



Requirements for The Colorado Springs Landslide Susceptibility Zone

Presented by:

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Risk Management Engineer

2-10 Home Buyers Warranty

Aurora, CO

Colorado Springs Landslide Symposium

September 15, 2017

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About 2-10 Home Buyers Warranty



10-year insurance backed structural warranties

- Covers qualified damage or defects to load-bearing elements of homes.
- The warranty is purchased by the Builder of the home.
- The Builder is the insured and the Homeowner(s) is the beneficiary.
- 2-10 Home Buyers Warranty has paid out over ***\$270 million*** in claims.

2-10 Home Buyers Warranty



Colorado Claim History

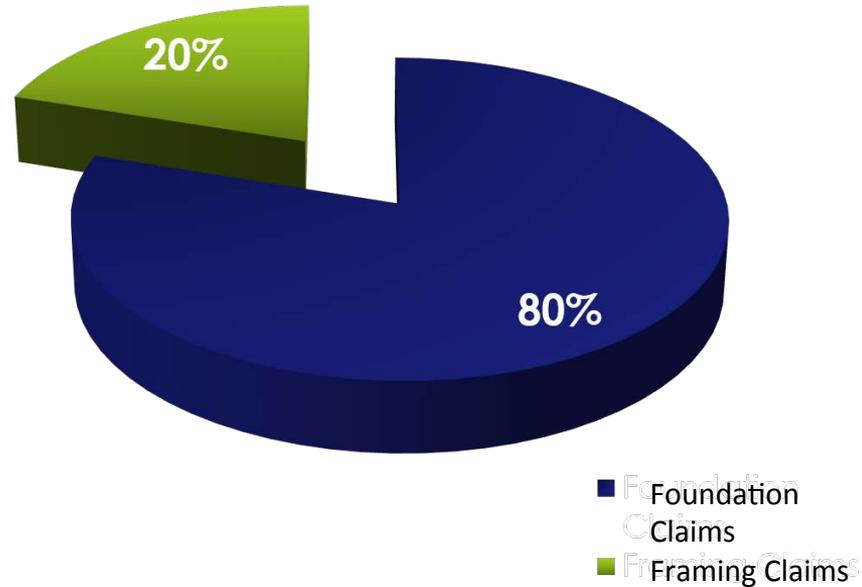
- 58,500 enrollments
- 2,180 claims filed
- \$14.0 (+) million paid out in claims.
- Largest Colorado claim = \$371,214

2-10 Home Buyers Warranty



Claim History

- 80% of claims involve foundations.



2-10 Home Buyers Warranty



Colorado is one of our Special Standards States

Special Requirements for Enrollments:

- **A Geotechnical Investigation & Report (SOILS REPORT)**

- ✓ Explores the subsurface conditions, soil, rock, groundwater.
- ✓ Identifies geologic hazards.
- ✓ Provides site development and foundation recommendations.

Exploration



Sampling



Testing



2-10 Home Buyers Warranty



Other Requirements for Enrollments:

- **Foundation, Frame, and Final inspections**
 - ✓ HBW approved third party inspector.
 - ✓ HBW approved building department.
- Special Standard Requirements have lowered the number of claims.



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Our History with Colorado Landslides



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Colorado Landslide History



4910 Braeburn Way, Colorado Springs



Claim filed in 1995

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Colorado Landslide History



4910 Braeburn Way, Colorado Springs - 1995

- The underlying soils have a low swell potential and a high potential for collapse.
- It is believed that slope stability contributed to the foundation movement.
- The home is located in or very near a landslide zone.
- The foundation stabilization cost exceeded \$200,000.

