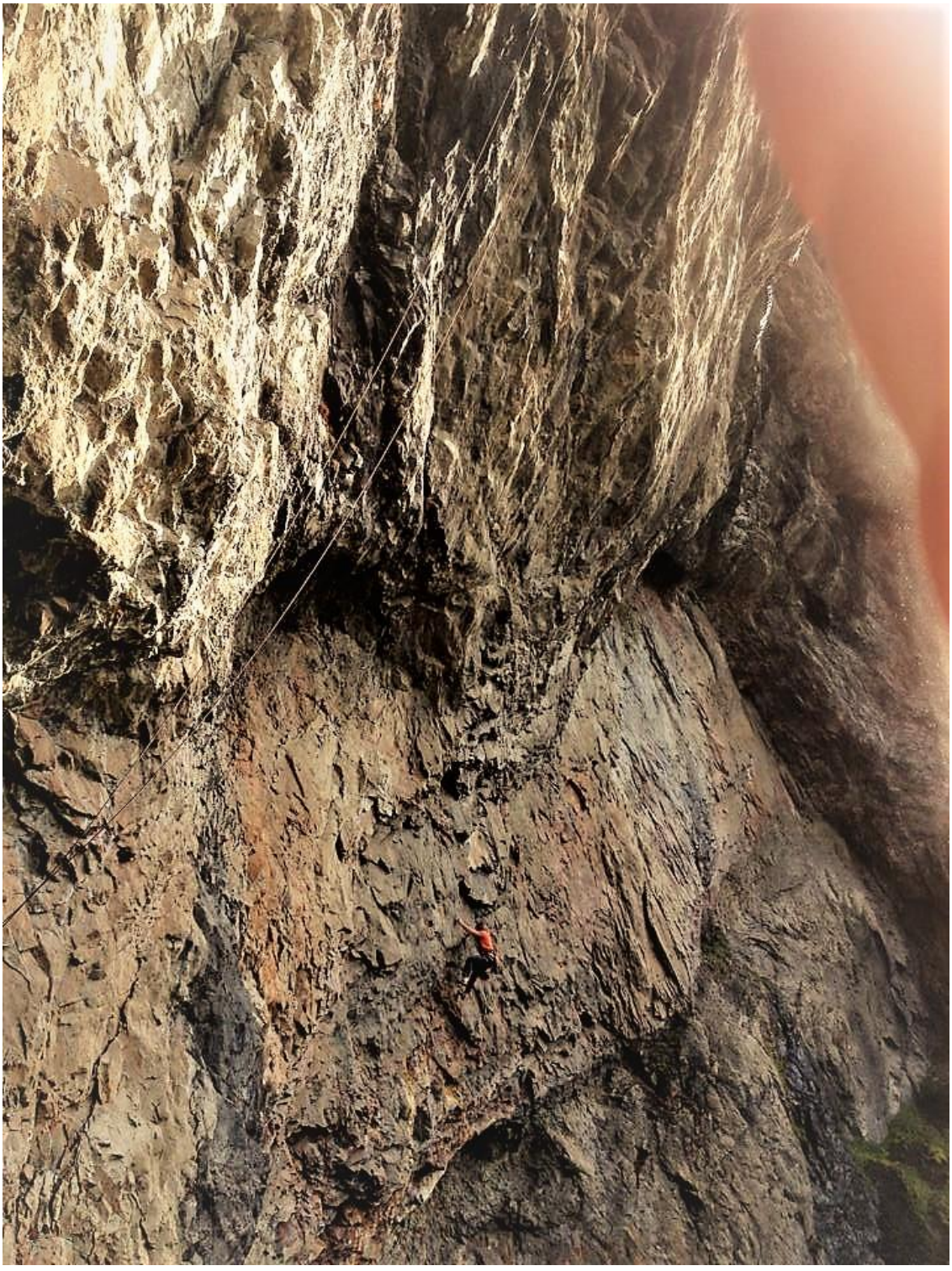
Best Practices Guide

For Rock Climbing Route Development in the Central Okanagan

British Columbia, Canada

May 30, 2017

Contents



1 Introduction

The Central Okanagan offers many exceptional recreational opportunities for hikers, climbers, and other user groups. Since the 1960's, individuals within the climbing

community have independently initiated the development and maintenance of rock climbs in the Regional Parks and surrounding areas for the general public's enjoyment and recreation.

Essentially, rock climbs are manicured vertical trails. These trails are built and maintained pro bono and add considerable recreational value to the Okanagan. The Central Okanagan Climbing Association (COCA) has recognized the importance of climbing and route development within the Central Okanagan and has developed this *Best Practices Guide*. The initiatives of COCA are highly cooperative efforts between climber access groups, climbers, property owners, and Regional Parks which evolved from shared concerns and interests in preserving, maintaining and developing the natural climbing landscape within the Central Okanagan.

