of all eight residential buildings. A continuous network of sidewalks will be provided along Road "A" which provides access from NYS Route 303 to the rear or west side of the property. All residential buildings will be connected via sidewalks to the clubhouse and recreation building located near the project entrance and Route 303. The sidewalks will encourage residents to walk to the community clubhouse for recreation and social events. A sidewalk will also be provided on Road "J" which connects to existing Meola Road and an existing sidewalk on that street. A natural one-half mile looped walkway consisting of wood chips will be provided through and at the edges of the on-site wetland and wetland buffer. The walkway will provide a pleasant and scenic pedestrian amenity to encourage walking.

Mass Transit Access

Rockland County has an extensive public transportation network which includes buses, and train service, providing service and connections within Rockland County, as well as surrounding destinations including northern New Jersey, Westchester County and New York City. The project site will be served by an existing Transport of Rockland (TOR) bus route, Route 97. This route travels north-south from Stoney Point and Haverstraw on Route 9W, and then on Route 303, through Congers to Nyack, Orangeburg and Tappan in the south. Connections are available in Nyack to the Tappan Zeexpress bus route, providing access to Metro North train service at Tarrytown or White Plains stations. The existing bus service would also provide access to shopping opportunities at the Palisades Center mall.

The availability of existing mass transit routes for the project would enable residents to readily access mass transit thus reducing dependence on private vehicle trips and would make shopping at the Palisades Center accessible without using a private auto. As stipulated in the AAR zone change approval resolution, a bus shelter will be installed in the vicinity of the main access drive to facilitate residents access to mass transportation. These efforts will be coordinated during the site plan approval process.

Employment Practices

The applicant will employ construction workers and purchase construction materials from local sources. In addition to stimulating the local economy, this practice will save in fuel by reducing the distance workers and materials have to travel to the project site.