Colorado Landslide History

Exterior Distress



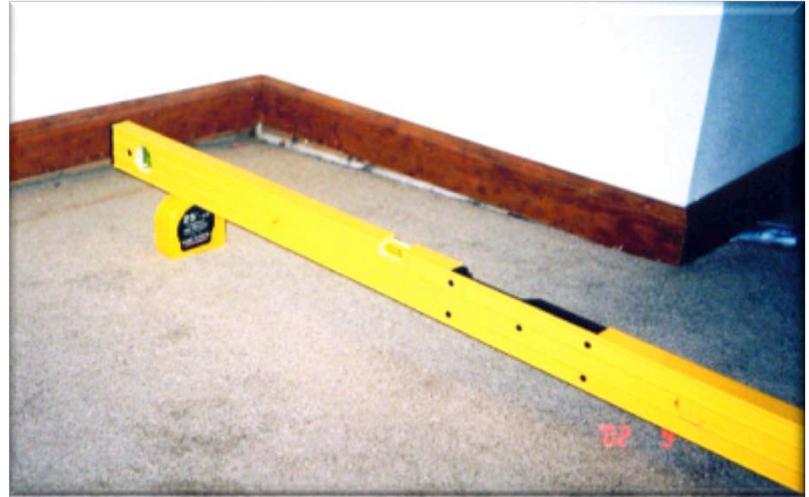
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Colorado Landslide History

Interior Distress



Floor Slopes



Colorado Landslide History



4910 Braeburn Way Recently



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Our History with Colorado Landslides



6th Avenue Estates - 1998

4A ■ ★

ROCKY MOUNTAIN NEWS THU, JUNE 18

Greater Denver

Steve Myers, City Editor — 892-5201 • e-mail — metro@denver-rm.com

Jeffco admits errors in slide area

Administrative process broke down when home construction was allowed in '90, county memo says

By Charley Able

Rocky Mountain News Staff Writer

GOLDEN — Jefferson County admits its administrative process

broke down, allowing too many homes to be built atop a known landslide in the Sixth Avenue West Estates subdivision without required corrective measures and reports.

Five homes are threatened by the landslide, which has extensively damaged three of the pricey custom homes. At least two other residences show early signs of structural damage caused by the slide.

A memo released Wednesday by the county details the measures taken since 1990 to ensure such a breakdown does not recur.

County commissioners in 1990 approved development of the area, including a 12-acre parcel on which development previously had been prohibited because of landslide risk, despite warnings from its staff and state geologists that the area was unstable.

The county set a number of requirements on development of the segment of the subdivision along West Bayaud Drive, West Archer Avenue and West Ellsworth Avenue.

The provisions enacted by commissioners to reduce the risk posed by the unstable north slope of Green Mountain included limiting the number of homes in the former no-build area to 10. Fifteen

homes eventually were built on 12-acre area, and construction of another has been halted.

The provisions also require the developer and builders to submit a number of reports addressing soil instability and other geologic hazards.

Those requirements were met, and a county investi-

See SLIDE

Lone Tree challenges tax plan

City calls stadium board effort to reap fees an 'abuse of power'

By Shelley Gonzales

Rocky Mountain News Staff Writer

A smile and a hug from a protege



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Colorado Landslide History



- The site had been considered a NO-BUILD ZONE because of the LANDSLIDE RISK.
- Then the county over ruled the objections of its staff and state geologists and allowed construction to proceed.

