

Salt Lake Climbers Alliance Anchor Maintenance Program

Concept Of Operations

Saltlakeclimbers.org

- Blog posts and maintenance summaries at <https://www.saltlakeclimbers.org/news>
- [Fixed Anchors](#) page includes:
 - Statement re: the fundamental hazards and primary assumption of risk in climbing
 - Anchor Observation Google Form
 - Best Practices
 - Training resources for anchor maintenance (replacement & installation)
 - Training resources for work on rope at-height (fall protection)
 - Wasatch Anchor Replacement Initiative (WARI) anchor replacement log

Mission

The Mission of the SLCA is to serve as the unified voice of all climbers in the greater Wasatch region, engaging as an advocate to protect outdoor climbing access and as a steward to maintain sustainable climbing resources in the Wasatch and surrounding regions.

Situation

The SLCA Anchor Maintenance Program assesses the current condition of established anchors, identifies and monitors current and future maintenance needs, and replaces antiquated and unreliable anchors and hardware as necessary, in partnership with land owners and agencies.

Strategy

- Hire or recruit a Coordinator and write an Operations Manual.
- Allocate funding for staff and the program.
- Assemble and train a small, part-time crew of ‘anchor technicians’ with relevant knowledge, experience, abilities, and availability.
- Train technicians in the program’s use of climbing and industrial rope access systems.
- Train the use of the specialized tools and techniques for both anchor removal and installation. Follow the anchor manufacturer’s specific instructions and use Best Practices.
- Collect feedback from the community on route and anchor conditions.
- Secure formal work authorization with owners and/or land managers. Identify and prioritize maintenance needs on both private and public lands.
- Employ technicians (on a part-time basis) to perform annual maintenance and stewardship projects, addressing observed and prioritized needs at designated climbing areas.

Organization and Responsibilities

Executive Director- Julia Geisler

- Executive direction and operations, policy, project funding, MOUs and work authorizations

Anchor Maintenance Coordinator- Jesse Williams

- Coordinates & instructs technician training, manages projects & logistics, administers project purchasing, payroll, and project documentation

Anchor Maintenance Technicians- Alex Lemieux, Eric Salmi, Mike Kasserman

- Perform anchor inspection & maintenance. Assist with project prioritization and logistics. Outreach with active local climbers.

Funding

- Utah Office of Outdoor Recreation grants to support recreation infrastructure
- Utah Recreational Trails Program grants: 'vertical trails'
- Corporate sponsorship - financial and material support
- Private donations and fundraising campaigns- individuals and challenge donors

Authorization: private lands

Memorandum of Understanding with private property owners “to allow and sustainably manage trails, signage, fixed anchor maintenance and recreational access...’

Indemnification Clause

‘ANCHOR REPLACEMENT: LCO shall have the right, but not the duty, to construct, install, operate, maintain, and replace climbing anchors, rappel anchors, and fixed protection including bolts, or authorize third parties to do so, and may utilize all tools or equipment (including motorized equipment) LCO deem reasonably necessary to accomplish these activities. LCO shall use established best practices consistent with national norms that have been established on publicly accessible lands across the United States. Neither Owner nor LCO shall have any duty, liability, obligation, or responsibility for such anchor installations, including, without limitation, to install, construct, test, inspect, maintain, repair, or warn about the same. ‘

Authorization: public lands

Temporary Special Use Permit issued by the Forest Service under the authority of the Federal Lands Recreation Enhancement Act

‘Multi-District authorization for the stewardship initiative to identify and replace aged fixed climbing anchors by professional anchor maintenance technicians employed by the LCO.

Prior to beginning work on specific sites, LCO shall contact the local Ranger District office for final approval to begin work at the planned site(s).’