The Central Okanagan Climbing Association and many members of the climbing community have become increasingly aware and concerned about occasional conflicts between climbing and/or route development with other interests within the Parks and recreation areas.

Additionally, public safety is a serious concern in the Parks. With the number of recreational users growing each season, the potential for route development to directly cause harm to persons also increases. Learning from other areas, near misses between route developers and hikers below made it clear that guideline need to be put in place to safeguard recreational users and the environment. Short of closing areas to route development or initiating a cumbersome permitting system, a voluntary compliance through the use of these guidelines is the best way of achieving these objectives. Safety is discussed throughout the *Best Practices Guide*, and is the focus of section 5 "Fixed Protection: Materials", 6 "Liability and Due Diligence", 7 "Rock", and 8 "Mitigation Options".

In 2017, COCA in cooperation with climbers from the local community, developed a rock climbing strategy to address the issues arising from the two main objectives concerning rock climbing development:

- To provide a variety of climbing opportunities; and
- To minimize the impact [of climbing] on the environment.

This *Best Practices Guide* contains guidelines and considerations for cleaning, including route development, and intends to balance climber's needs with protecting the environment and public safety.

This *Best Practices Guide* offers tools to assist individuals reach the objective of sustainable route development. Sustainable development is reached when climbers are cleaning and developing new routes without compromising the ability to protect the natural and cultural resources—and promote both public safety and recreational opportunities within the Parks and recreational areas. This *Best Practices Guide* is just that—a document outlining the existing, accepted standards within the climbing

community of the Central Okanagan, **it is not intended to create new standards but simply to explain existing standards of conduct.**

1.1 Process

This *Best Practices Guide* came about through an intensive process initiated by the Central Okanagan Climbing Association. A review of the Squamish Best Practices Guide was performed and used as a template for creating this document. This document was created with input from a collective group of climbers and developers within the Central Okanagan.

All aspects of this guide have been tailored for suitability to the Central Okanagan as agreed by the collective body who provided input to this document. This is a living document and may be updated at any time.

1.2 Role of the Central Okanagan Climbing Association (COCA)

COCA is the local climbers' organization dedicated to preserving access to the climbing areas in and around the Central Okanagan. COCA is dedicated to work with all levels of government and other non-government organizations and societies. COCA is a collective body that represents the interests of rock climbers within the Central Okanagan.

1.3 Role of Parks

Municipal, Regional and Provincial Parks manage associated park land within the Central Okanagan. All development, trail building, and use of the Parks must be in compliance with the Parks rules and regulations. Refer to References for a link to the parks websites for more information. Within this document all municipal, regional, and provincial parks will be referred to as Parks.

1.4 Limitations and Liability

Warning! Rock climbing and route development are hazardous activities with inherent risks of personal injury and death.

Rock climbing and route development safety requires your personal judgment and ability. The safety of a rock climbing venue is never guaranteed. COCA has tried to ensure the information in this document is accurate. However, this information must not be relied upon in any way, as any form of guarantee for your personal safety.

The core principles behind this document aim to:

- safeguard the security of persons;
- preserve the natural ecosystem;

- ensure climber and hiker access;
- promote route development; and
- protect cultural assets.

Route developers having read and abided by this document are not relieved, protected, or indemnified from their personal responsibility and liability for any harm or loss caused as a result of their route development. COCA is not responsible for the actions, safety, or well-being of any individual who developer, pedestrian, or anyone who uses the climbing areas.

1.5 Scope of Best Practices

The jurisdiction of these best practices is limited to the Central Okanagan area. The scope of the guidelines is primarily concerned with issues of security of the persons within, and the ecological preservation of, the Parks and recreational areas. Other considerations, such as how to spot a route worth developing, are beyond the scope of this document. This document is not a “how to” guide to route development. It is not intended to replace climbing courses, hands on experience, and other applicable skills and knowledge.

1.6 Applicability and Enforcement of Best Practices

COCA, developers, and climbers are entrusted with the preservation and care of the park resources. As their legal mandate, Parks will not allow the continuance of activities that are contrary to relevant acts, regulations or approved management plans. If route development is occurring in an unacceptable manner as defined and interpreted through legal, regulatory, and management framework, Parks has no choice but to stop/correct the activity—it is mandated to do so.

Enforcement is one response in an array of tools that the Ministry will use to achieve its objectives or compliance; this array includes education, advisories, warnings tickets, and formal charges.

If route development is carried out in a manner that lies within the parameters of the Parks’ legal, regulatory and management constraints then the route developer would not draw any enforcement attention to him or herself. This type of sustainable route development is a specific objective that Parks and its stakeholders want to achieve.

Parks aspires to achieve “shared stewardship”. Shared stewardship is the belief that environmental sustainability depends on the collective knowledge, commitment, and actions of individuals, stakeholders, and government.

Total disregard for the *Park Act* and other applicable acts, regulations, and management directives, or acts of gross negligence could result in enforcement actions.