Colorado Landslide History

Two homes affected by
the landslide on W.
Bayaud Drive



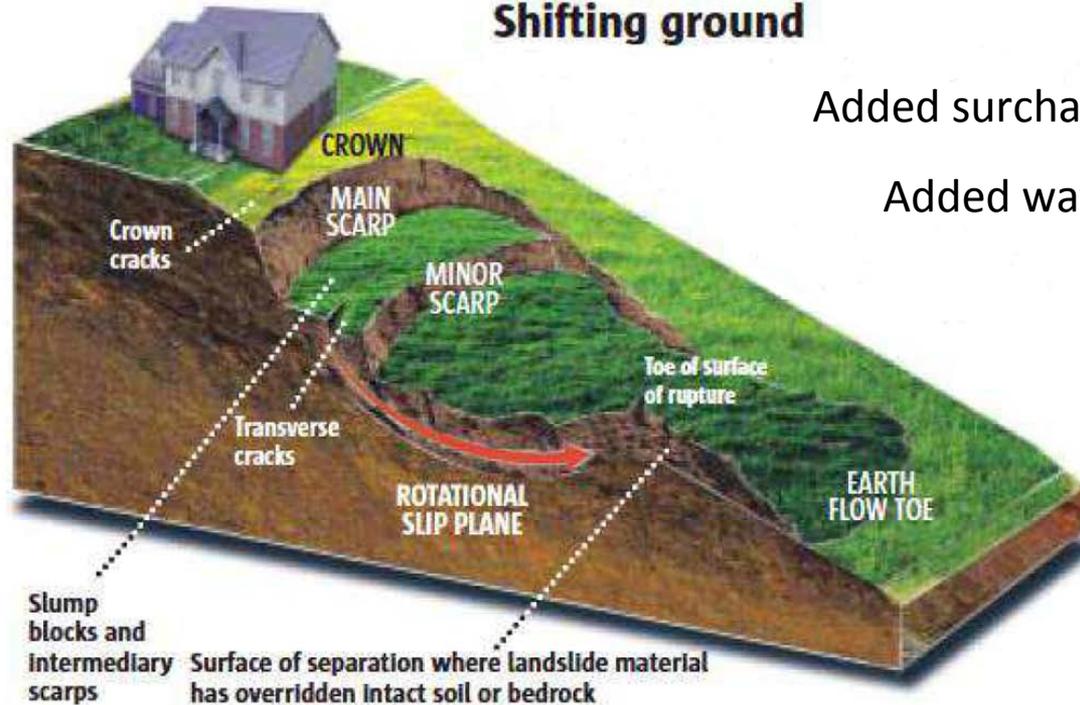
Colorado Landslide History



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Colorado Landslide History

Shifting ground



Source: Colorado Geological Survey

Colorado Landslide History



We accepted claims for two homes below the initial landslide.



