

# COLORADO GEOLOGICAL SURVEY

1801 Moly Road  
Golden, Colorado 80401



Karen Berry  
State Geologist

May 14, 2021

Daniel Sexton  
Land Use Review Division  
Planning & Community Development  
City of Colorado Springs

**Location:**  
SE Section 7,  
T13S, R66W of the 6<sup>th</sup> P.M.  
38.9274, -104.8163

**Subject: Mark Dabling Cottages Zone Change CPC ZC 21-00029 and Concept Plan CPC CP 21-00030 City of Colorado Springs, El Paso County, CO; CGS Unique No. EP-21-0069-2**

Dear Mr. Sexton:

Colorado Geological Survey has reviewed the Mark Dabling Cottages applicant's response to our March 26, 2021 zone change and concept plan review comments.

**The site is undermined by the Pikeview Mine.** No shafts or other mine openings are known or suspected to be present on the property, and no evidence of ground deformation is visible in high resolution LiDAR-derived imagery. The Pikeview Mine map indicates that most areas beneath the site were "worked out" (all coal, including support pillars removed), but support pillars were left in place beneath the railroad alignment and other areas beneath the site.

CGS agrees with RMG (Geologic Hazard Study, 6550 Mark Dabling Boulevard, Lots 1 and 2, Corporate Centre, Filing No. 3, Colorado Springs, Colorado, RMG Job No. 175320, January 29, 2021) that, due to the depth of mine workings and thickness of intact bedrock above the mine, the subsidence hazard is low. However, the contact between mined areas and areas where support pillars were left in place can be problematic due to delayed collapse of pillars and bridged roof material, and ongoing erosion into voids within any uncollapsed or rubble zone. Therefore, there is a low but non-zero risk of subsidence and ground deformation at the surface as a result of subsurface void collapse and erosion into mine voids and rubble zones. Mine subsidence should therefore be disclosed as a geologic hazard on this site.

**Applicant states "Mine subsidence shall be disclosed as part of final dp per cgs recommendations." This satisfactorily addresses CGS's comment regarding mine subsidence.**

**Dry Creek 100-year flood hazard, erosion setback, and basement feasibility.** Although not shown on the Concept Site Plan or discussed by RMG, a 100-year flood hazard zone is mapped (FEMA FIRM Panel 08041C0512G, effective December 6, 2018) on the property along Dry Creek, a tributary of Monument Creek. A setback of sufficient distance from flood zone limits should be delineated to reduce hazards associated not just with rising floodwaters but also erosion and scour. A channel shear stress analysis is recommended to determine an appropriate erosion setback and to evaluate the need for additional channel armoring/reinforcement. In the absence of a channel shear stress analysis, an erosion setback of 40 feet would be reasonable.

**Applicant states "Floodplain and streamside buffers have been added to the concept plan, the buffer greatly exceeds the 40' recommendations." This satisfactorily addresses CGS's comment regarding an erosion setback.**

RMG observed groundwater at 13 to 15 feet below the ground surface in their three test borings located

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adjacent to Dry Creek (Geotechnical Report, March 31, 2020, included as Appendix A in RMG's 1/29/2021 Geologic Hazard Study). Since it is not known to what level groundwater would rise in the event of a flood on Dry Creek, and to reduce the risk of risk of wet basements and hydrostatic loads on basement walls, CGS recommends either 1) additional water level monitoring to observe groundwater levels when and shortly after there is water in Dry Creek, or 2) basements should not be allowed within about 100 feet of the Dry Creek flood hazard zone.

**Applicant states "Basements are not being proposed." This satisfactorily addresses CGS's comment regarding shallow groundwater.**

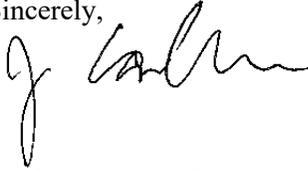
Geologic hazards, potential hazards, and geotechnical constraints that should be identified on the plat, site plans, and development plans include: expansive soil and bedrock, mine subsidence, erosion and seasonal shallow groundwater adjacent to Dry Creek, artificial/uncontrolled fill, and radon.

**Applicant states "These potential hazards shall be included in the final dp notes." This satisfactorily addresses CGS's comment regarding hazards that should be disclosed on the plans.**

**CGS has no outstanding concerns regarding this application.**

Thank you for the continued 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](mailto:carlson@mines.edu).

Sincerely,



Jill Carlson, C.E.G.  
Engineering Geologist