Continued negligence within Park land will force Parks to manage their liability and reduce risks of harm or loss by imposing heavy regulations, such as instituting a permitting process or even placing a moratorium on route development activities.

The Central Okanagan Climbing Association as a representative of the climbing community within the Central Okanagan, hope through voluntary compliance, to avoid enforcement actions.

2 Considerations for New Route Development

2.1 General

Routes should be planned out before any physical effort is put into the construction of the proposed route. Consider the following before beginning route development:

- Consider whether the route development compromises the Parks mandate to maintain the ecological and cultural values of the park. Become aware RDCO and BC Parks' guidelines regarding vegetation removal and wildlife awareness. See section 3 “Ecological and Cultural Considerations”. Keep in mind that if a new or re-cleaned route doesn't become a resource to the climbing community, the killing of vegetation was for nothing. If uncertain contact COCA for more information.
- Consider how the new route will contribute to the future growth of climbing in the area. Many developed routes collect sand and debris if they do not see climbing traffic, will your route stay clean naturally? Is it likely to help alleviate pressure on other popular routes? Is the route in an area that is already a destination? If not, even quality routes can lack much traffic if they are lone routes away from any destination. A basic amount of route density seems to bring traffic.
- Consider whether the route development process will irrevocably harm or impact the character of an already established and valued route. See section 3.3 “Existing Routes”.
- Consider the impact on other recreational users within the park, such as hikers on established trails. See section 3.4 “Impact on Recreational Opportunities within the Park”.

- If the route will involve fixed protection, consider the best practices on bolts, anchors, and other forms of fixed protection in section 5 “Fixed Protection: Materials”.
- Consider that route cleaning poses risks for both the route developer and for any hikers and climbers below. Anyone performing route development is completely responsible for his/her actions, regardless of the risk mitigation they may have used. See section 6. “Liability and Due Diligence”. Can the hazards posed by cleaning a proposed new route be safely mitigated? See section 8 “Mitigation Options”.

The above questions and considerations are described in more detail in the sections following.

Route developers should consider altering or abandoning their project if, after careful consideration, they do not believe their route will satisfy these considerations.

2.2 Future Growth of Climbing in the Central Okanagan

In recent years, many new areas have been developed in the Central Okanagan. As the number of climbers and developers continues to grow so does the responsibility to preserve and ethically develop the landscape. There have been very few issues in the past with development of climbing areas in the Central Okanagan, we would like to see it remain that way. As areas which are more challenging to develop become popular and the number of users increases, it more important than ever before for the climbers and developers to work together, collectively. Failure to cooperate and develop routes for the benefit of the community is likely to lead to permanent closures and lost access for everyone.

3 Ecological and Cultural Considerations

Route developers should carefully consider the potential for ecological and cultural damage in the process of route development. Furthermore, route developers should minimize their impact on other user groups, such as hikers and bikers.

3.1 Wildlife

3.1.1 Best Practices

Route developers can expect closures in areas where Falcons may reside around the end of March to early-mid July. No route development will be allowed once the closures take effect. Nor will the route, once complete, be climbable during closures. This may be a point for developers to consider before they start. Falcons and their nest sites are

protected under the *BC Wildlife Act*. Disturbance of these nesting sites can lead to charges being laid.

3.1.2 Background on Falcons

The reason for climbing closures is to provide the best opportunity for nesting falcons to be successful breeding and help them to increase their population numbers to a sustainable level.
The Committee on the Status of Endangered Wildlife in Canada designates falcons as Special Concern. The Peregrine Falcon at one time was designated as endangered due to low population numbers caused by environmental contamination and human activity. During nesting activity falcons are especially susceptible to human activity. Disturbance at this time can cause the failure of the falcon's breeding season, thus slowing the recovery of the species.

There are three key times in the nesting season when the falcons are most susceptible:

1. When a pair of falcons has courted/mated and is looking for a nesting site. If there is human activity at their chosen nesting site this will cause them to leave and perhaps not nest.

2. When the falcons have laid eggs and then there is human activity. This may cause them to abandon the nest causing mortality to the unhatched eggs.

3. When the falcon eggs have hatched and the young are almost ready to fly (fledge). Fledging is typically one of the most sensitive periods for any nesting bird.

Initially, falcon chicks are most likely to hide when they are disturbed at the nest because they have very little ability to escape. As they get older and approach the time when they take their first flight, escape becomes a more feasible option for them should they be disturbed at the nest. However, young that are close to fledging will often attempt to fly away from the nest before they are capable of flight. Such 'forced early fledging' often leads to death or serious injury of the young due to crashes at the end of the attempted flight, or due to predation or exposure on the ground, or possibly due to starvation if the parents are unable to locate the fledgling or unable to reach it.

Through the cooperative falcon-monitoring program, BC Parks staff collects relevant data to help determine the occurrence of these various stages of nesting and set appropriate closure windows.

You may report sightings to BC Parks at: (604) 898-3678, or by email to: Katy.Chambers@gov.bc.ca.

