

The Mountaineers Annual Safety Report for 2022

March 2023

Prepared by the Mountaineers Safety Committee:

2022 Safety Officers

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EXECUTIVE SUMMARY

Annual safety reports increase awareness of risks associated with Mountaineers activities by providing:

- historical incident trends
- incident details (with names and second person pronouns removed in support of anonymity)
- observations drawn from incident trends and report details
- recommendations for improvements in activity training and trip preparation/leadership
- with the intention of reducing the probability and severity of incidents

Increasing awareness of risks associated with Mountaineers activities and then learning and mastering skills to avoid or minimize exposure to such risks can help reduce incident probability and mitigate incident severity. Maintaining a balance between risk, knowledge, capability, and conditioning increases the likelihood of avoiding serious incidents, injuries, and fatalities. The primary objective for Mountaineers members should always be for everyone to return home from activities alive and well, physically as well as emotionally.

Keeping risk management top-of-mind can, at times, run counter to a natural inclination to discount risk (the weather doesn't look that bad) or take shortcuts (no need for a seatbelt for this short trip to the store) to get going, save time, and reduce effort. Most of the time, when people make short-sighted decisions, they pass through the resulting increased risk unscathed. Occasionally, they experience "luck" when a back-up kicks in (for instance, bringing enough rain gear) or when common safety equipment saves the day (thank goodness for that air bag). Near misses and minor injuries are wake-up calls that alert us to reexamine decision making around exposure to risk and to employ appropriate capabilities.

Over time, unnecessary risk exposure increases the odds of serious incidents, and in rare instances, people win the wrong kind of lottery; the risk they have exposed themselves to is not addressed by any preparation or inherent capability, and the worst imaginable incident occurs. Risks associated with Mountaineers courses and activities include critical, life-altering, even fatal, incidents. The chances of these incidents occurring can be mitigated --- not eliminated --- through deploying sufficient capabilities, experience, and conditioning. Many incidents can be avoided altogether, or transformed to "near-miss" occurrences, with a straightforward focus on managing risks. Managing risk by following sound practices leads to more frequently successful adventures.

In some instances, using sufficient capabilities to manage risk may take more time, gear, knowledge, experience, or conditioning. Appropriately managing risk may mean deciding to turn around and attempting to achieve an objective another day. But in the long term, those who consistently manage risk can expect to live longer and enjoy more years of getting home safe, getting home friends, and getting to the objective --- in that order.

The strategy for managing risk is straightforward to describe but a bit harder to consistently put into practice. First, we need to recognize the hazards associated with the adventure; then address those hazards when planning and preparing for the activity. In the midst of the adventure, the strategy is to be present and mindful of immediate as well as upcoming hazards, avoiding them when possible and using the right capabilities to mitigate the risk of the hazards' negative consequences, while enjoying the thrill of the positive experience.

Few activities engage people as physically, mentally, and emotionally as do Mountaineers adventures. Those with ample experience seek to identify, prepare for, minimize exposure to, and mitigate the risk associated with hazards prior to their activities. During an adventure, they remain vigilant in recognizing unanticipated hazards and make decisions to avoid the hazards or mitigate exposure to them. Afterward, they share with their community the knowledge gained during the adventure by submitting incident reports (including safety concerns or near misses, as well as reports on incidents resulting in injury) so that others can incorporate lessons learned into their adventure preparation.

The annual safety report is intended to encapsulate the wisdom shared by Mountaineers members, volunteers, instructors, and leaders.

INTRODUCTION

Committee Purpose

The purposes of the Safety Committee are to:

- ensure that Mountaineers activities have access to, adopt, and follow current safety standards and best practices.
- provide resources for education and training of trip leaders and course instructors.
- perform collection and analysis of information on safety incidents, accidents, and near misses.
- Document, maintain, and distribute throughout the organization relevant incident trend analysis with recommendations on best path forward to address incident trends and recommendations from critical incident response reports.

The Safety Committee reports to the Branch Leadership Committee (BLC) and enhances the organizational safety culture and structure such that The Mountaineers sufficiently manages risk inherent in the activities we participate in and is recognized as a national leader in outdoor activity safety.

Responsibilities

The Safety Committee accomplishes the following:

- prepares incident reporting and shares with appropriate organization leadership.
- recommends to the BLC, Risk Management Committee (RMC), and activity councils and summit groups responses to incident trends and/or critical incident report recommendations. BLC and activity councils and summit groups are responsible to approve or reject the recommendations, as well as ensure that approved recommendations are carried out.
- collects, develops, and distributes safety-related education and knowledge pertinent to each activity.
- helps standardize and educate safety concepts and awareness at the branch and activity levels.
- assists in the development of standards for leader qualification and continuing education.
- onboards, trains, enables, and supports branch Safety Officers and activity level Safety Representatives.
- stimulates creation, support, and ongoing maintenance of Safety committees within each Branch.
- sets expectations and partners with branch leadership to support branch Safety committee accountabilities.

Safety committee goals for 2022 included:

- Encourage better understanding of when and how to submit incident reports
- Encourage adding tips and considerations to route places for leader consideration when trip planning
- Collect incident information in a systematic manner
- Share incident trend information in a systematic format
- Communicate summaries of incidents to members
- Facilitate discussion of incidents and safety measures among members

We categorize incidents as follows:

