

# COLORADO GEOLOGICAL SURVEY

1801 Moly Road  
Golden, Colorado 80401



Karen Berry  
State Geologist

June 28, 2019

Mark Williams  
Durango Community Development  
949 E. 2<sup>nd</sup> Avenue  
Durango, CO 81301

**Location:**  
SW SW Section 9,  
T35N, R9W of the N.M.M.  
37.3074, -107.865

**Subject: North Main Apartments Rockfall Hazard Mitigation**  
**Town of Durango, La Plata County, CO; CGS Unique No. LL-19-0008**

Dear Mr. Williams:

Colorado Geological Survey has reviewed the Rockfall Hazard Study for the Proposed North Main Apartment Project, Durango, Colorado (Trautner Geotech LLC, April 2, 2018) and Proposal for Rockfall Barrier Installation for the North Main Apartment Project (GeoStabilization International [GSI], April 10, 2019).

CGS independently verified Trautner's rockfall modeling using a digital elevation model (DEM) based on high resolution LiDAR data and the Colorado Rockfall Simulation Program. Trautner's modelling and mitigation recommendations are valid. GSI's 2000kJ, 10 ft. high rockfall barrier is consistent with Trautner's recommendations.

However, Trautner modelled 4 ft x 7 ft cylindrical rocks along the south path and 6 ft. spheroidal rocks along the north path as "the most likely worst case scenarios that can be mitigated with reasonable means..." Larger rocks are present on the slope above the proposed apartment building, including "an 18 foot by 7 foot cylindrical rock at Waypoint #3 (location shown in [Trautner's] Figure 4) that is precariously sitting on the slope." **In addition to the rockfall catchment barrier, Trautner recommends (page 9) scaling to stabilize and/or break up the prone rocks that are greater than 6 feet in any dimension.** CGS strongly recommends that the town require the applicant or developer to adhere to this recommendation, in addition to constructing the planned rockfall barrier.

Any rockfall hazard mitigation other than avoidance will require periodic and ongoing inspection, maintenance and repairs to preserve its effectiveness. This includes the proposed rockfall fence, and any rock bolting. Maintenance may include cleaning out accumulated debris and replacing damaged, worn or corroded components.

Thank you for the opportunity to review and comment on this project. If you have questions or require further review, please call me at (303) 384-2643, or e-mail carlson@mines.edu.

Sincerely,

Jill Carlson, C.E.G.  
Engineering Geologist

A handwritten signature in black ink, appearing to read "Jill Carlson".