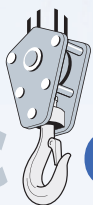


2021 Annual Report



**BC Crane
Safety**

Crane Certification and Licensing Authority





**BC Crane
Safety**

Crane Certification and Licensing Authority

Table of Contents

Message from the Chair	2
Message from the Executive Director	3
PART 1 – About BC Crane Safety	4
Our Guiding Principles	6
Our Board of Directors	7
Past Board Members	11
Our Staff	11
PART 2 – The Impact of Certification	12
Development of the BC Crane Operator Certification Program	12
The Certification Journey	14
Impact of the BC Crane Operator Certification Program	16
Certification by the Numbers 2021	18
PART 3 – 2021 Highlights	31
Resources and Programs	21
Standards Development	22
Promoting the Crane Operator Profession	24
PART 4 – Looking Ahead	27
PART 5 – Our Collaborators	29
PART 6 – Financial Statements	31
BC Association for Crane Safety, 2021 Fiscal Year in Review	31

BC Crane Safety provides health and safety leadership for crane and hoisting operations across diverse industries in all regions of British Columbia.

Photography by Fraser Cocks, Roberta Sheng-Taylor
Images of Directors supplied by themselves
Writing and Editing by Michelle Harding
Design and Layout by TAP Graphics Ltd.*

* Stock imagery also utilised.

Message from the Chair

Jason Gilmore



I was elected Chair in June 2021. I had big shoes to fill! Thanks to our past Chair, Ryan Burton, and Clinton Connell, our Executive Director, BC Crane Safety is set up for success and I've been able to move into my new role knowing I have an amazing team around me.

I want to acknowledge the huge impact that Clinton and Fraser Cocks before him have made on the culture of crane safety in BC.

When I started running cranes in my 20s, training was scarce and not much PPE was mandatory. Things are very different now. Equipment is much bigger and newcomers to the profession have a lot more awareness of safety through good, accessible training. Attitudes toward safety on jobsites have changed drastically since the 1990s and BC Crane Safety has been a major driver in that culture shift.

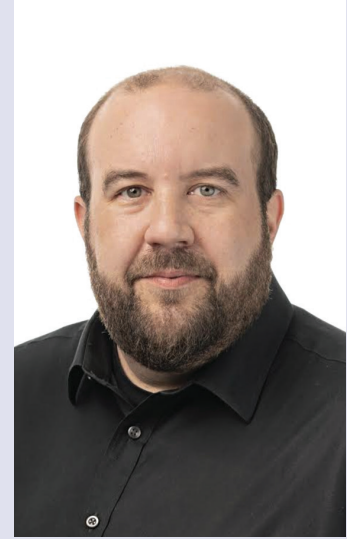
People are our future. One of our biggest challenges now is addressing the shortage of skilled labour facing our province. One of my goals is to ensure that young workers who have grown up valuing safety are encouraged to become crane operators. It's a great career with a lot of potential for advancement and BC Crane Safety has the resources to support them at every stage on their path.

Finally, I want to thank the BC Crane Safety staff and every past Board member for their contributions. If it weren't for them, we would not be where we are now. We have a brilliant future ahead of us. It is an incredible privilege to serve as Chair and I look forward to achieving our best work so far in 2022!

A handwritten signature in blue ink, appearing to read 'Jason Gilmore'. The signature is fluid and cursive, written on a white background.

Message from the Executive Director

Clinton Connell



2021 will no doubt be a year to remember. Despite the challenges brought on by the pandemic and extreme weather events, our industry had one of the busiest years on record. The construction industry was deemed an essential service in 2020 and displayed incredible safety leadership with COVID-19 protocols keeping workers and the public safe. Except for tourism/hospitality and film production, almost every other sector we serve was working beyond capacity.

As we start to return to pre-pandemic routines, employers face new challenges. What began as a skilled labour shortage due to an aging and retiring workforce, has turned into a labour shortage across all industry sectors. Recruitment, retention, and training capacity have become key areas of focus. With our competency-based certification program, BC Crane Safety is well positioned to attract new entrants into the industry. We provide clear paths for apprentices, challengers, operators from other provinces, and operators from some other countries with credentials that meet globally recognized standards.