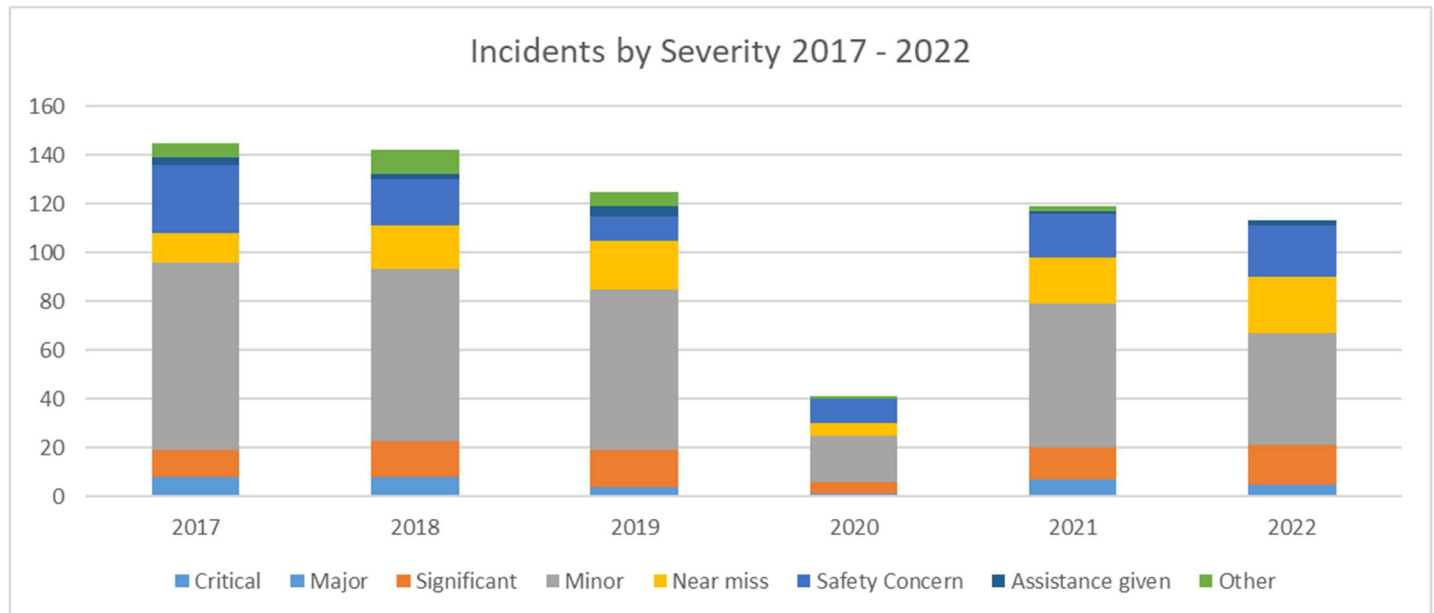
- **Critical Incidents** are fatalities or life-changing incidents.
- **Major Incidents** involve emergency medical attention or hospitalization; Search and Rescue (search performed); 911 call (emergency responders).
- **Significant Incidents** involve medical attention or SAR or 911 called but no search performed.
- **Minor incidents** involve 1) situations involving Mountaineers groups where injuries were minor, or 2) the situations affected the party in a negative fashion such as gear problems, party separation, personal conflicts, etc.
- **Party Assists** denote when a Mountaineers group aids of another group responding to an incident described as MAJOR or SIGNIFICANT.
- **Near Misses and Lessons Learned** are situations where no one was injured but safety concerns were raised. Safety experts at 2016 Mountaineer Leadership conference suggested that Near Misses are very important to track. Many of these are reported by trip participants.
- **Other incidents** describe situations that don't well fit the above situations.

The Safety Committee shares incident report detail for 2022 in this report, with any identifying information of objective and participants removed. The Safety Committee encourages you to examine the report narratives and lessons learned, as reported by activity leaders and participants, and incorporate knowledge gained in your adventure preparation to reduce the probability and severity of incidents.

-- Bill Ashby 2022 Safety Committee Chair

SUMMARY STATISTICS

In 2017 through 2022 there were 685 incident reports broken out as follows:



Incident Severity	2017	2018	2019	2020	2021	2022
Critical	1					
Major	7	8	4	1	7	5
Significant	11	15	15	5	13	16
Minor	77	70	66	19	59	46
Near miss	12	18	20	5	19	23
Safety Concern	28	19	10	10	18	21
Assistance given	3	2	4		1	2
Other	6	10	6	1	2	0
Total	145	142	125	41	119	113

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Party Assists denote when a Mountaineers group aids of another group responding to an incident described as MAJOR or SIGNIFICANT.

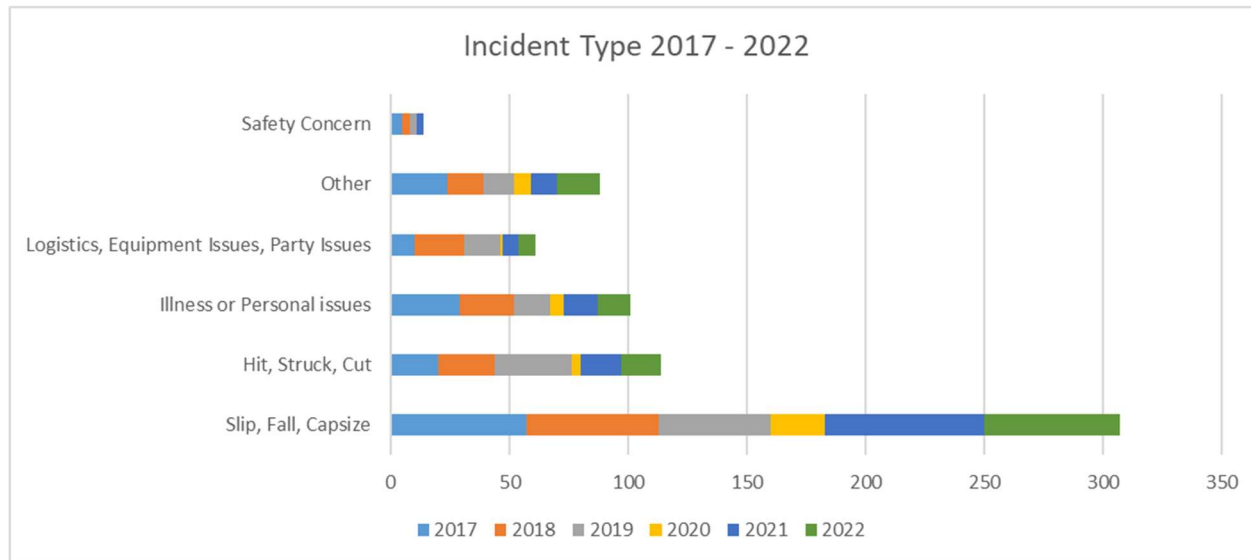
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SUMMARY STATISTICS

BAR CHART – INCIDENT CATEGORIES 2017 – 2022 (ALL SEVERITIES)

In 2017 through 2022, the majority of incident were slips and falls, followed by hit and struck, and then conditioning/health issues.