16190 W. Ellsworth Ave.



16220 W. Ellsworth Ave.

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Colorado Landslide History

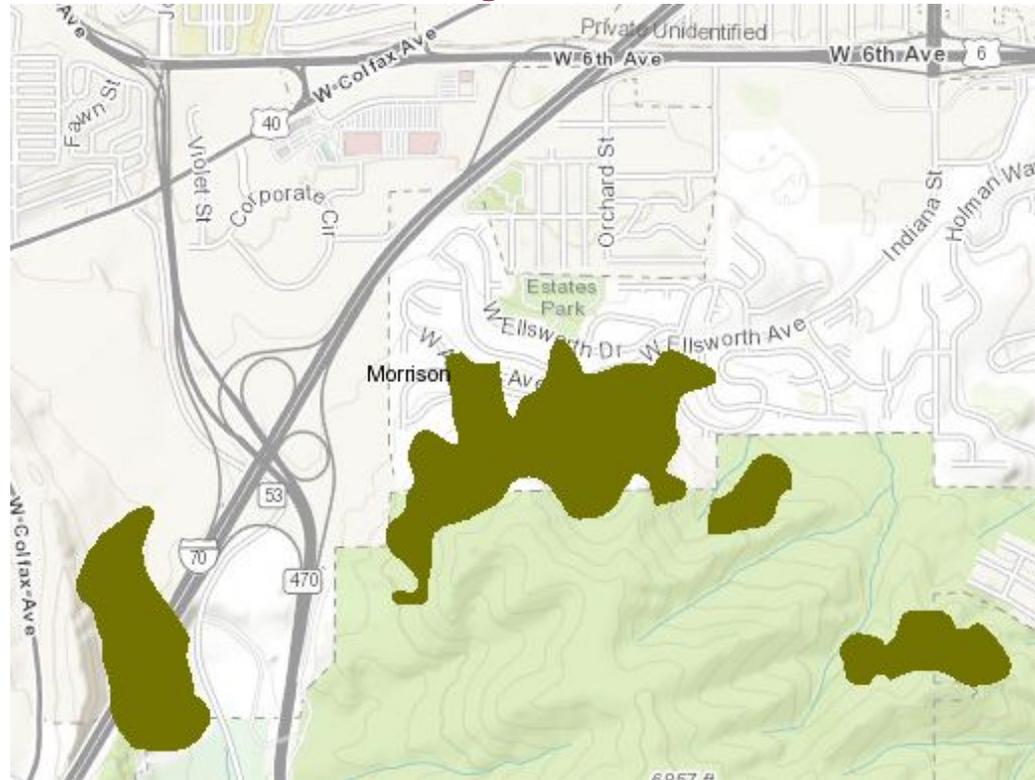
The back of the homes



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Colorado Landslide History

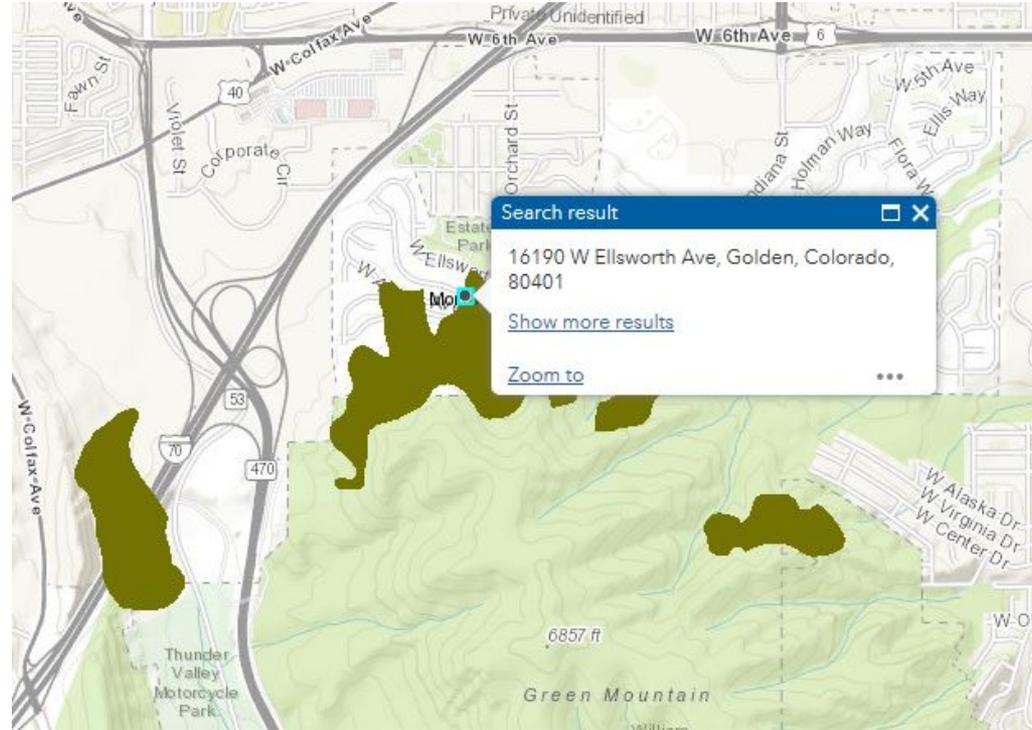
**Colorado Geological
Survey Landslide
Inventory
Interactive Map**



Colorado Landslide History



CGS Landslide Inventory Interactive Map



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Colorado Landslide History

6th Avenue Estates

Mesa View Estates



W. Bayaud Drive

Colorado Landslide History

Mesa View Estates - 2017



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Landslide Zone Requirements



Requirements

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Why Have Requirements?

- Each year in the United States, there is **\$1 to \$2 billion** in economic losses and **25 to 50 deaths** attributed to landslides.

(USGS & USA Today)

- Not only are landslides capable of extensive damage to structures, they are also expensive to stabilize.



Why Have Requirements?

- There are significant slope stability issues in the western portion of Colorado Springs.
- Homes continue to be damaged due to landslides.



Alerting Our Member Builders



Risk Management Advisory Letter

- A letter was sent out to our Member Builders August 1, 2016.
- The letter informed Builders about:
 - The recent landslides that have occurred in the Cheyenne Mountain area.
 - The landslides may be the deep-seated type.