3.2 Vegetation Removal

3.2.1 General

Vegetation within park or crown land is protected by the *Park Act*. Further direction on how vegetation may be used within a park is found within the Parks' individual management plans and guidelines. See section 10 "References" for a list of management plans.

Route development usually involves removing organic material, including, but not limited to, moss, lichen, soil, bushes, and trees. Vegetation removal tends to be most needed on moderate, lower angle routes. These new routes serve an important purpose—to alleviate pressure on existing, popular moderate climbs. However, there are other factors to consider with larger scale vegetation removal—exposing loose rock; creating an aesthetic liability; stirring up controversy within the climbing community—many of these factors can lead to disapproval from the general public.

Removal / dispersal of debris from the base of a recently cleaned route needs to be considered on a case-by-case basis, as many factors impact what can and cannot be done with the debris. Park staff should be consulted on what can be done with potential debris, such as scattering and / or removal.

3.3 Best Practices

Route developers are encouraged to think carefully about the level of vegetation removal. On the one hand, some tree removal will be required to make the climb safe and enjoyable. On the other hand, avoid over cleaning where many trees are pulled out, roots and all, exposing loose rock. When in doubt, consult with more experienced route developers on finding the balance between *enough* and *too much* before undertaking large-scale vegetation removal projects.

If endangered species are discovered in the Parks, BC Parks will implement restrictions on route development. BC Parks has a duty to ensure that no rare or endangered plant species are present or getting destroyed through route development/cleaning.

As a general rule, any living tree`s should not be cut down. In the event a tree is near a rock face, route development should be avoided within close proximity to the tree. Tree roots should avoid being cut out, any damage to a tree or its roots is not an acceptable practice.

Under no circumstance should chemicals ever be used to kill vegetation or for cleaning of rock. Bleach, roundup, pesticides, herbicides, and cleaning products should never be used.

Any damage to a trees bark or driving nails into a living tree is not acceptable.

As a guiding principle, the least amount of material should be removed while still ensuring that a climb is safe, aesthetic, and offers an appropriate climbing experience.

3.3.1 Minimum Impact Practices:

1. **Tread lightly** - Hike on trails, rocks, and in washes; avoid destroying vegetation and disrupting soil. Camp in designated sites.
2. **Be Clean -** Pick up and pack out any trash you see. Properly dispose of any human waste.
3. **Conserve Water Sources** - No unnatural obstructions of watersheds.
4. **Give Wildlife Space -** When encountering wild animals, give them space and be quiet. Keep your pets under control.
5. **Respect Historic Sites -** Do not touch Native American rock art or collect artifacts.
6. **Conserve Vegetation** - Don't cut down trees or disturb roots. Preserve the natural ecology.

Rock Climbing inevitably causes physical and visual impact. Please do your absolute best to minimize your effect on the area by following these guidelines and using your own discretion.

Finally, **educate others!**

To ensure that negative impacts (disturbance) on environmentally sensitive areas are minimized by:

- Protecting, restoring, and enhancing environmentally sensitive areas to a functioning ecosystem;
- Protecting drinking water sources against possible contamination from land use and development activities;
- Managing the introduction and spread of invasive species;
- Minimizing soil disturbance;
- Protecting the hydrological functions of environmentally sensitive areas;
- Protecting biological diversity, wildlife and important wildlife habitats, features and functions.

3.3.2 WATER

- Preserve natural watercourses and manage as open streams.
- Prohibit unnatural obstructions and impediments to the flow of a watercourse, ditch, drain or sewer.
- Retain wildlife trees (including fallen trees and snags, trees with cavities), leaf litter, fallen debris and natural grasslands in a manner that balances FireSmart principles with ecosystem sensitivity.
- Avoid disturbance to sites where rare plants are growing and where rare natural plant communities occur
- Conserve trees and protect their root systems from disturbance.

Riparian Management Areas (RMA) lie within 15 meters of all creek banks. RMA require that all development meets or beats the requirements of the provincial Riparian Areas Protection Act.

What is a Riparian Zone

Riparian Areas Protection Act

4 Development Practices

4.1 Trails

Existing trails should be used at all times, installation of new trails is not permitted with prior approval from Parks. If a new trail is built, old trails leading to the same destination must be rehabilitated to a state equivalent to neighboring soil.

When building, repairing, or improving trails, take into consideration all user groups of the trail. Many trails are shared by mountain biker, hikers, and climbers alike.

Trails should be built with quality, safety, and longevity in mind. All trails should be built to withstand many years of use by all intended user groups. Trails should be built so to avoid natural water drainages. Trails should be built with a minimal impact mindset, choose the path of least resistance and least destruction to the natural landscape.

4.2 Existing Routes

The character of existing routes should be maintained after a new route is introduced.