Incident Type	2017	2018	2019	2020	2021	2022
Slip, Fall, Capsize	57	56	47	23	67	57
Hit, Struck, Cut	20	24	32	4	17	17
Illness or Personal issues	29	23	15	6	14	14
Logistics, Equipment Issues, Party Issues	10	21	15	1	7	7
Other	24	15	13	7	11	18
Safety Concern	5	3	3		3	
Grand Total	145	142	125	41	119	113

Incident descriptions indicate falls **on-trail** are the result of:

- Distraction (taking a picture or talking to passersby)
- Stepping off trail on unstable terrain to make room for another party to pass
- Tripping/slipping on roots and other trail anomalies, such as slippery, wet logs, stream crossings
- Conditioning (reduced stamina) as a contributing factor

Falls **off-trail** are the result of:

- On snow – predominantly ice-axe skill related, but post-holing as well
- On scrambling terrain – shifting rock while crossing talus fields
- On technical-climbing terrain – handholds / footholds breaking off, judgement, skill

Hit and struck occur mostly off trail and are predominantly the result of rockfall, **the majority of which are human caused**. The Everett Branch prepared an excellent presentation on skills and approaches to reduce the frequency and severity of hit and struck due to human-caused rockfall. This presentation is available on the Safety Committee page of the Mountaineers website. [Rockfall Presentation — The Mountaineers](#)

Here are lessons learned accumulated from slips and falls incident reports. For those of us spending time in the alpine, these are worth contemplating and sharing with others to help reduce the frequency and severity of slips and falls.

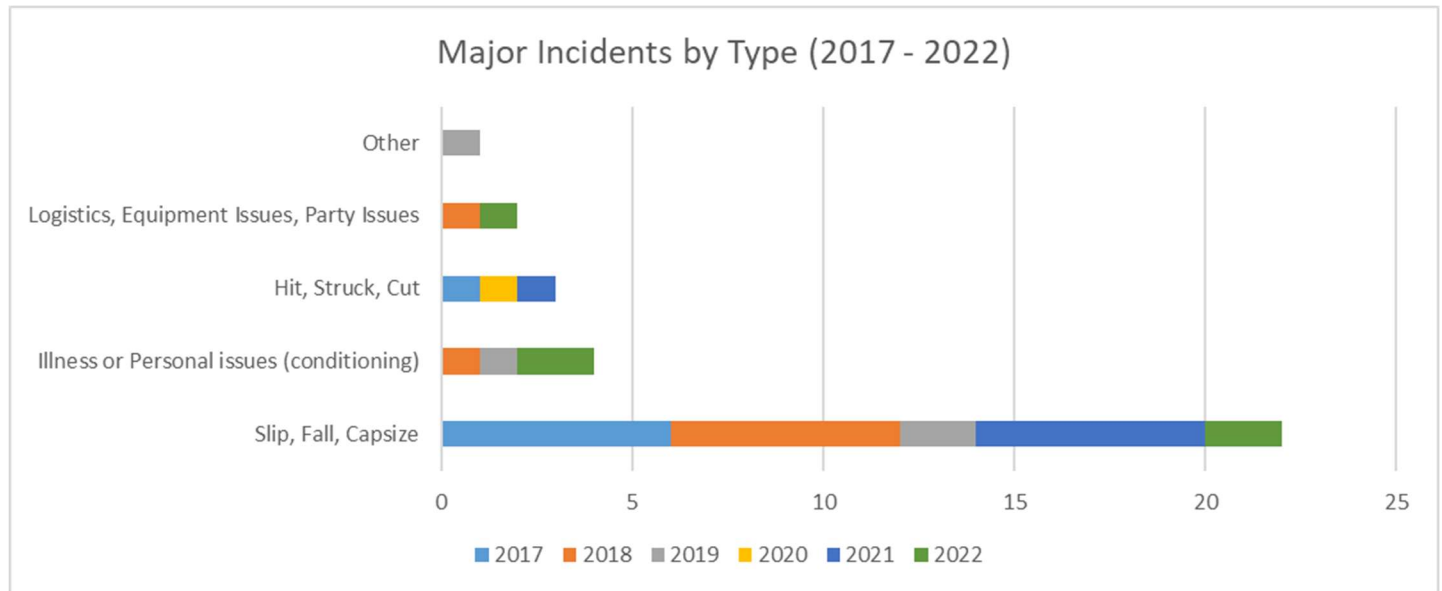
- Remain attentive to trail features/anomalies whenever moving.
- Ensure sufficient space between you and the person in front of you so that you can identify and maneuver around trail features/anomalies.
- Move at a pace you can maintain without becoming overly winded or muscle tired.
- Move at a pace you can identify and maneuver around trail features/anomalies.
- Maintain hydration and calorie intake to lubricate and power your travel.
- Consider enabling drinking (tube readily accessible) and eating (snacks in pocket) without stopping to remove pack.
- Have ready access to sunglasses and eye shades to improve visibility while moving.
- Manage pack weight across the party **early and often as needed** to balance pace across the party.
- Call out to other participants when you identify something unique and unexpected in the terrain.
- Use proper foot gear for the terrain, and be prepared and willing to transition as needed:
 - approach shoes
 - light hiking boots
 - sturdy full-shank mountaineering boots
 - climbing shoes
 - micro-spikes
 - crampons
 - snowshoes
- Use walking aids as appropriate, including trekking poles **or** an ice axe (not both simultaneously), as the terrain varies.
- When off-trail, maintain at least three points of contact with the terrain through use of hands, feet, and/or aids such as trekking poles or an ice axe.
- Practice, practice, practice ice-axe skills.
- In the alpine, climb at a conservative level, compared with your gym-climbing level.
- In the alpine, test hand and foot holds, and avoid mossy / dirty holds.

Here are recommendations to manage the risk of hit and struck by rockfall while off-trail in the alpine.

- Travel rock-fall prone stretches early in the day when ice is solid and is holding loose rock in place.
- Wear leather gloves and a helmet.
- When you become aware of falling rock, yell ROCK, ROCK, ROCK!
- When you hear ROCK-ROCK-ROCK above you, move out the way if you can, otherwise, get as small as you can, lower your head to protect your face, and if possible, remove your hands from handholds to reduce risk of crushing injuries.
- To avoid dislodging rock, step carefully; transfer weight to upper leg, then smoothly push down on it, rather than pushing off with your lower leg.
- Select drier vs. wetter terrain, wet soil is weaker and dislodges more easily.
- When ascending broad talus slopes, consider spreading team laterally across slope.
- When ascending narrow defiles or gullies, consider passing crux sections one at a time, while others remain in a protected location out of the fall line.
- In general, keep group close together so a dislodged rock cannot gain momentum before passing everyone.
- Moving upslope on a diagonal prevents participants at lower elevation being in the fall line of those above.
- Consider using snowfields if you have appropriate traction gear and an ice axe.
- No single strategy works in all cases; take the terrain into consideration.
- Maintaining balance and walking carefully requires strength and conditioning built through sufficient repetition of “time on ascent and descent.”