This year, we welcomed some new team members, including Nicole Santos (Certification Analyst) and George Louie (Accounting Supervisor). We ended the year by relocating our office to the Fraser Valley to be closer to our stakeholder community. 2022 will be a busy year as we forge ahead with ISO 17024 accreditation, prepare to launch a new website, and develop more and more resources to support our stakeholders. We continue to work with industry, WorkSafeBC, and training providers to further improve safety and compliance in all crane operations.

I'd like to acknowledge the hard work of our staff, Directors, and our various partners in making 2021 a success. Thank you. I look forward to all the good work ahead!

A blue ink handwritten signature, appearing to read 'Clinton Connell', written in a cursive style.

PART 1 – ABOUT BC CRANE SAFETY

Crane Certification & Licensing Authority for BC

BC Crane Safety was formed in 2005 to develop a certification program for crane operators in British Columbia. At that time, there was no common standard to ensure that crane operators had met minimum qualifications. The result was some very serious incidents that cost not only money but workers' lives.

Since crane operator certification became mandatory in 2007, more than 23,000 operators of 11 crane types have earned BC Crane Safety credentials. These highly skilled professionals have gone on to vastly improve the safety record of crane operations in BC. Our program is so successful that we have formed partnerships with other regions in North America and Europe to recognize the value of the BC certificates and the achievements of the operators who hold them.

BC Crane Safety is BC's crane operator certification authority and administrator as designated by WorkSafeBC. We provide leadership and support for health and safety in crane hoisting operations and serve as an advisory body for regulatory matters. We collaborate closely with industry, labour, regulators and governments to develop, maintain and implement standards for assessments and certification.

We are primarily funded by WorkSafeBC. We thank them for 17 years of support, collaboration and innovation.

Our top focus is, and will always be, to promote health and safety for workers, workplaces and the public. That's why we continue to develop resources and "next practices" to help support all our stakeholders in the many industries that benefit from safe, effective crane operations.



We manage the Certification Program

The BC Crane Safety crane operator certification has been in place since 2005 and was originally developed over a two-year period of consultation with employers, crane rental companies, operators, and representatives from the International Union of Operating Engineers. Contributors represented every region of the province and came from a broad range of industry sectors including construction, primary resources, utilities, manufacturing, industrial moving, and oil and gas.

We participate in Standards Development

BC Crane Safety has developed and filed 13 crane-related occupational competency standards with WorkSafeBC. These standards are reviewed by technical experts and are updated regularly to acknowledge revisions to regulatory requirements, advances in equipment and technology, and emerging or new safety hazards.

We are a Health and Safety Association

BC Crane Safety works closely with crane-related health and safety representatives and the provincial regulator to address significant hazards and to publish safe work practices, crane-related checklists and other tools to support crane employers, contractors, supervisors and operators.

We are BC's crane certification authority. We oversee a third-party competency-based certification system that has become a model for jurisdictions around the world. We are in the process of achieving world-class status through ISO/IEC 17024 alignment.

ISO/IEC 17024



We work with industries, governments and health and safety authorities within BC, across Canada and internationally to identify trends and "next practices" that impact all our stakeholders including the many industries that benefit from safe, effective crane operations.



BC Crane Safety

Crane Certification and Licensing Authority

WHO WE ARE

Our oversight role means we are not a training organization or an assessment body. Because we use a third-party assessment process, we avoid conflicts of interest and maintain quality assurance. This means we validate and issue credentials impartially.



We set and maintain competency-based assessment standards and protocols for 6 levels of certification and for eleven crane types.

6



We manage the certification of operators who can demonstrate competency, no matter how and where they gained their skills.



We work alongside Fulford Certification, the third-party service provider that facilitates exam delivery and conducts practical assessments.

We are advocates and promoters for the health and safety of worksites, workers and the public.



Our Guiding Principles

The **vision** of BC Crane Safety is:

Safe and effective crane, hoisting, and rigging operations throughout British Columbia.

