

August 20, 2018

County of Albemarle
Megan Nedostup – Principal Planner
Frank V. Pohl, PE, CFM – County Engineer
Department of Community Development
401 McIntire Road
Charlottesville, VA 22902

RE: Keswick Hall & Golf Club – Approval Request for Expansion of the Central Water Supply System
Tax Map No.: 080000000062A3; 08000000006200

Dear Ms. Nedostup and Mr. Pohl:

In conjunction with SP-2018-00001 Keswick Hall & Golf Club, the Applicant is also seeking approval to expand the existing central water system to increase the permitted capacity to serve the future domestic demands of the residences in Keswick Estates. Timmons Group evaluated the impact of the proposed Keswick Hall & Golf Club renovation on the existing domestic water system and previously submitted a report to the County titled, "Water and Wastewater Facilities Plan 2017 Update for Keswick Hall & Golf Club," dated December 1, 2017, revised March 19, 2017 (hereafter, the "Facilities Plan").

The existing central water system currently serves the domestic consumption needs of Keswick Hall & Golf Club and the surrounding residences. It consists of three drilled groundwater wells with a combined yield of 100.6 gallons per minute (GPM), two 18,000 gallon atmospheric ground storage tanks, dual 200 GPM booster pumps, a 6,000 gallon hydropneumatic storage tank, chlorine disinfection, and distribution piping.

Historical water consumption and well production data spanning the last three years were analyzed to determine the existing demands on the central water system. The existing Maximum Daily Demand was calculated as 59,800 gallons per day (GPD).

Timmons Group assigned proposed water demands based on the Virginia Department of Health Waterworks Regulation 12VAC5-590-690, unit demand calculations performed in previous studies of the water system, and sound engineering judgement. Projected demands for the Keswick Hall & Golf Club renovation were calculated based on descriptions and quantities provided by project architects Hart Howerton including 38 additional hotel rooms, a new Pool Pavilion, a small addition to the Villa Crawford Bar, an increase of 4 spa treatment rooms, and new Café/Retail space (collectively, the "Project"). Including the Project, the projected Maximum Daily Demand was calculated as 74,300 GPD.

Permit records provided by the Virginia Department of Health, Office of Drinking Water (VDH-ODW), Lexington Field Office (LFO), specifically Permit Number 2003400 Amended, lists the existing central water system permitted capacity as 76,000 GPD. Our analysis concludes that the existing permitted capacity of 76,000 GPD will not be exceeded by the projected Maximum Daily Demand of 74,300 GPD, therefore the existing water system is adequate to support the Project.

It was determined that adequate capacity is available for the Project, but future residential buildout within Keswick Estates will require additional water system capacity. The projected Maximum Daily Demand at buildout conditions was calculated as 104,600 GPD. A nominal permitted capacity of 110,000 GPD was selected as the design criteria for the expanded central water system. That will provide adequate water supplies to serve a total buildout of 124 residential lots.

The new water system components will include one or more drilled groundwater wells with a minimum safe yield of 40 GPM, an 18,000 gallon atmospheric ground storage tank, and replacement dual 250 GPM booster pumps designed in accordance with the Virginia Department of Health Waterworks Regulations. These improvements will be located at the existing central water system as shown on the map in Attachment A.

The Owner has already contracted with Timmons Group to perform engineering due diligence and design services for the water system expansion. To date, a hydrogeologic analysis of the central water system was completed by Golder Associates to locate the new well(s). Four potential well sites were identified in the Groundwater Exploration Report provided in Attachment B. A Preliminary Engineering Conference (PEC) and a well site inspection of each recommended well location were held with Mr. Steve Kvech, P.E., District Engineer from the LFO on May 29, 2018. All four well sites were approved for the construction of a well to be utilized as a public drinking water supply, as described in the Well Site Approval Letter in Attachment C. During the PEC, a Preliminary Engineering Report (PER) was requested for the Project. The Facilities Plan was submitted to the LFO for review. The PER was approved on July 17, 2018, as described in the PER Approval Letter in Attachment D.

The preliminary plan is to drill and test the well(s) until the desired safe yield and/or water quality are achieved. Once a suitable water supply is established, construction plans and specifications for the water system expansion will be commissioned and submitted to the appropriate review agencies for approval. Upon receipt of the necessary approvals, the Owner will implement the proposed improvements.

The Applicant respectfully requests approval to expand the central water system to provide a safe, reliable water supply for the future domestic demands of the undeveloped lots within Keswick Estates.

Please contact me if you have any questions or need any additional information.

Regards,

A handwritten signature in black ink, reading "Bruce Strickland, Jr." with a stylized flourish at the end.

Bruce W. Strickland, Jr., PE

cc: Valerie W. Long, Esquire, Williams Mullen (via email)