

# Memorandum

**To:** Dylan Monke  
Planner

**From:** Patrick O'Connell  
Engineering Geologist

**Date:** May 28, 2024

**Re:** Shadow Mountain Bike Park, Case No. 23-102980RZ

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I have reviewed the submitted documents for the subject project. I have the following comments:

1. The site is not within a zoned or unzoned geologic hazard area and reports are not required with the rezoning process.
2. The property is located within the Mountain Ground Water Overlay District. Based the uses (bike park, lodge, maintenance building) on 306 acres, it appears the water requirement will not exceed the 0.28 acre feet per acre per year threshold as described in Section 21 of the LDR. If the water requirement exceeds 0.28 acre feet per acre per year, an Aquifer Test in accordance with Section 21 of the LDR is required with the rezoning application. If the water requirement exceeds 0.10 acre feet per acre per year, an Aquifer Test in accordance with Section 21 of the LDR is required with the SDP application. The estimated water requirement is 0.04 acre feet per acre per year.
3. The applicant has submitted a plan (April 17, 2024) that describes the process to obtain legal rights to the water supply and the number of guests has been updated (1200 max). Adequate legal water rights will be required with the SDP process.
4. The Water Availability Analysis (WAA) has been revised based on water demand requirements provided by the applicant and County staff. The use is unique and a bike park is not listed in multiple references, therefore, County staff utilized 4 gallons per day (gpd) per guest (1200 guests based on revised ODP). The value utilized in Stantec's October 23, 2023 Engineering Study was 4 gpd, however, no source data was provided. I discussed this with the applicant's representative. Based on the values and ODP, the estimated total annual withdrawal is ~4.72 af and a consumptive use of ~0.8 af.
5. Grading within the Jefferson County Floodplain Overlay District (flood prone area) will require a separate Floodplain Development Permit.