Landslide Susceptibility Zone Requirements

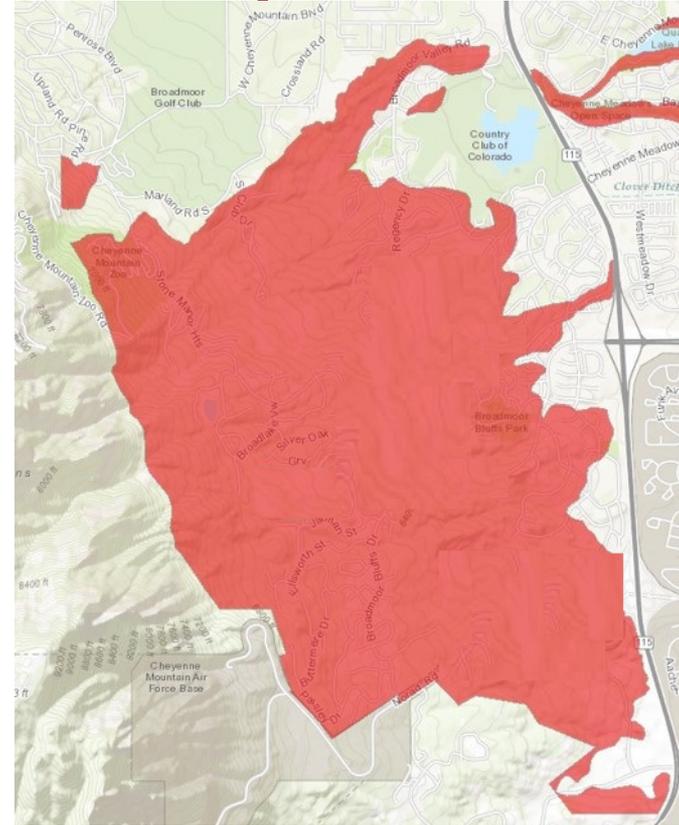


- Failure planes can be well below the depth of foundations.
- Geotechnical investigations on a single lot may not fully reveal the property's risk of a landslide.
- Landslide mitigation procedures may require access to other lots.
- Landslide Zone requirements.

Landslide Susceptibility Zone Requirements



- ✓ The Cheyenne Mountain neighborhoods have been determined to be a “No Enrollment Zone”.

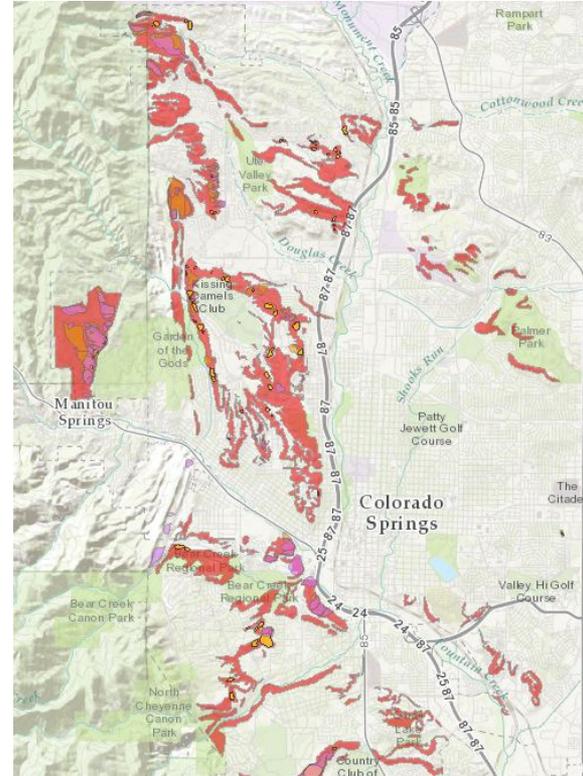


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Landslide Susceptibility Zone Requirements



- Outside of the Cheyenne Mountain neighborhoods:
 - Less likely to have deep-seated landslides.
 - The potential for landslides in these areas can generally be mitigated with:
 - ✓ Proper grading.
 - ✓ Surface and ground water management.