Liability & Insurance

- A 'primary assumption of risk' is inherent in climbing and reiterated in all public communications.
- Indemnification and 'hold harmless' clauses in MOUs and Special Use Permits
- 'Quality Assurance' processes = training and procedures adhere to manufacturers' instructions, and are documented
- General Commercial Liability policy (covers operations, not the installed anchors)
- Workers' Compensation policy:
 - classification codes= climbing instructor, multi-story window washer, amusement operator

Logistics

- Organized tools, equipment & materials cache at controlled access storage facility. Adhesive inventory is ordered as needed, and is stored separately (for temperature control).
- Coordinator purchases and maintains inventory of tools, equipment and materials for current & proposed projects, and transports everything to/from work site. Coordinator resupplies materials and recharges equipment between work sessions.
- Coordinator runs the morning meeting, end-of-day meeting, and completes and files the daily Work Plans.
- Coordinator updates the anchor maintenance database- both internal and public facing, and completes project summaries with cost analysis.

Prioritization

- Local knowledge and input from Anchor Maintenance Team
- Google Form used to solicit 'Anchor Observations' from community members
- Social commentary on Mountain Project reviewed for relevant input
- Communication with first ascensionists and/or partners, stakeholders, guidebook authors
- Projects are scheduled subject to authorizations/agreements and technician availability
- Work scheduled into separate geographic projects, whenever possible prioritizing weekdays and 'off-seasons' to minimize interference with other users

Scope: 2021 Maintenance

Big Cottonwood Canyon - USFS, non-wilderness

Little Cottonwood Canyon- Gate Butte, Church of Latter-Day Saints

Little Cottonwood Canyon- Hellgate Area, Snowbird & Alta

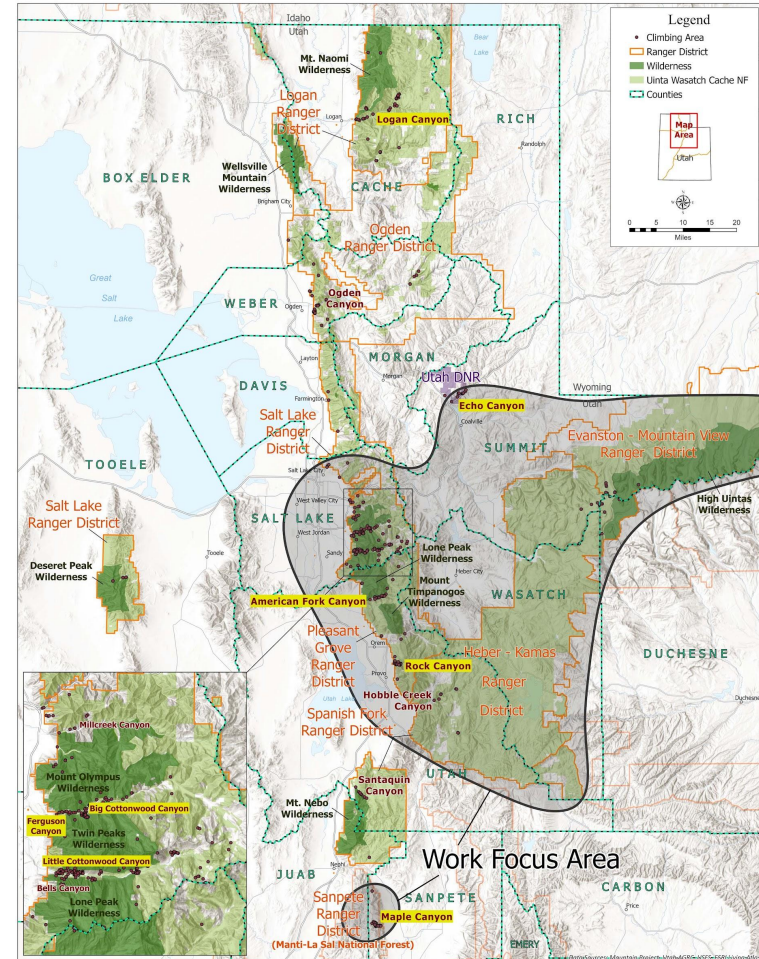
American Fork Canyon - USFS, non-wilderness

