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April 16, 2024

Mt. Werner Water and Sanitation District
Beau Cahill

RE: Lot A and Lot B, Mountain Office Park Subdivision
2955 Village Drive, Steamboat Springs
Village Drive Apartments Development Plan

Dear City of Steamboat Springs Planning Department,

This letter is the water demand report for the development plan application of Lot A and Lot B, Mountain Office Park Subdivision. The Mountain Office Park is a two lot subdivision of 1.28 acres and is zoned Multi-Family 3 (MF-3). The property is located on the northwest corner of Walton Creek Road and Village Drive. There is an existing two story commercial office building constructed on Lot B touching the common property line of Lot A and Lot B. The proposed project is both a remodel and preservation of the existing building and a combined free market and workforce housing project.

Proposed Development:

The owners of Mountain Office Park Subdivision are proposing to preserve and remodel the existing building into eight larger sized two bedroom units. There will be additional 30 apartment units constructed in an attached L-shaped building on the north line and west line of property. Included in the thirty new apartments will be twelve dedicated work force units of varying in sizes from 516 sq. ft. to 960 sq. ft. All the new apartments will be two and three stories with enclosed parking garages. The project will be served by an internal private access roadway with surface parking along the roadway.

The owners are proposing 30% of units to be Routt County Work Force restricted, for a total of 12 work force restricted units.

Methodology

Four Points is using the Equivalent Residential Units (EQR) method for determining water demands and wastewater flows, which are based on water use per a standardized development.

“An EQR is generally considered to have a water demand equivalent to a single-family home, which generally requires approximately 280 gallons of water per day. The use of EQRs in assessing water demands is commonly applied to communities with similar influence by visitors, and provides a means for assessing water demands not associated with permanent population.”

The project is designed as 38 apartments. A typical single-family home in Steamboat Springs can be classified as a three-bedroom, two-bathroom home up to 2,500 square feet. The 38 apartments have a total square footage of 31,137 square feet and a total of 46 bathrooms. Based on the proposed development Four Points has estimated 15 equivalent single family homes

Sanitary Sewer Capacity Study

Peaking Factor calculations were performed per the *City and County of Denver Department of Public Works Sanitary Sewer Design Technical Criteria Manual*, where:

$$\text{Peaking Factor} = 2.6 * (\text{Average Flow, CFS})^{-.16}$$

The Village Drive Apartments will be serviced by an existing 8" PVC gravity sewer main to be located along the west property line

The maximum peak flow calculated for the Project is 0.06 CFS. Wastewater impact calculations are located in **Appendix A**. Each building will have its own service line.

$$\rightarrow (0.06 \text{ CFS} / 15 \text{ EQR}) = 0.004 \text{ CFS per Equivalent Residential Unit}$$

The analysis shows that a 4" PVC service pipe with a minimum allowable 2% slope will suffice for each apartment building.

Potable Water Supply Study

Potable water will be provided throughout the development from the existing Mt. Werner water distribution system. The District maintains an 8" water main in Village Drive that will be extended into the project.

The peaking factors for the Maximum Day (2.4 x the Average Day) and the Maximum Hour (2.0 x the Maximum Day).

Four Points assumed a demand of 541 gallons per EQR per day to estimate the Projects total development water usage. An average day flow of 5.6 GPM was calculated for the entire development with a max day flow of 13.5 GPM and a max hour flow of 27.1 GPM.

Fire Flow

Fire Flow Demand is based on NFPA 1, Fire Code. Based on the size of the buildings and Type 1 buildings the fire flow is 1500 gpm for two hours. It should be noted that each building will have sprinklers as required by the Routt County Building Department which can reduce the flows by 75% and duration by one hour.

Please feel free to contact Four Points with any questions, comments, or concerns.

Sincerely,

Walter N. Magill, PE-PLS
Four Points Surveying and Engineering