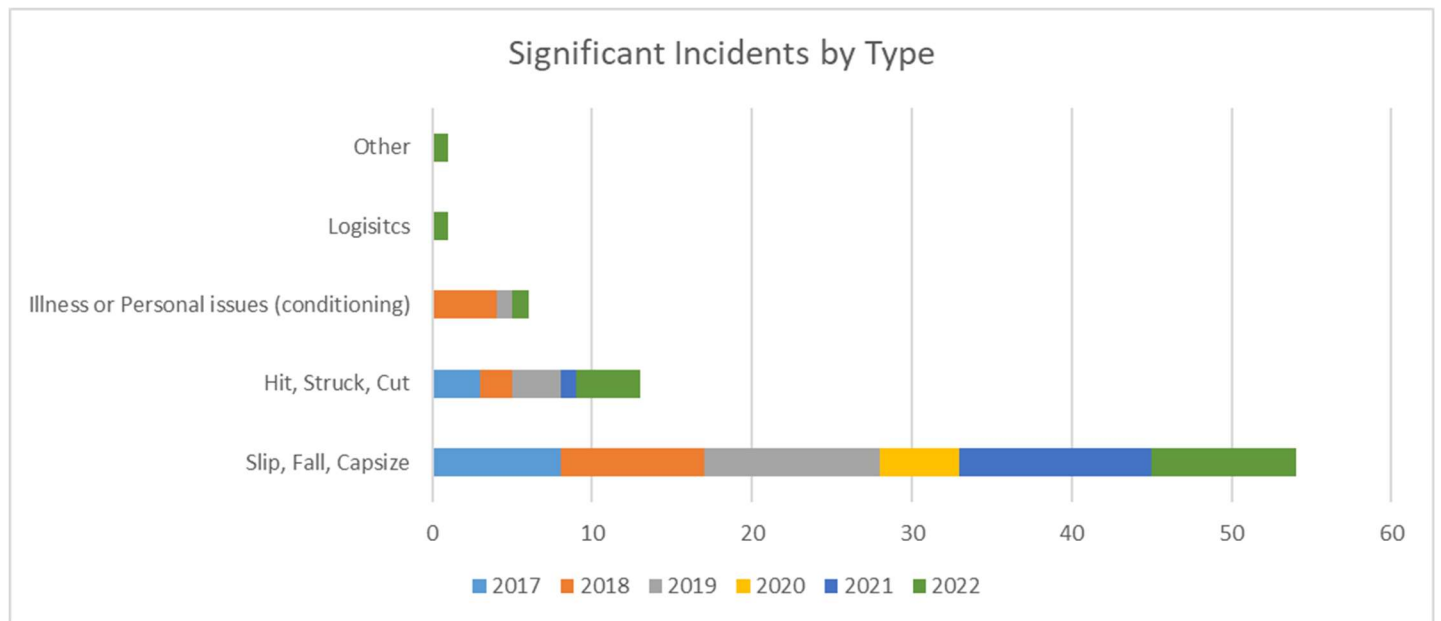
CHARTS

BAR CHART – MAJOR INCIDENTS



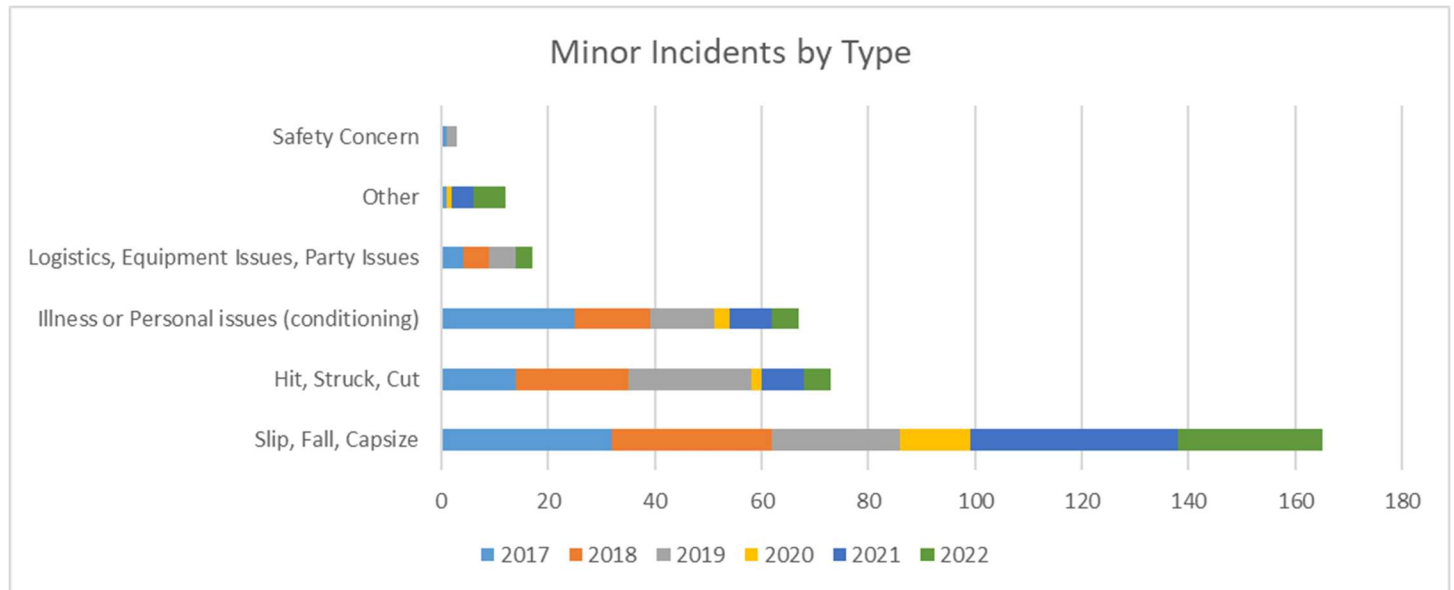
Major Incidents by Type	2017	2018	2019	2020	2021	2022
Slip, Fall, Capsize	6	6	2		6	2
Illness or Personal issues (conditioning)		1	1			2
Hit, Struck, Cut	1			1	1	
Logistics, Equipment Issues, Party Issues		1				1
Other			1			
Grand Total	7	8	4	1	7	5