Maple Canyon- USFS (Manti-La Sal), non-wilderness

Echo Canyon- Utah DNR, non-wilderness

Uinta Mountains- USFS, non-wilderness

SLCA's Geographic Scope of Work Focus - 2025 Strategic Plan



WORK

Work Plan

- Unique project I.D., date, LOC
- Workers and Responsible Person(s)
- Review the Job Hazard Analysis
- Site survey & forecasted conditions
- Scope of Work for the project / day
- Public communication re: work planned and/or marked hazard areas
- Tools for anchor removal and installation
- PPE and Fall Protection equipment
- Consumable materials and hardware
- Access method
- Work positioning method
- Work sequence and progression
- Rescue plan
- Notes:
 - routes / anchors maintained
 - torque specs for sleeve anchors
 - adhesive lot # and exp.
 - adhesive storage and air temperature = cure time
 - confirm test sample cure
 - current condition and future maintenance notes

Job Hazard Analysis

A written description of the work related hazards, and the controls used to mitigate them.

Demonstrates OSHA compliance to protect workers.

(CFR 1910 = General Industry, CFR 1926 = Construction)

‘Managed Fall Protection Program’ (OSHA compliance)

- Use Sport PPE for access and Industrial ‘Rope Access’ PPE for work positioning
- Technicians trained and assessed in use of climbing, fall protection, work positioning and falling object protection systems (CFR 1910.28, CFR 1926.501, .503)
- Work Safety Plans = ‘a written discussion of the measures that will be taken to reduce or eliminate the fall hazard for workers...’ (29 CFR 1926.502(k)(6))
- PPE issued from selected and managed SLCA inventory
- Technicians are responsible for adhering to training and procedures outlined in the **Fall Protection Handbook**

‘Quality Assured’ Anchor Installation

- Anchors are selected and installed according to manufacturer’s Instructions For Use, and documented in the Work Plan.
- (Mechanical) climbing anchors are not pull tested in-place to avoid damaging placement.
- Quality assurance is based on ‘competency’ of the installer and their adherence to the specified hardware and trained procedures.
- Coordinator is responsible to ensure workers are trained and assessed as ‘Competent’ to remove and install anchors.
- Workers performing anchor replacement or installation must adhere to training and procedures outlined in the **Anchor Maintenance Handbook**.

Administration

- Director secures and executes a budget allowance with proposed scope of operations for the year
- Coordinator proposes projects and tentative schedule for the year
- An employee handbook is used for on-boarding and advising employees
- A contract payroll service manages time-keeping, payment and tax reporting
- A payroll integrated app is used for employee timecard reporting
- Technicians are scheduled on a part-time basis

Documentation

- Daily Work Plans are archived
- Anchor Maintenance Database
 - Route
 - Date
 - Condition
 - Maintenance actions
 - Installations / replacement anchors
 - Notes

Communication

- Best Practices for maintenance and route development posted on the web site
- WARI database of replaced anchors posted on web site
- Coordinator writes post-project summaries
- Anchor Condition Observation Form is promoted on social media and communications

Project Cost Estimates

Estimated costs (by item):

- Labor - hourly rate for technicians
- Bolt anchors - comparable installed cost for adhesive or sleeve anchors
- Hardware - SS screw-links, chain, rings, (hooks)
- Top anchor assemblies - rappel/belay vs. top-rope
- Consumable tools & materials- drill bits, epoxy putty patch, threadlocker
- Administration- included in Coordinator responsibilities
- Tools and fall protection equipment- included in capital costs

Project Analysis

Per project:

- Number of anchors
- Cost of (installed) anchors
- Worker hours
- Labor cost
- SS anchor hardware cost
- Materials / consumables cost
- Total project cost
- Cost per bolt
- Worker hours : bolt ratio

The vision of the Salt Lake Climbers Alliance is that
Wasatch climbers will have access to well-managed and sustainable climbing areas.

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