4.2.1 Dirt and Debris

As the number of climbs in the Central Okanagan increases, the proximity of route development projects to existing routes will generally increase. In developing a route, removed debris can fall onto existing routes, leaving them dirty. Route developers should (a) avoid affecting existing routes at times of the year when climbers are likely to want to climb them, and (b) re-clean these affected routes after they are finished cleaning their route him or herself.

When cleaning of an existing route is required, brushes and leaf blowers should be the only tools used. Aggressive cleaning of existing routes which requires the use of hammers or pry bars is not acceptable.

4.2.2 Damage to Holds and Fixed Protection

Avoid damaging existing holds on nearby routes from rockfall during cleaning. Once cleaning is finished, all permanent anchors on affected existing routes should be carefully inspected for possible damage. If damage has occurred, the route developer should contact the first ascensionist (if possible) and offer to pay for and repair the damage. If

the first ascensionist is not available, the new route developer should restore damaged permanent anchors.

If you believe a block on an existing route it not safe, remove the bottom two hangers on the route and contact the original route developer or COCA if unable to reach the developer.

Gluing of rocks and holds is an unacceptable practice and should be avoided. Lots of the rock in the Central Okanagan is inherently loose. It is common to remove layers of rock before finding solid, safe rock.

Manufacturing artificial hold in an unacceptable practice. Using a drill to create holds or hammering and chiseling of rock to create, modify, or alter holds should never be done.

Artificial holds should never be installed in any outdoor climbing area, no exceptions.

4.3 Fixed Ropes

Ropes should be brought down in spring unless route is being actively developed. Ropes should be brought down if it has been up for more than two years. Developers should limit ropes on a wall, ideally 1 rope at a time, 1 route at a time. All ropes should be tied up and out of the way to prevent general public from climbing and playing on the ropes. Ropes should only be installed if active developing is taking place, hanging and abandoning ropes is an unacceptable practice.

4.4 Impact on Recreational Opportunities within the Park

Route developers must minimize impact on other park users' recreational experience and safety. Because other recreational users may not understand route cleaning practices, avoid cleaning in high visibility areas during times when many users may be present.

For this reason, trail closures should take place at times when there are few park users. At the end of cleaning, ensure that all debris which has landed on hiking/access trails is cleared away and visual aesthetics are maintained. For other impacts of route development, such as hazards, see section 8 “Mitigation Options”.

4.5 Public Awareness

Route developers and climbers attract a lot of attention when climbing and developing routes. It is incredibly important that all developers and climbers act in a professional and courteous manner at all times. The actions of every individual create a public image for the entire climbing community. If you don’t have anything nice to say, don’t say anything at all. Negative stereotypes can jeopardize the entire climbing community.

4.5.1 Public/Social Media

No video`s or photos of route cleaning or rock fall should ever be posted on social media or other public networks. If you want to document events of cleaning, keep a personal record only.

The reason for this is to prevent residents unfamiliar with climbing and development practices from making inaccurate assumptions and conclusions. Some people may see route development as a rebellious activity, it`s best to avoid any possible confrontation.

4.6 Route Grading

New routes should be initially graded by the first ascensionist but should remain open to opinion. All routes should be graded with the "Strike Zone Rule"

Strike Zone Rule – All routes within an area should be graded consistently. This means routes of the same difficulty rating should be closely comparable. Routes at a given crag with a given difficulty may perceive to be a different grade than similarly graded routes at a different crag. It is important that similarly graded routes within the same crag be consistent.

Example: A 5.10A at Cedar Park may not be directly comparable to a 10a at Boucherie or KLO; however, it is important that all 5.10A within Cedar Park are consistently graded.

4.7 Signs

Permanent signs displaying the name and/or grade of a route should not be installed. Developers may use chalk or charcoal only to write the name and/or grade of a route at its base.

One sign shall be permitted at a given crag or area to indicate the name of that area only. All signs should be manufactured of natural materials and should not be permanently installed. Acceptable methods include rocks or wood with writing. These signs should be set at the base of a cliff or on a ledge, they should never be fixed to any living vegetation.

If you believe a sign, other than what is described above, should be installed in an area, COCA should be notified of your intentions and method. Only upon acceptance from COCA shall it be permitted to install the sign.

5 Bouldering

Bouldering in the Central Okanagan is rapidly expanding. The main concerns regarding bouldering is the "spider webbing of the trail system" and excessive vegetation removal. See section 3.2 "Vegetation Removal" for details about vegetation removal.

5.1 Two Approaches to Development

Developing bouldering problems and sectors can be divided into two schools of thought.

The first is a more permanent approach where the problems are completely cleaned of all moss and loose features, and permanent well-delineated trails are developed to these new problems/sectors. The advantage to this approach is it generally encourages more climbing traffic. The disadvantage is at a higher environmental impact.

The other less permanent approach involves cleaning the minimum amount to allow the passage of a climber and leaving the area with as minimal impact as possible. Many problems developed in this manner become dirty in time. As a result, these problems are often claimed as first ascents, even though they have, indeed, been climbed before.