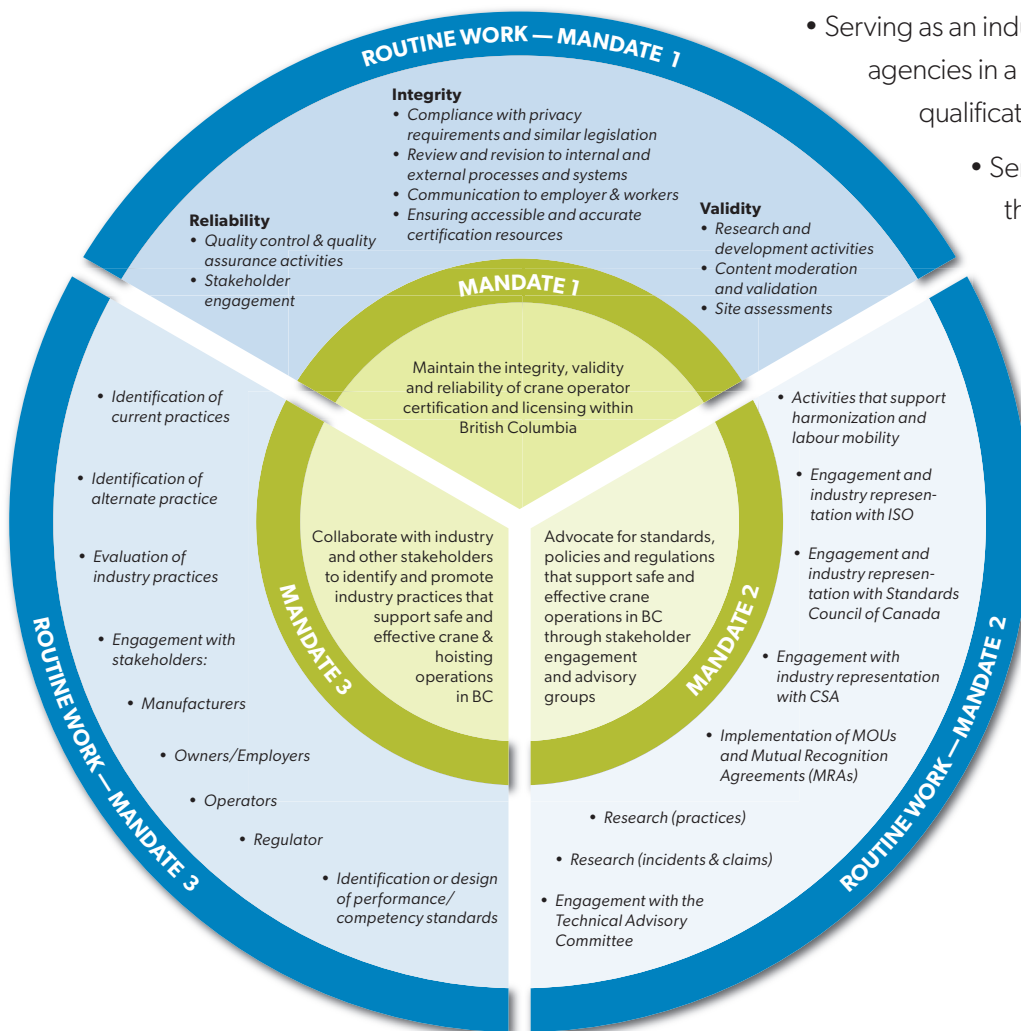
The **mission** of BC Crane Safety is:

To engage with our stakeholders concerned with cranes, hoists and rigging, including employers and workers, across multiple sectors to support safe crane and hoisting operations in British Columbia.

The **mandate** of BC Crane Safety is shown in the graphic below.

Organizational objectives include:

- Promoting accident-free crane operations throughout British Columbia
- The establishment in British Columbia of a cost-effective crane operator qualification regime that:
 - Involves documented proof of competency
 - Includes theoretical and practical assessments
 - Is accessible and available at all levels of industry.
- Promoting the attractiveness of the industry to prospective entry-level crane operators and the timely achievement of their qualifications
 - Serving as an industry advisory body to agencies in a position to oversee qualifications and standards.
 - Serving as an advisory body to the Workers' Compensation Board of British Columbia (WorkSafeBC) regarding regulatory matters and other matters related to occupational health and safety as they impact the crane industry.



Our Values

- Leadership
- Stewardship
- Transparency
- Partnership
- Professionalism

Our Board of Directors

The BC Crane Safety Board of Directors is a stakeholder Board. That means only people who own cranes, operate them, or employ crane operators can be voting members. Our Board also includes non-voting representatives from WorkSafeBC and the Yukon Workers' Compensation Health and Safety Board.