BAR CHARTS – SIGNIFICANT INCIDENTS



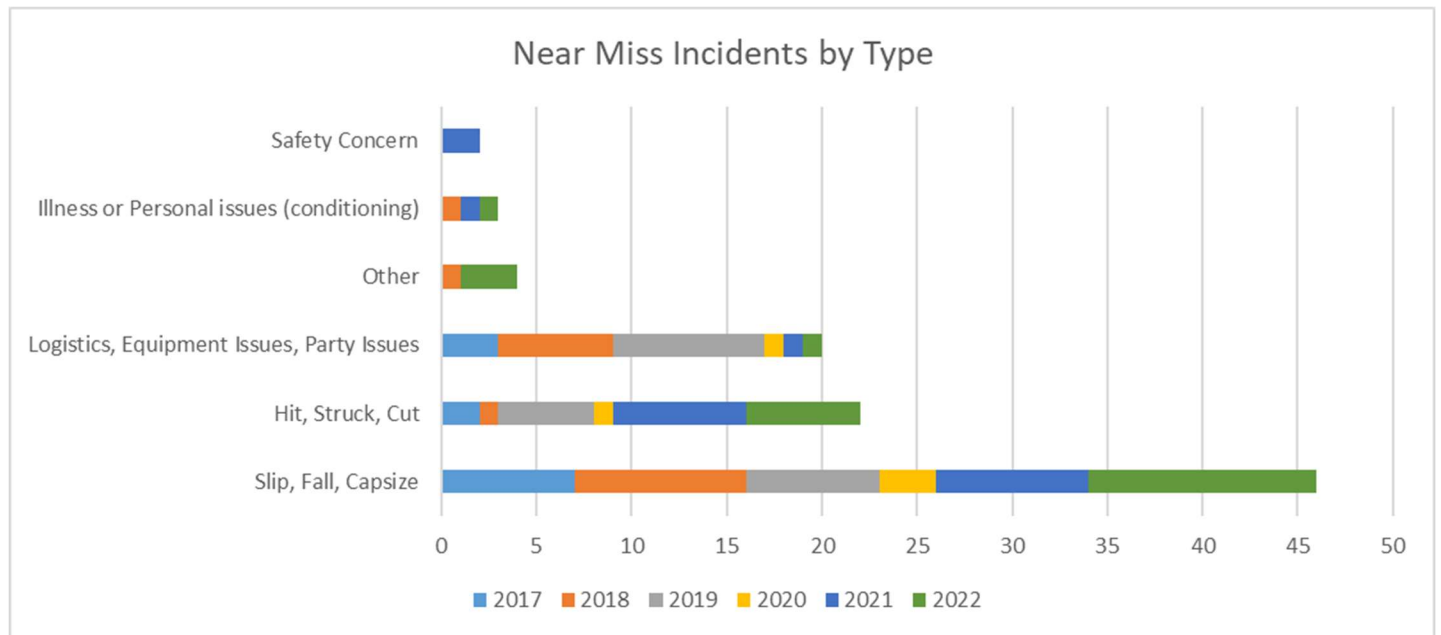
Significant Incidents by Type	2017	2018	2019	2020	2021	2022
Slip, Fall, Capsize	8	9	11	5	12	9
Hit, Struck, Cut	3	2	3		1	4
Illness or Personal issues (conditioning)		4	1			1
Logisitcs						1
Other						1
Grand Total	11	15	15	5	13	16

BAR CHARTS – MINOR INCIDENTS



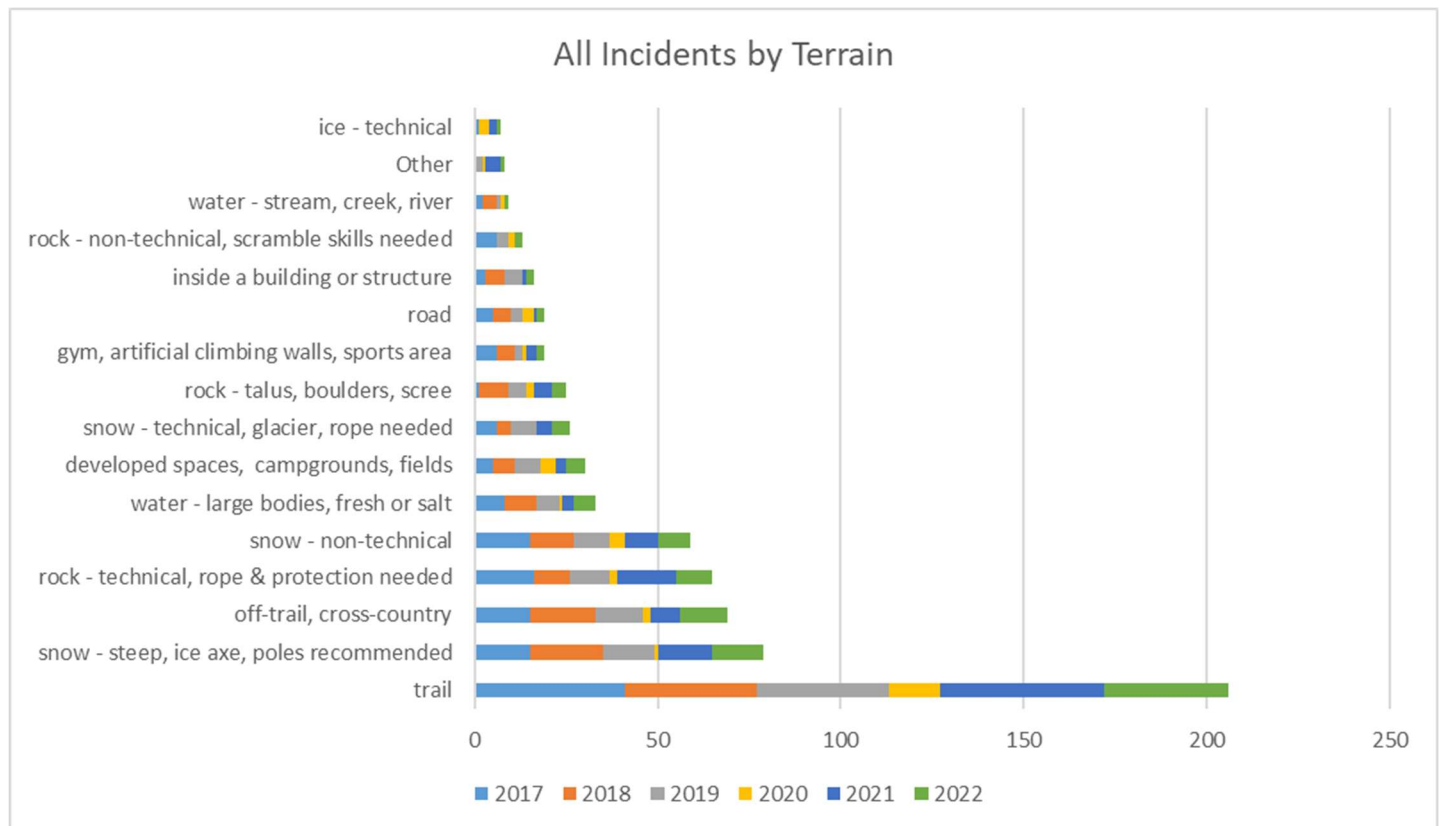
Minor Incidents by Type	2017	2018	2019	2020	2021	2022
Slip, Fall, Capsize	32	30	24	13	39	27
Hit, Struck, Cut	14	21	23	2	8	5
Illness or Personal issues (conditioning)	25	14	12	3	8	5
Logistics, Equipment Issues, Party Issues	4	5	5			3
Other	1			1	4	6
Safety Concern	1		2			
Grand Total	77	70	66	19	59	46