Landslide Susceptibility Zone Requirements

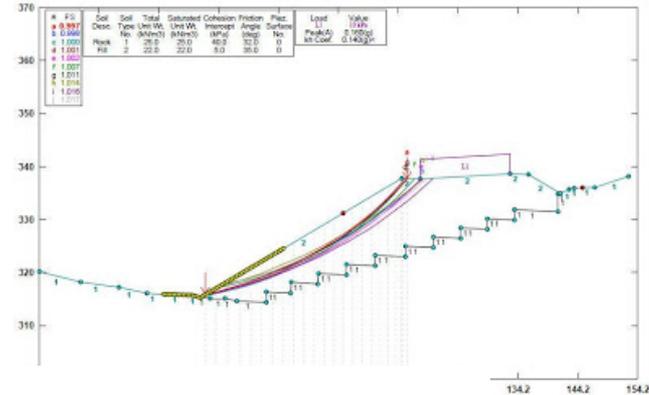


Outside of the Cheyenne Mountain neighborhoods:

- Structures in these areas are eligible for enrollment with the following:

- ✓ A more robust Geotechnical Investigation & Report than typical identifying and addressing any slope stability issue.

- ✓ Submission of a third party review of the Soils Report.



Landslide Susceptibility Zone Requirements



Geologic Hazard Study Report

Edited 8/1/17



COLORADO SPRINGS
OLYMPIC CITY USA

Geologic Hazard Study Report

Applicant: Telephone:
Address: Email:
City/State: Fax:
Zip Code:

The following documents have been included and considered as part of this report (checked off by individual(s) preparing the geologic report):

- Development Plan
- Landscape Plan (if applicable)
- Grading Plan
- Drainage Report (necessary if debris and/or mud flow hazard is present)

ENGINEER'S STATEMENT

I hereby attest that I am qualified to prepare a Geologic Hazard Study in accordance with the provisions of Section 504 of the Geologic Hazards Ordinance of Colorado Springs. I am qualified as:

- A Professional Geologist as defined by CRS 34-1-201(3); or,
- A Professional Engineer as defined by Board Policy Statement 50.2 - "Engineers in Natural Hazard Areas" of the Colorado State Board of Registration for Professional Engineers and Professional Land Surveyors, Board authority as defined by CRS 12-25-107(1).

Submitted by: Date:

This Geologic Hazard Study is filed in accordance with the Zoning Code of Colorado Springs, 2001, as amended.

City Engineer	Date	Planning & Development Manager	Date
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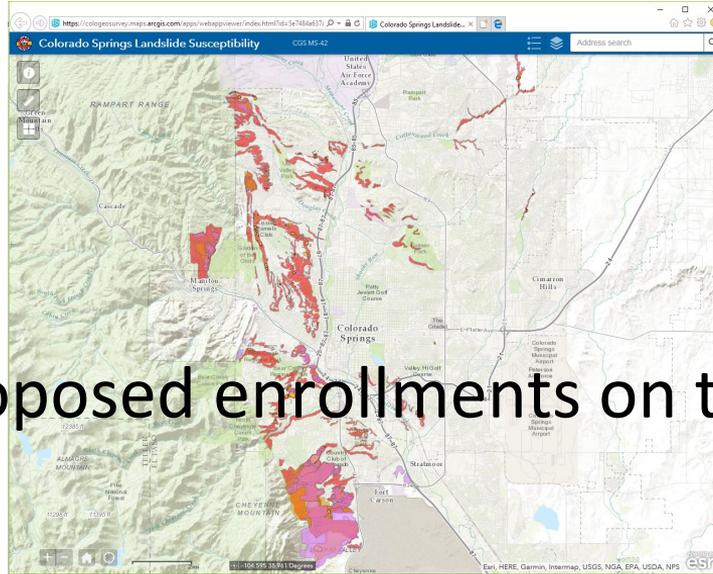
Landslide Susceptibility Zone Map



How do we know when to implement the requirements?