Our Board members represent a cross-section of stakeholders including:

Crane types, including

- Mobile cranes
- Tower cranes
- Boom trucks
- Self-erect cranes

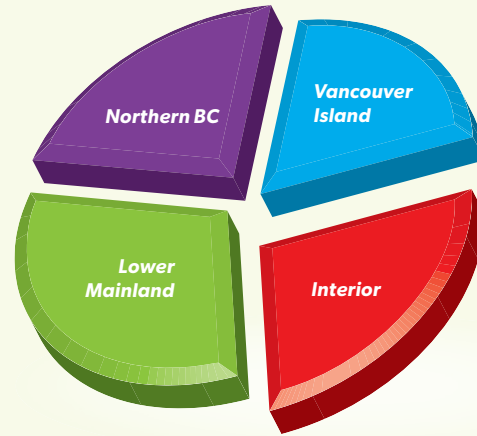
Industry sectors, including

- Heavy industry
- Engineering
- Construction
- Power and utility
- Marine and piledriving

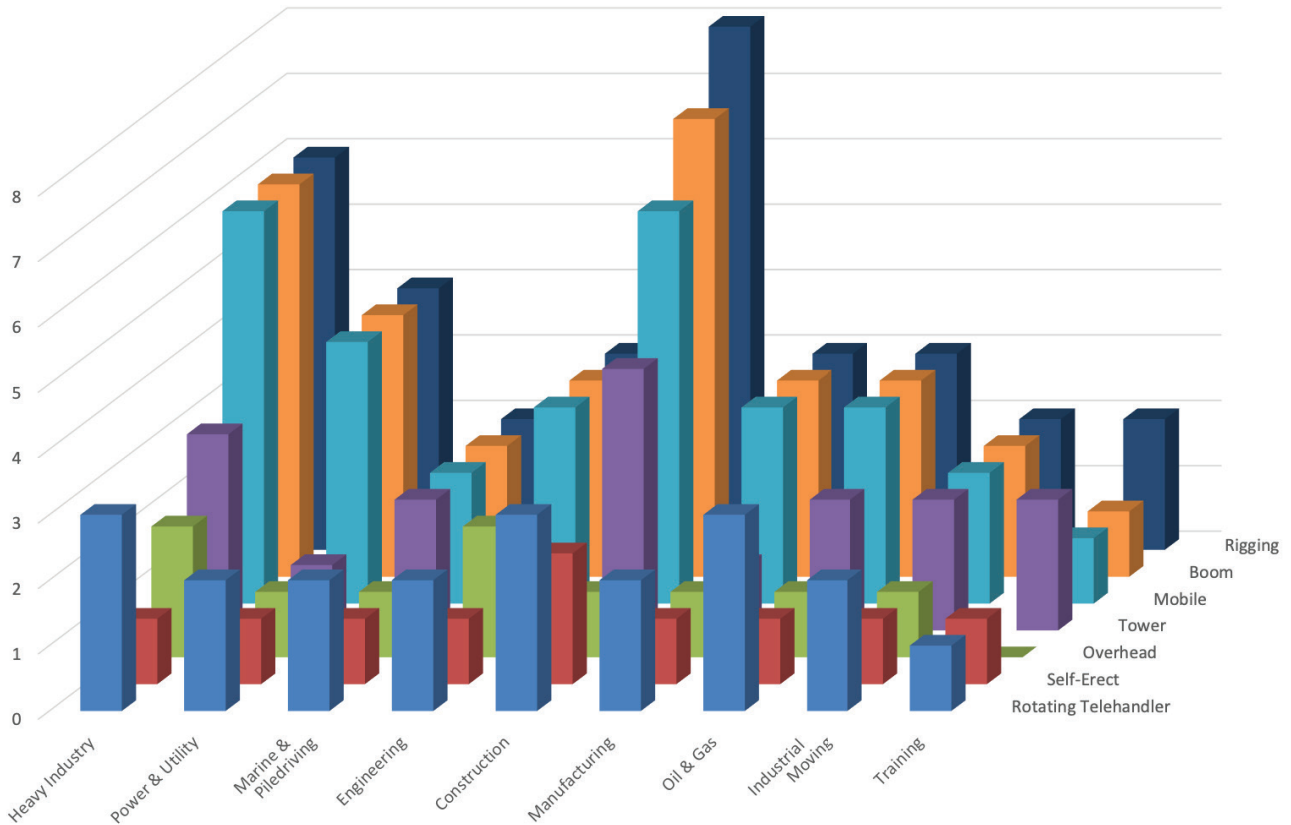
Regions in BC, including

- Lower Mainland
- Interior
- Vancouver Island
- Northern BC

Board Representation by Region — 2021



Board Member Representation by Sector and Equipment Type — 2021



Our Board of Directors



Jason Gilmore (Chair)

Phoenix Truck and Crane Coquitlam, BC

Jason Gilmore is an active crane operator and equipment owner. He is a representative for Phoenix Truck and Crane. Phoenix is a safety leader and COR-certified company providing general freight and crane services throughout the Lower Mainland for 30 years. Jason joined the BC Crane Safety Board of Directors in 2016 and stepped into the role of Chair in 2021.



