

Boulder Canyon Climbing Access Stabilization Project: Avalon

Overview

The Boulder Climbing Community's (BCC) trail crew completed the 3 phase trail project at the Avalon climbing area in Boulder Canyon, in partnership with the US Forest Service (USFS) Boulder Ranger District. This project was funded by the BCC with help from Colorado Parks and Wildlife (CPW), The American Alpine Club (AAC), The Access Fund, Athletic Brewing, Movement Climbing and Fitness, REI Co-op, and Colorado Mountain Club (CMC). The overarching goal of the Boulder Canyon Climbing Access Stabilization Project is to address long term recreation sustainability on USFS lands.

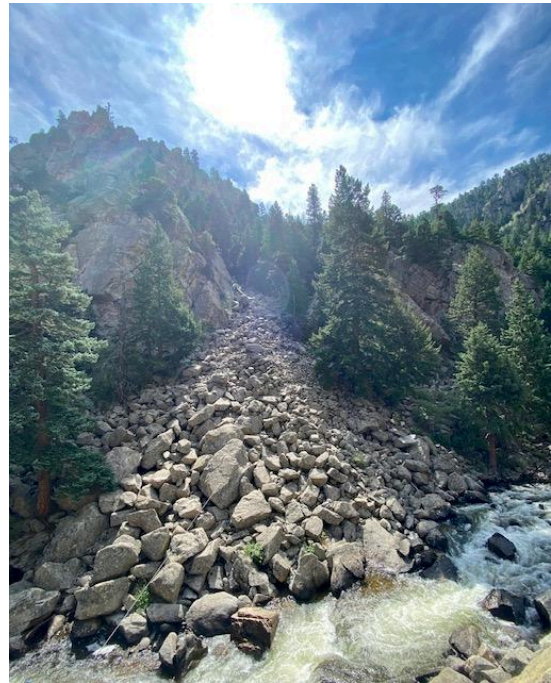


Figure 1: Talus field leading up to Avalon

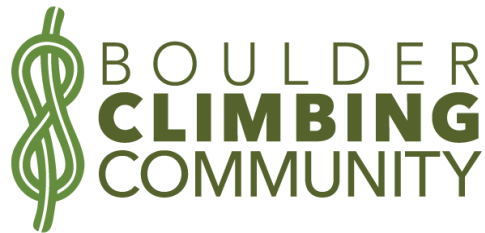
Project Synopsis

Boulder Canyon is located minutes away from downtown Boulder, CO and contains over 120 developed climbing cliffs within a 15 mile stretch of road. Over the years, the Avalon Climbing Area has become one of the most popular climbing destinations in the canyon, with its abundance of quality routes, ranging from 5.5 to 5.12, attracting climbers of all experience levels. It is common to see over 20 cars in the parking area on weekends with climbers accessing the various walls.

The original climbing access trails in the area were not designed for sustainable use, and were rather, the most direct path to the climbing destination. Taking this into consideration and adding the steep grade of the terrain along with the loss rocks located in the lower talus field as seen in Figure 1, much of the access trail and base areas beneath the climbs were in poor condition. There were heavy erosion issues and the trail was unsustainable for current and future use.

Phase I

For the 2021 Phase 1 portion of the Avalon Climbing Area Access Stabilization project, BCC's trail crew worked for four weeks in the Avalon Climbing Area. The goal was to address the erosion issues approaching and at the base of Middle Wall at Avalon. This area hosts the largest concentration of highly rated routes and is often the most trafficked area at the greater



Avalon crag area. The work consisted of creating durable stone structures such as retaining walls, staircases, and belay pads from locally sourced material.

Phase II

In 2022, the BCC continued work for six weeks on the trail towards Middle Wall and beyond, constructing belay pads below two of the most popular routes in the area, which are Strange Science (5.11c) and Free Fall (5.12a). All the material for the various structures was quarried on site and transported to the worksite via human powered carries or a highline rigging system. The new section of trail avoided parts of the old eroding trail and directed it through a more durable area through more solid stone. Retaining structures were also put into place to protect the new trail and erosion from the old trail.



Figure 2: BCC trails staff setting a rock

Phase III

In 2023, the BCC finished the final phase of the Avalon project after eight weeks of work. This last section of trail went from the base of the tirolien traverse up to the previous work done in Phase I and II. All work done in Phase III was constructed in a step and loose talus field as seen in Figure 1. The BCC trail crew cleared a path for the trail through the talus field while stabilizing large hazardous rocks. After stabilizing the rocks in the talus field, the tread for the trail was constructed, often using the large talus rocks as part of the trail. With a clear path and obvious stone steps leading through the talus field, hikers can now easily find their way without scrambling on loose rocks. The BCC also received in kind help from the Rocky Mountain Conservancy (RMC) during this phase in partnership with the USFS. BCC staff helped train and mentor these crew members in rock quarrying and intensive stone work. The BCC had exceptional turn out with volunteer and corporate group trail days.