Landslide Susceptibility Zone Map

Colorado Geological Survey's Interactive Map

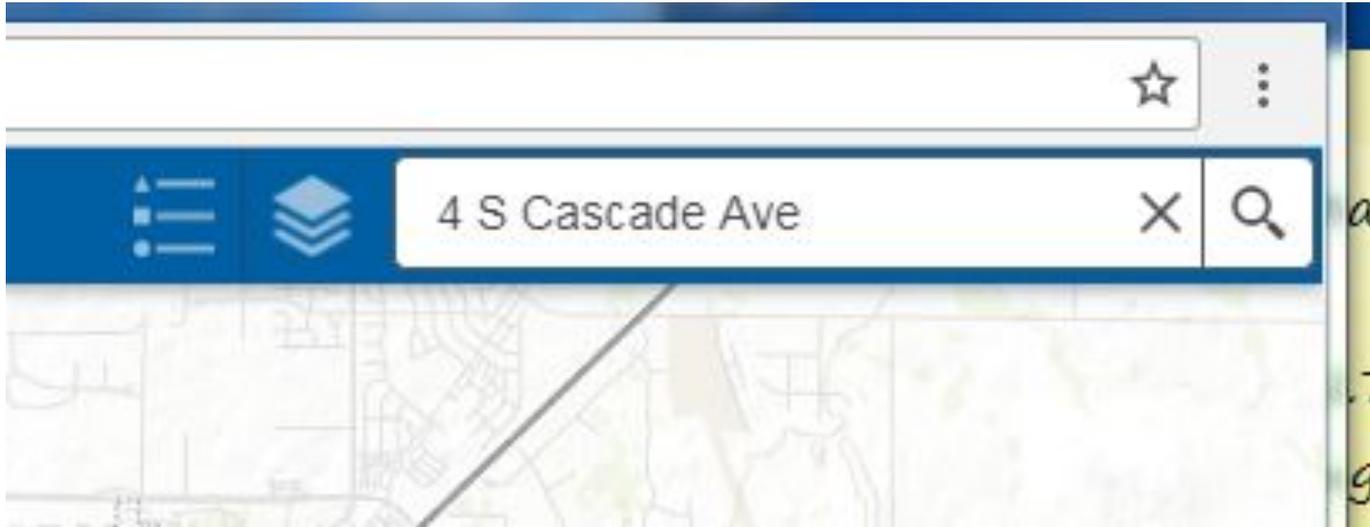


Locate proposed enrollments on the map.