BAR CHART – NEAR MISSES



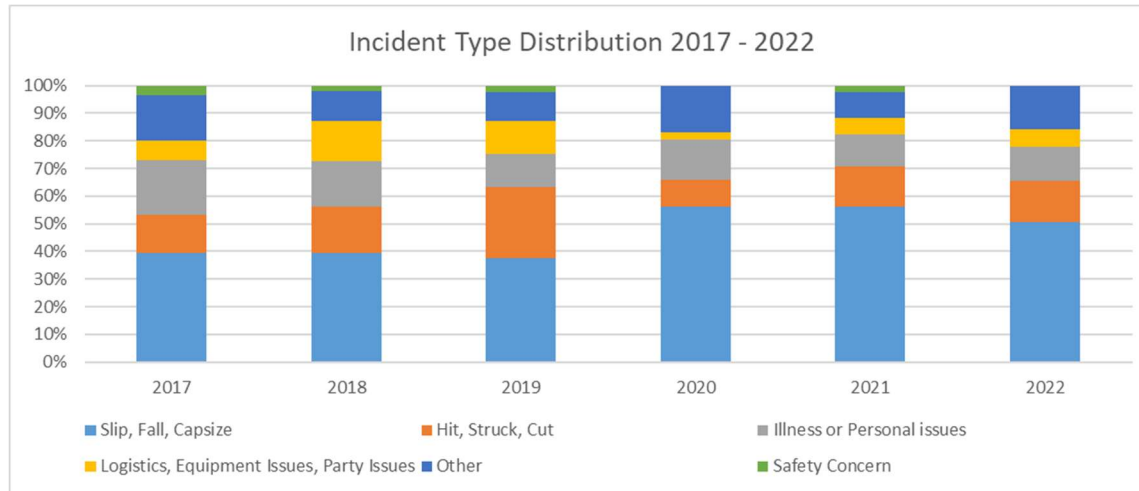
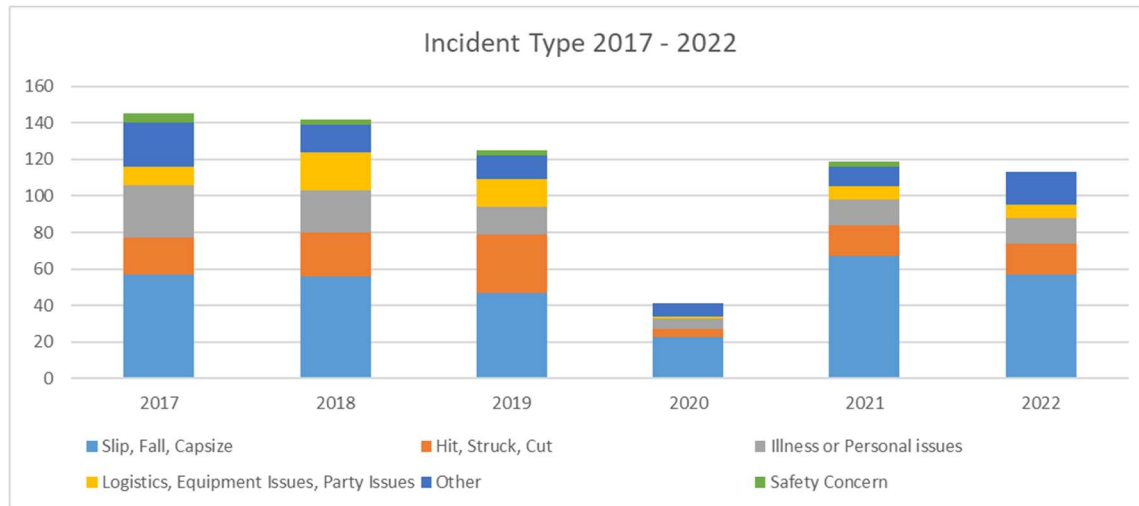
Near Miss Incidents by Type	2017	2018	2019	2020	2021	2022
Slip, Fall, Capsize	7	9	7	3	8	12
Hit, Struck, Cut	2	1	5	1	7	6
Logistics, Equipment Issues, Party Issues	3	6	8	1	1	1
Other		1				3
Illness or Personal issues (conditioning)		1			1	1
Safety Concern					2	
Grand Total	12	18	20	5	19	23

BAR CHART – INCIDENTS BY TERRAIN



All Incidents by Terrain	2017	2018	2019	2020	2021	2022
trail	41	36	36	14	45	34
snow - steep, ice axe, poles recommended	15	20	14	1	15	14
off-trail, cross-country	15	18	13	2	8	13
rock - technical, rope & protection needed	16	10	11	2	16	10
snow - non-technical	15	12	10	4	9	9
water - large bodies, fresh or salt	8	9	6	1	3	6
developed spaces, campgrounds, fields	5	6	7	4	3	5
snow - technical, glacier, rope needed	6	4	7		4	5
rock - talus, boulders, scree	1	8	5	2	5	4
gym, artificial climbing walls, sports area	6	5	2	1	3	2
road	5	5	3	3	1	2
inside a building or structure	3	5	5		1	2
rock - non-technical, scramble skills needed	6		3	2		2
water - stream, creek, river	2	4	1	1		1
Other			2	1	4	1
ice - technical	1			3	2	1
Grand Total	145	142	125	41	119	111