Project Outcomes and Metrics

By the end of this multi-year project, the BCC installed 183 stone steps and created over 570 linear feet of trail. The BCC was successfully able to mobilize the community with almost half of the labor hours provided from volunteers in the community. See the tables below for full project Metrics (Table 1), project Budget (Table 2), and staff and Labor Hours (Table3).

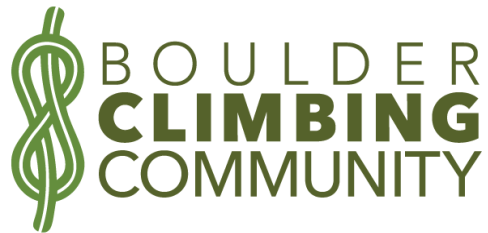


Table 1: Metrics

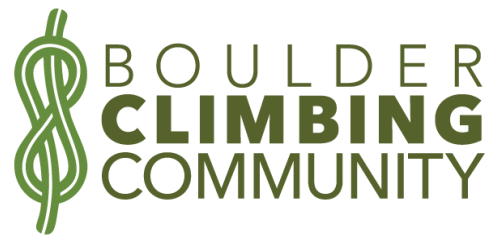
| Project Metrics | Phase 1 | Phase 2 | Phase 3 | Total | Unit |
|-------------------------|----------------|----------------|----------------|--------------|-----------------|
| Trail Improved/created | 135 | 72 | 364 | 571 | Linear ft |
| Stone Steps Installed | 80 | 32 | 71 | 183 | # |
| Retaining Structure | 185 | 344 | 325 | 854 | ft ² |
| Rubble Structure | 200 | 100 | 100 | 400 | ft ² |
| Staging Area/Belay Pad | NA | 37 | NA | 37 | ft ² |
| Rocks Moved via Rigging | 50 | 147 | NA | 197 | # |
| Trail Restored | 150 | NA | 250 | 400 | Linear ft |

Table 2: Budget

| | Phase 1 | | Phase 2 | | Phase 3 | | Total |
|-----------------------------|----------------|-------------|----------------|-------------|----------------|-------------|--------------|
| Labor Type | Hours | Cost | Hours | Cost | Hours | Cost | Cost |
| BCC Trails Program Staff | 592.5 | \$18,793.92 | 950.5 | \$26,125.26 | 601.75 | \$26,087.82 | \$71,007 |
| BCC Administrative Planning | 15 | \$609.60 | 31.5 | \$1,174.32 | 48 | \$1,680 | \$3,463.92 |

Table 3: Labor Hours

| Avalon Project Labor Hours | Phase 1 | Phase 2 | Phase 3 | Total |
|-----------------------------------|----------------|----------------|----------------|--------------|
| Volunteer Hours | 181 | 411 | 1,417 | 2,009 |
| BCC Trail Staff Hours | 592.5 | 950.5 | 601.75 | 2,144.75 |
| Total Combined Hours | 773.5 | 1,361.5 | 2,018.75 | 4,153.75 |



Before and After Photos



Figure 3&4: Stone steps and tread with retaining structure heading up through some more stable talus. (Phase III)



Before and After Photos



Figure 5&6: Tread created through the upper talus field via shifting large rocks to a stable position. (Phase III)



Before and After Photos



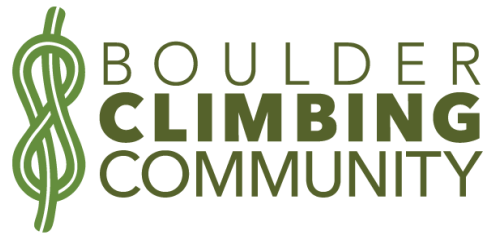
Figure 7 & 8: Stone staircase leaving the top of the talus field heading towards Middle Wall. (Phase I)



Before and After Photos



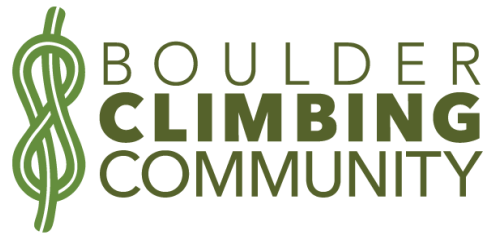
Figure 9 & 10: Staircase with retaining structure heading to Middle wall. (Phase I)



Before and After Photos



Figure 11 & 12: Heavily eroded trail up to the main wall at Avalon. A large retaining wall with the trail running through it was built to stabilize the trail and hillside while diverting the main trail to a more stable surface. (Phase II)



Before and After Photos



Figure 13: Belay Pad built under a popular climbing route. (Phase II)



Figure 14: Belay pad with retaining structure built to protect the base of the popular Climbing Route Strange Science 11c. (Phase II)