Landslide Susceptibility Zone Map

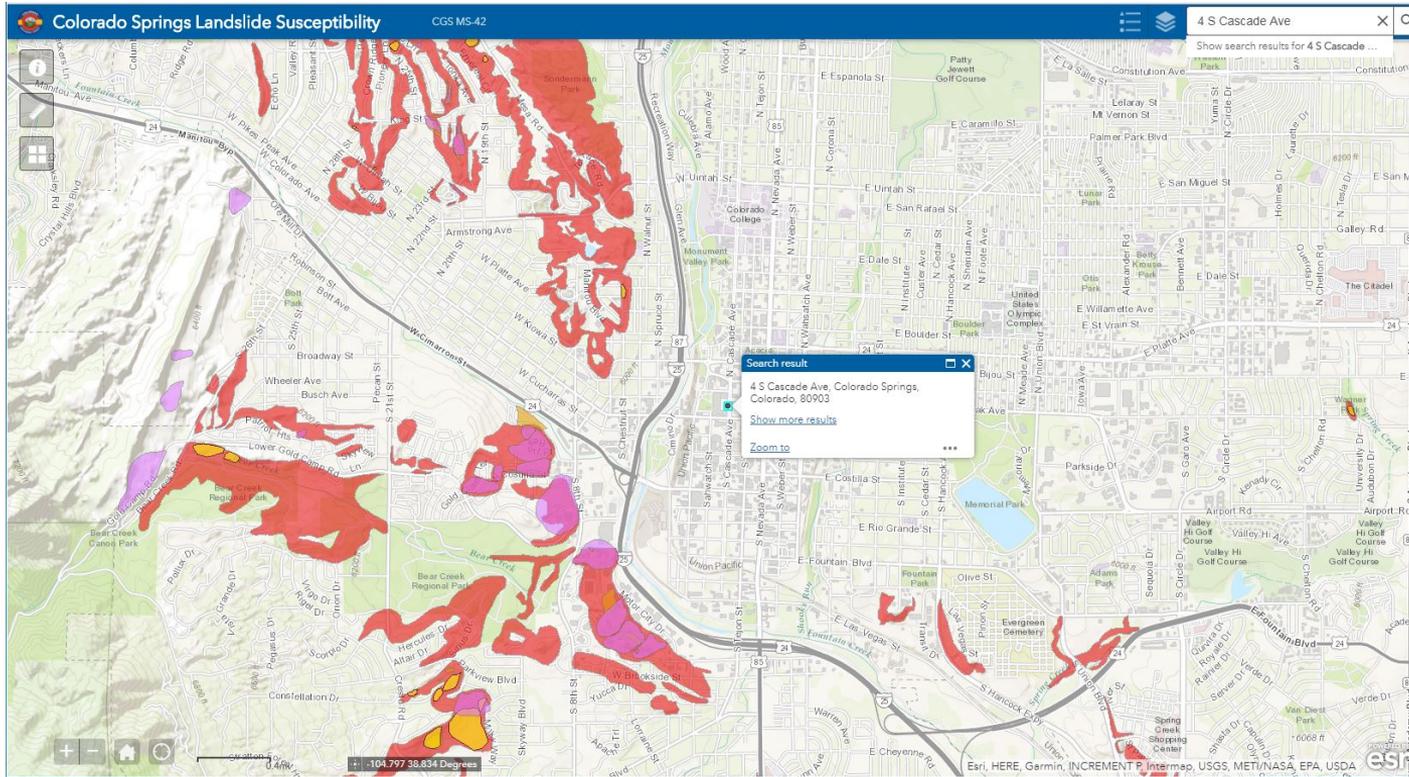


The address is entered in the search box.



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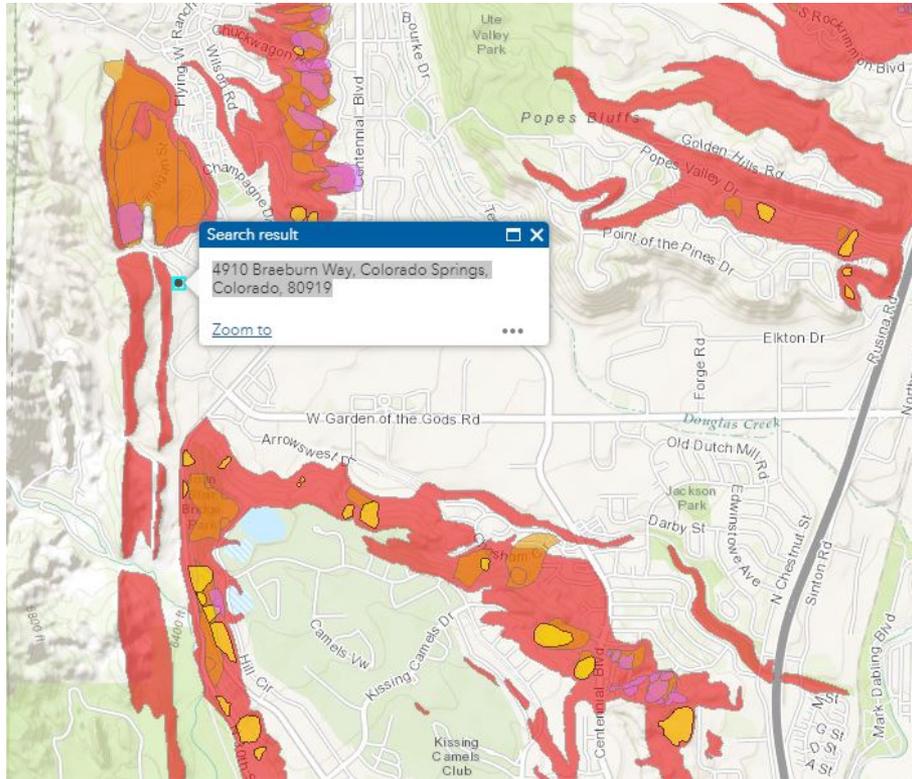
Landslide Susceptibility Zone Map



The Antler Hotel is not in a landslide susceptible area.

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Landslide Susceptibility Zone Map



The Braeburn Way home.



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Thank You!

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