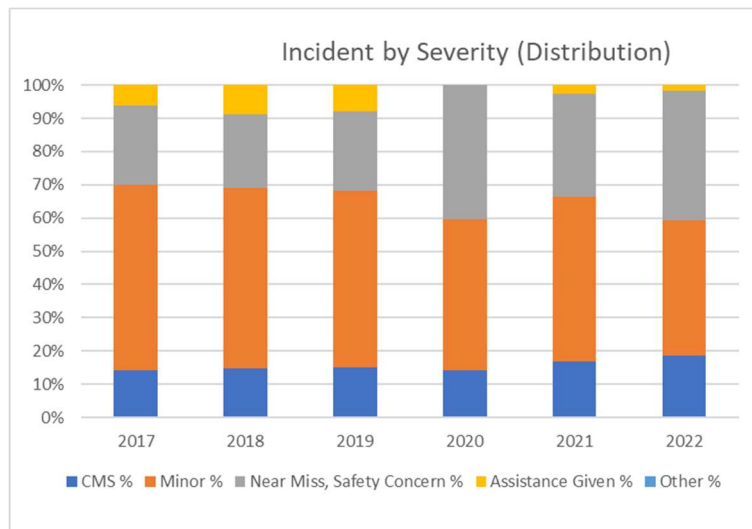
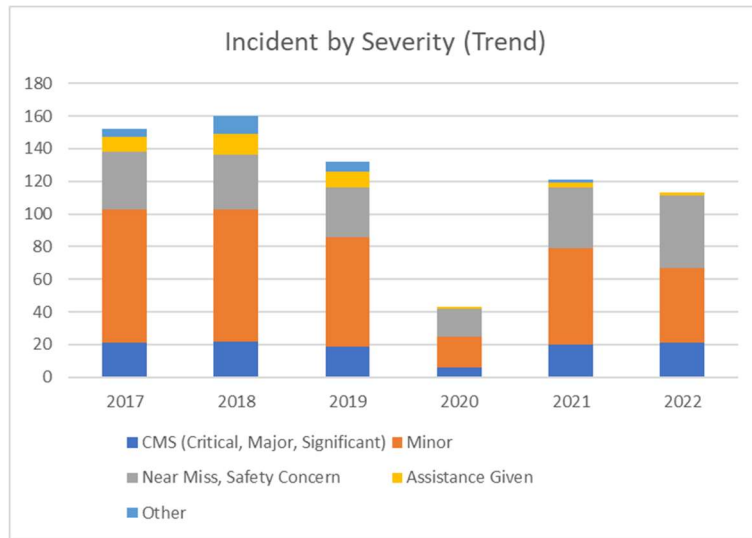
BAR CHART - COMPARISON OF INCIDENTS OVER TIME BY CATEGORY



Incident Type	2017	2018	2019	2020	2021	2022	Total
Slip, Fall, Capsize	57	56	47	23	67	57	250
Hit, Struck, Cut	20	24	32	4	17	17	94
Illness or Personal issues	29	23	15	6	14	14	72
Logistics, Equipment Issues, Party Issues	10	21	15	1	7	7	51
Other	24	15	13	7	11	18	64
Safety Concern	5	3	3		3		9
Grand Total	145	142	125	41	119	113	540

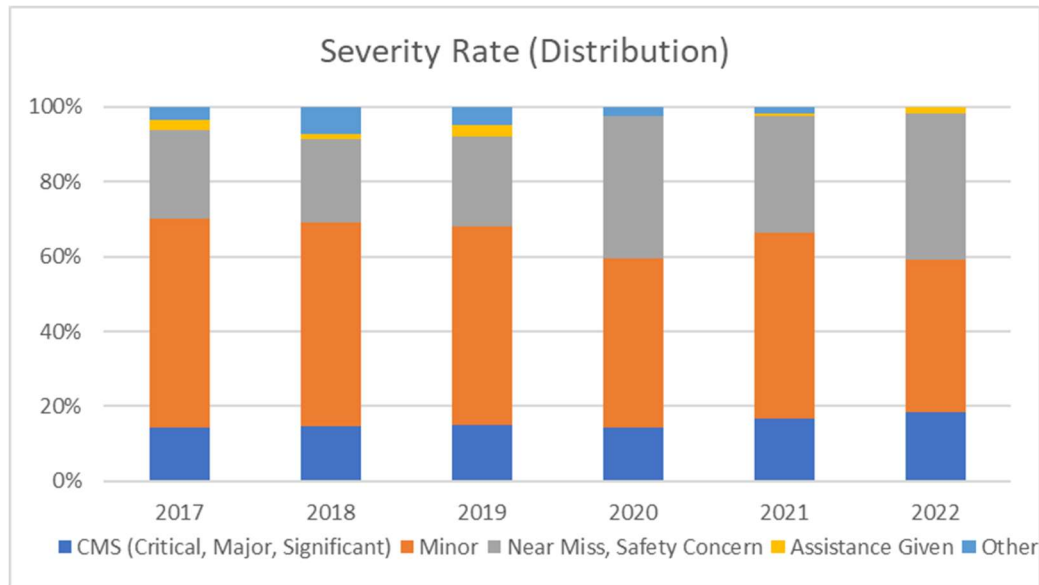
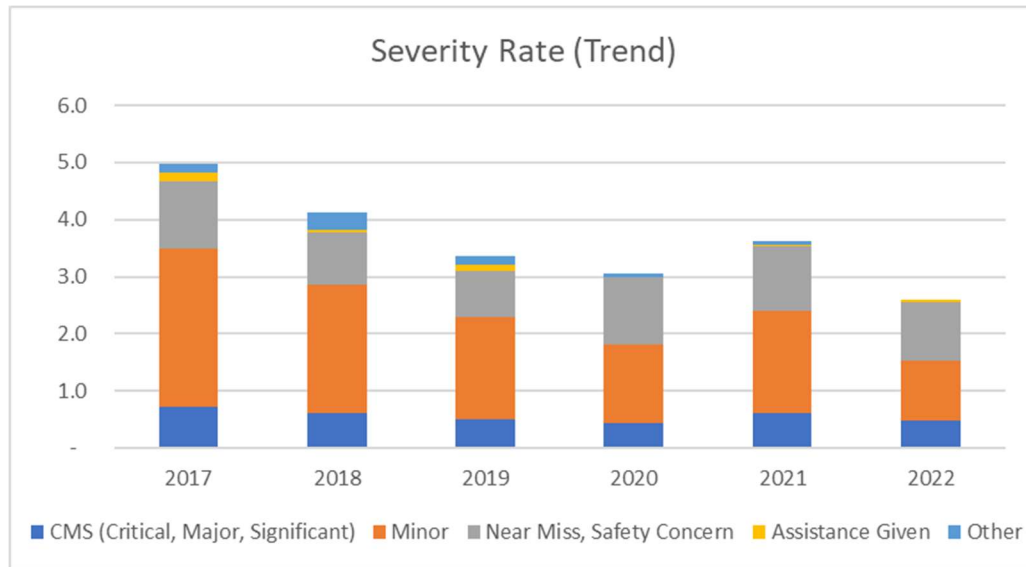
Incident Type	2017	2018	2019	2020	2021	2022	Total
Slip, Fall, Capsize	39%	39%	38%	56%	56%	50%	46%
Hit, Struck, Cut	14%	17%	26%	10%	14%	15%	17%
Illness or Personal issues	20%	16%	12%	15%	12%	12%	13%
Logistics, Equipment Issues, Party Issues	7%	15%	12%	2%	6%	6%	9%
Other	17%	11%	10%	17%	9%	16%	12%
Safety Concern	3%	2%	2%	0%	3%	0%	2%
Grand Total	100%	100%	100%	100%	100%	100%	100%