5.2 Planning

When developing a new problem or sector, here are some things to consider:

- What amount of use will this problem/sector receive? As a general rule, high quality problems in remote or minimally developed areas generally see much less traffic than medium (or even low) quality problems in highly developed, popular areas. This can be a guide to how much cleaning/trail building is required.
- What is a sensible trail layout? The goal is to have a clear, well-delineated trail system with the minimum amount of side trails. As a general rule, climbers take shortcuts. Trails that lead more directly to the problems or areas are more likely to be adhered to, rather than circuitous trails which might seem more aesthetic or environmentally friendly.

5.3 Cleaning

Artificial manufacturing (e.g., chipping of holds) and artificially reinforcing (e.g., gluing) of holds is strongly discouraged. The use of bleach or any other chemicals is not permitted as these materials are damaging to the Parks natural resources and ecology. Furthermore, the use of chemicals, as an aid to cleaning routes, is not accepted within the Okanagan climbing community.

Please contact the Okanagan Bouldering Society for more information on bouldering and areas of development.

6 Fixed Protection: Materials

6.1 General

Fixed protection is defined as hardware that is deliberately left in place. Removing fixed protection can damage or otherwise permanently alter the rock. It should not be treated lightly. This applies to equipping new routes or altering existing ones. Careful consideration and thoughtful contemplation of your actions is warranted whenever considering placing fixed protection. When in doubt, seek opinions of other climbers including seasoned route developers before you take action. Keep in mind, opinion on these matters vary widely and individuals who disagree with what you have done may take action and remove your work.

RDCO and COCA do not monitor or regulate the materials or placement of fixed anchors at this time. This is not the case in many federal parks in the USA where regulation on the placement of permanent anchors varies from requiring official approval to an outright ban.

The climbing community in the Okanagan does recognize and uphold certain general standards and best practices concerning the type of fixed protection used, which are discussed below.

6.2 Materials

This section address issues related to the type and quality of hardware used.

6.2.1 Slings/Webbing

Slings and webbing degrade quickly in an outdoor climate; this may compromise the strength of the material itself. Moreover, old worn slings are unsightly and considered by many as litter. Where slings accumulate, a permanent rappel anchor should be considered as a more appropriate solution. Nylon slings should not be left for any permanent installation.

6.2.2 Pitons

Although popular as anchors in other areas, pitons tend to degrade rapidly. Pitons are not ideal as fixed anchors and should be avoided.

6.2.3 Bolts and Hangers

All fixed protection should be made of quality stainless steel. The recommended best practice is that bolts be a minimum of ⅜ inches (10 mm) diameter and 3inches (76 mm) long, made of stainless steel. Hangers should also be stainless steel and designed and certified by the manufacturer for climbing with a minimum breaking strength of 22 kN (~5000 lbs). Quality brand name bolts should be used, such as Hilti or Fixe.

Stainless steel and non-stainless-steel components should never be used together.

Contamination of the stainless steel with non-stainless steel can lead to rusting of the stainless-steel components, defeating the purpose of using stainless steel in the first place.

Never mix stainless with non-stainless hardware.

Glue-in bolts, more commonly used in areas with softer, porous rock are not recommended for granite or gneiss. The adhesive used to secure this type of bolt to the rock works because it penetrates into the rock. Granite is much less porous than softer rock such as sandstone. Proper installation of glue-in bolts require strict adherence to the manufacturer's specifications. Once installed, it is very difficult for others to determine if the correct adhesive was used and the proper installation procedures were followed. Generally speaking, the gneiss found in the Okanagan area provides an ideal medium for commercially available mechanical wedge bolts.

Glue-in bolts should be used in the conglomerate rock around Mt. Boucherie. Only persons with experience using glue-ins should use them.

Washers should never be installed behind the hanger so that it is between the hanger and the rock. This can increase the stress on the bolt and should never be done.

6.2.4 Belay/Rappel Anchors

The generally accepted minimum standard for a fixed belay anchor is a 2-bolt configuration. Rock competency is a key factor in determining distance between bolts. The recommended minimum spacing between bolts in the competent granite found in most BC Parks is 9 inches or 23 cm.

One recommended configuration for rappel stations is two independent anchors linked to a load sharing focal point through which ropes can be easily threaded and retrieved. All chain shall be a minimum 5/16" and grade 30.

Carabiners are not required on stations, but if the developer does install them, they must be a name brand, load rated, steel carabiner. Single carabiner installations must use one locking carabiner; otherwise two opposed non-locking carabiners are permitted.

6.2.5 Fixed draws

All permanent, fixed draws should use a MINIMUM ¼" grade 30 chain with a steel carabiner. No nylon, or homemade cable draws are permitted to be installed. Aluminum carabiners should never be used as part of a permanent installation.

Aluminum carabiners should never be installed permanently. They quickly wear, causing dangerous sharp edges to develop which could cut a climbing rope.