BAR CHART - COMPARISON OF INCIDENTS OVER TIME BY SEVERITY



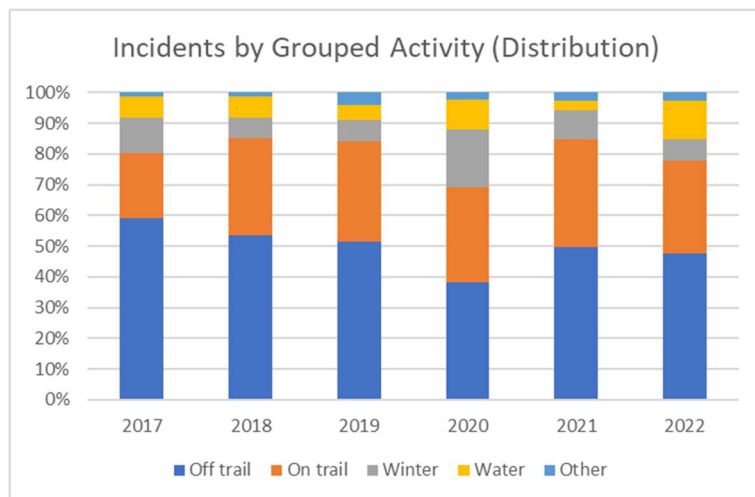
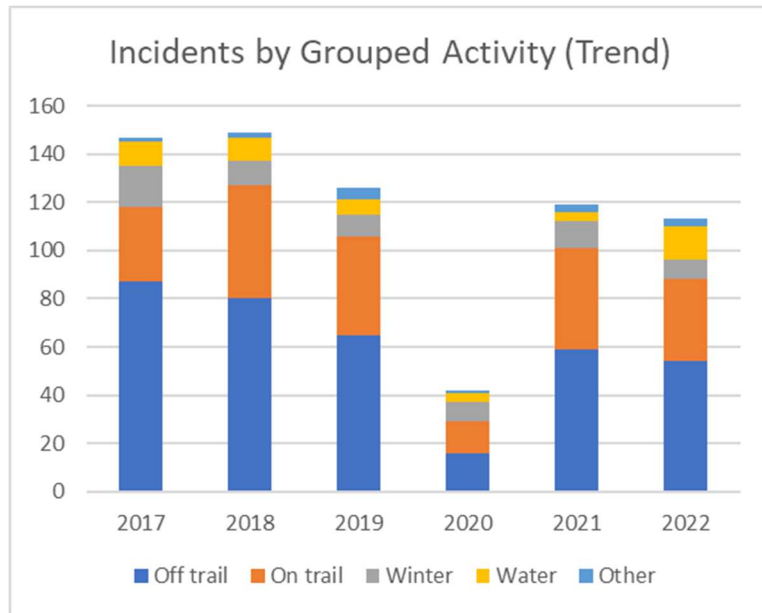
Org Level Incidents by Severity					Through Dec 2022	
Incidents by Severity	2017	2018	2019	2020	2021	2022
CMS (Critical, Major, Significant)	21	22	19	6	20	21
Minor	82	81	67	19	59	46
Near Miss, Safety Concern	35	33	30	17	37	44
Assistance Given	9	13	10	1	3	2
Other	5	11	6	0	2	0
CMS %	14%	15%	15%	14%	17%	19%
Minor %	56%	54%	53%	45%	50%	41%
Near Miss, Safety Concern %	24%	22%	24%	40%	31%	39%
Assistance Given %	6%	9%	8%	2%	3%	2%
Other %	3%	7%	5%	0%	2%	0%

BAR CHART COMPARING INCIDENT RATES PER 1,000 PARTICIPANT DAYS OVER TIME



Org Incident Rates by Severity					Through Dec 2022	
Incident Rates by Severity	2017	2018	2019	2020	2021	2022
CMS (Critical, Major, Significant)	0.7	0.6	0.5	0.4	0.6	0.5
Minor	2.8	2.2	1.8	1.4	1.8	1.1
Near Miss, Safety Concern	1.2	0.9	0.8	1.2	1.1	1.0
Assistance Given	0.1	0.1	0.1	-	0.0	0.0
Other	0.2	0.3	0.2	0.1	0.1	-
Total	5.0	4.1	3.4	3.1	3.6	2.6
CMS (Critical, Major, Significant)	14%	15%	15%	14%	17%	19%
Minor	56%	54%	53%	45%	50%	41%
Near Miss, Safety Concern	24%	22%	24%	38%	31%	39%
Assistance Given	3%	1%	3%	0%	1%	2%
Other	3%	7%	5%	2%	2%	0%

BAR CHARTS – INCIDENTS BY ACTIVITY GROUPING



Incidents by Activity Group					Through Dec 2022	
Incidents by Activity Group	2017	2018	2019	2020	2021	2022
Off trail	87	80	65	16	59	54
On trail	31	47	41	13	42	34
Winter	17	10	9	8	11	8
Water	10	10	6	4	4	14
Other	2	2	5	1	3	3
Total	147	149	126	42	119	113
Off trail %	59%	54%	52%	38%	50%	48%
On trail %	21%	32%	33%	31%	35%	30%
Winter %	12%	7%	7%	19%	9%	7%
Water %	7%	7%	5%	10%	3%	12%

Activities are included in groups as follows:

- Off trail – Climbing, Scrambling, Canyoning, Navigation
- On trail – Hiking, Backpacking, Bike Packing, Trail Running, Urban Adventures, Stewardship
- Winter – Avalanche, All skiing forms, Snowshoe, Winter Scrambling
- Water – Kayaking, Pack Rafting, and Sailing
- Other – All other activities

On a quarterly basis, additional incident trend information by activity grouping --- including incident category and rates --- are reported to the Board, Risk Management Committee, Branch Leadership Committee, Safety Committee, and activity Summit Groups. Climbing, Scrambling, Snowshoe, and Kayaking detail is also reported to Summit Groups and Safety Committee.

On a quarterly basis, incident description and lessons learned detail information --- similar to that in the attached document --- is provided to Risk Management Committee, Branch Leadership Committee, Safety Committee, and corresponding activity Summit Groups.

Detailed incident reports and lessons learned are included in the attached table.