7 Liability and Due Diligence

If route development activity directly harms a person below, criminal or civil charges may be laid. The *Best Practices Guide* is not meant to relieve or exempt involved parties of liability.

As individuals, everyone has the responsibility to conduct a reasonable level of due diligence or standard of care to ensure the risk or risks associated with their activities are at a level acceptable to society and the rule of law.

7.1 Route Developer

This document is meant to suggest the standard of care for route developers. With time, the standard is likely to change. Anyone performing route development is completely responsible for his or her actions, regardless of the risk mitigation they may have used. The goal of any route developer must first and foremost be to do, or cause, no harm or loss to any persons below. The route developer is always obligated to ensure that no person is below when debris is trundled. A number of mitigation options are available to the route developer, and are described in section 8 “Mitigation Options”.

7.2 Hiker

Even though these parks are near an urban center it is still considered a wilderness area. Wilderness activities are undertaken at one’s own risk as there are environmental and human safety risks associated with these activities – especially at the base of cliff faces where rock fall occurs. Individuals need to ensure they are safe in their conduct and that their conduct will not harm themselves or others.

8 Rockfall

8.1 General

Route cleaning involves liability considerations for anchor placements and harm or loss caused to persons as a direct result of trundled debris from route cleaning – particularly in the debris run out zone. Debris run out zones are the areas wherein debris may move through or stop after being set in motion.

The length of the route will have an impact on the scale of hazard mitigation required during the cleaning of the line. When the run-out zone is entirely within view to the route cleaner (i.e., most likely when within one pitch of the ground), hazard mitigation is less complex than when some part of the run-out zone is obscured. When the route cleaner can see clear to the ground through the entire run out zone, less exhaustive risk management strategies are required.

When the entire run out zone is not clearly visible, more exhaustive risk management strategies are required.

A SPOTTER MUST ALWAYS BE USED WHEN ROCK FALL MAY OCCUR. THE SPOTTER MUST ENSURE THE RUN OUT ZONE IS FLAGGED OFF AND THAT ANY PEDESTRIANS ARE INFORMED OF THE HAZARDS.

8.2 Run Out Zone

The process of identifying the maximum extents of debris run out zones is beyond the scope of this document. Route developers should determine the run-out zone, and err on the side of caution. A review of the base of the slope may help determine if any natural barriers may stop debris, or conversely, if any natural ground features may extend the run-out zone.

9 Mitigation Options

Anyone purposefully causing rocks or debris to be dropped from height during route development, retro fitting or cleaning, that results in bodily harm to individuals is completely responsible for their actions – regardless of precautions they may undertake to prevent it.

This section outlines several options for mitigating the risk of harming persons below route development activities. Because every route development situation is unique, the guidelines offered here are general and should be used together to effectively mitigate risk.

9.1 Types of Route Development Activities

The sort of material that a route developer drops is an important factor. Dusting, scrubbing moss and lichen, and brushing off debris no larger than sand may safely be performed under dry conditions. Fewer precautions are needed to ensure public safety when the mass of individual particles of debris are tiny. Ensuring public safety becomes immediately more complex when debris is even pebble-sized. Beyond pebble-sized debris, dropping larger debris greatly increases the complexity of ensuring public safety compared to smaller debris.

9.2 Lookouts and Sentries

Having lookouts and sentries is an effective measure if there is doubt about the effectiveness of signage. Lookouts and sentries are persons assisting a route developer by occupying a trail or other popular area outside the run-out zone and maintain communication (often by radios or cell phones) with the route developer. The job of a lookout/sentry is to intercept and inform persons walking by of the dangers, and to tell the route developer to stop work if the need arises.

9.3 Location and Height of Cleaning Activities

The location and height of route development has implications for levels of risk to persons below. Cleaning boulders on the floor of the forest tends to have different safety implications, compared to cleaning a route at the top of a wall. When cleaning near (e.g., within one pitch of) the ground, and when a clear line of site is available from the cleaning activity to the extent of the run-out zone, the task of ensuring public safety is easier for the route developer. The higher the route development activity, the more complex ensuring safety becomes.

9.4 Signage and Flagging

Research is needed to determine the public safety risks associated with the route development process. This sort of research should include becoming thoroughly informed about all the trails (for all hiking, roped climbing, and bouldering) in the area. The route developer must be familiar with all trails below the area to be developed and post appropriate signs and flagging.

After placing flagging and signs (before cleaning on a particular day), perform a ground sweep. This involves walking around the entire run out zone to ensure that no persons are present.

During cleaning activities, have signage and flagging appropriately in place. Signs and flagging should be in place for the duration of cleaning activities, and should be taken down immediately after the day's cleaning. String brightly-coloured tape, clearly marked using strong language, "CAUTION" or "DANGER", across every trail that accesses the run-out zone (i.e., the area that may be affected by falling rock). Signage should include:

- a written warning and explanation of what is transpiring;
- a non-verbal symbol of danger ahead; and
- the date of activity.

Signs should be able to withstand the elements of weather (e.g., water), and should be placed outside of the run-out zone, typically at the beginning of each trail that accesses the run-out zone. Be aware that multiple access points may exist for a given run out zone.

9.5 Timing

The timing of any route cleaning should coincide with a period where the area affected by the cleaning is expected to have few to no users. Following this general rule will make ensuring public safety easier and make it less likely that you will block public access to recreational opportunities.

The following factors tend to affect the number of persons below route cleaning activities. Route developers should interpret these timing factors together, combined with the location, to determine the likelihood of interacting/not interacting with other park users.

9.5.1 Month of the year

The Parks and recreational areas have far more users during the summer months than they do in the spring and fall; these seasons have far more users than in the winter.

9.5.2 Day of the week

The Parks and recreation areas have fewer users on weekdays than they do on weekends.

9.5.3 Time of day

The Parks and recreation areas have fewer users at night than they do during the day.

9.5.4 Weather

The Parks have fewer users when it's raining or snowing, and the rock is wet or icy.

9.6 Auditory Warnings

In some circumstances, yelling “rock” or sounding an air horn can help alert persons on the ground of falling debris. This strategy is not sufficient on its own to ensure public safety, but should be used in conjunction with other safety measures.

9.7 Internet Presence

Posting notices of cleaning on internet forums or social media (e.g., Kelowna Climbing Facebook page) is encouraged.

9.8 Hypothetical Examples of Successful Mitigation

What follows are theoretical cleaning projects for the purpose of illustrating core concepts. These examples are simply meant to illustrate what successful mitigation might entail; they are not meant to be suggestions for route development. This is not an exhaustive list of options. It is left to the route developer to design mitigation options for their particular activity.

- → **Low risk example.** Lichen scrubbing on a slab at the Boulderfields. For a lichen scrubbing project, where the route developer is *certain* that *only* tiny bits of lichen are being removed, cleaning can take place on a weekday in the spring or summer. Flagging tape, signs, and sentries are not necessary.

- → **Medium risk example.** Rock, dirt, and vegetation removal at a crag (e.g., Pipeline at KLO). Anticipating that debris will be dropped that could cause bodily harm to someone on the ground, risk mitigation is needed. The entire run out zone is visible and the route development is within one pitch of the ground, but the cleaning is taking place at a popular crag. Trundling should take place when few or no people

are around, either in the shoulder seasons, or on marginal days in summer. Flagging tape and signage are recommended but sentries are not necessary.

→ **High risk example.** Rock, dirt, and vegetation removal on a multi-pitch route. For cleaning more than one pitch above the ground, cleaning should take place on marginal or wet days in the off-season, with flagging tape and signs blocking all the trails leaving the parking areas. A ground sweep is necessary. Sentries, if available, are recommended.

→ **High risk example.** Rock, dirt, and vegetation removal on a route that is adjacent to a popular hiking or mountain biking trail. Even if the work is within one pitch of the ground there is a high risk of recreational users travelling through the run-out zone, even during rainy days. Flagging and a spotter should always be used.

10 Contributors

10.1 Authors and Editors

References and content was used from the Best Practices Guide For Rock Climbing Route Development in the Squamish Area Provincial Parks. Contributing authors of the Squamish guide: Jeremy Frimer, Dave Zevick, Colin Moorhead, Jeremy Smith, Marc Bourdon, Charlie Harrison, Katy Holm, John Howe, Andre Ike, Peter Winter; professionally edited and formatted by Charlie Harrison.

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10.2 Photo Credits

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11 References

BC Parks' Website:
http://www.env.gov.bc.ca

Canadian Wildlife Species at Risk
Committee on the Status of Wildlife in Canada (COSEWIC), "Canadian Wildlife Species at Risk," October 2011.

Climbers' Access Society of B.C. Website:
http://www.access-society.ca/

Information about bolts and anchors:
http://www.fixeusa.com/

Rock Climbing Strategy:
http://www.stawamuschiefpark.ca/stawamus.pdf

Regional Parks Plan(RDCO)
https://www.regionaldistrict.com/media/15935/Bylaw0884.pdf

Johns Family Nature Conservatory Management Plan
https://www.regionaldistrict.com/media/131742/JohnsFamilyMgmtPlan.pdf

Myra-Bellevue Park and Myra-Bellevue Protected Area Management Direction Statement
http://www.env.gov.bc.ca/bcparks/planning/mgmtplns/myra_bellevue/myra_bellevue_mds_sept_2005.pdf?v=1494390857300

City of Kelowna Official Community Plan
https://apps.kelowna.ca/CityPage/Docs/PDFs/Bylaws/Official%20Community%20Plan%202030%20Bylaw%20No.%2010500/Chapter%2012%20-%20Natural%20Environment%20DP%20Guidelines.pdf

Leave No Trace Canada
http://www.leavenotrace.ca/home