Jeff Gorham (Vice Chair)

International Union of Operating Engineers Local 115, Burnaby, BC

Jeff Gorham is Administrator at IUOE Local 115 Training Association (IUOETA), a national leader in delivering training supporting a range of industries including road building and heavy construction, mobile crane operation and asphalt paving. The IUOETA also participates in the development of national occupational standards for heavy equipment operation. With this background, Jeff has been contributing his expertise and knowledge to BC Crane Safety through his service on the Board of Directors since 2016.



Don Stevens (Treasurer)

Teck Metals Ltd., Trail, BC

Don Stevens is a professional engineer working for Teck Metals Limited in Trail BC. He obtained his mechanical engineering degree from the University of British Columbia. Don spent 12 years working in a design office prior to moving to Teck Trail Operations. He now oversees the crane and lifting program for the site. Teck Trail Operations has a variety of lifting equipment ranging from mobile cranes and bridge cranes to portable hoists and below-the-hook lifting devices. Don joined the BC Crane Safety Board of Directors in 2019.



Shawn Lynch

Convoy Supply, Surrey, BC

Shawn Lynch has served on the BC Crane Safety Board of Directors since 2012. He is the Health and Safety Environmental Manager for Convoy Supply (Canada/USA). Before that, he worked as a health and safety manager with major developers on residential, commercial and infrastructure projects in the BC Lower Mainland for 11 years. After he completed his university degree, he served as an army medic in Europe and the Middle East.



Ryan Stewart

Arsenal Engineering, Abbotsford, BC

Ryan Stewart is a professional engineer originally from northern BC. He obtained his mechanical engineering degrees (BSc and MSc) from the University of Alberta. After completing his degrees, he worked in northern Alberta for a few years before moving to the Lower Mainland. Ryan started Arsenal Engineering Ltd. at the end of 2014. Arsenal provides engineering consulting and non-destructive testing services with a focus on construction and lift equipment. Ryan joined the BC Crane Safety Board of Directors in 2019.



Steve Gibson

Kiewit, Edmonton, AB

Steve Gibson is Project Crane and Equipment Manager at Kiewit. With more than 19 years' experience as a crane operator, equipment maintenance supervisor and trainer, Steve has had the opportunity to get to know many areas of the crane industry including lift planning, rigging, scheduling, inspecting, incident investigation, piling operations, tower cranes, barge mounted cranes, heavy lift and transport and assembly/disassembly operations. Steve sits on multiple crane committees across Canada and has served as a valued member of the BC Crane Safety Board of Directors since 2015.

Our Board of Directors



Chris Grajek

Allteck Line Contractors

Chris Grajek is the Director of HSE for Allteck Limited Partnership for the last 15 years. Chris manages and coordinates safety, environment, and work method programs and initiatives. He is a Canadian Registered Safety Professional and Certified Utility Safety Professional with extensive experience in heavy construction, high voltage transmission/distribution/substation projects, remote and heavy terrain environments, air and marine utility operations, and various specialized work methods for the electrical and gas utility sector. Chris is involved with a variety of utility task teams including his service on the Boards of BC Crane Safety (since 2013) and the Utility Safety Operations Leadership Network.



Matthew Blackwell

RKM Crane Services, Langley, BC

Matthew Blackwell has been actively involved in the crane and hoisting industry for more than 20 years. He started in the residential sector as a tower crane operator and then moved into the mobile crane industry. As an apprentice, he worked through several training programs, becoming trade-qualified in both tower and mobile crane operations. Today, he is the General Manager of RKM Crane Rentals in the Lower Mainland. Matthew joined the BC Crane Safety Board of Directors in 2020.



Dennis Bamford

Maxum Cranes, Vancouver, BC

Dennis Bamford has been operating mobile cranes for many years. He has been General Manager at Maxum Crane Rentals in Burnaby, BC since 2014. Founded in 1999, Maxum is a safety leader providing services to many industries in BC including a specialization in the motion picture industry. Dennis joined the BC Crane Safety Board of Directors in 2020.

Past Board Members

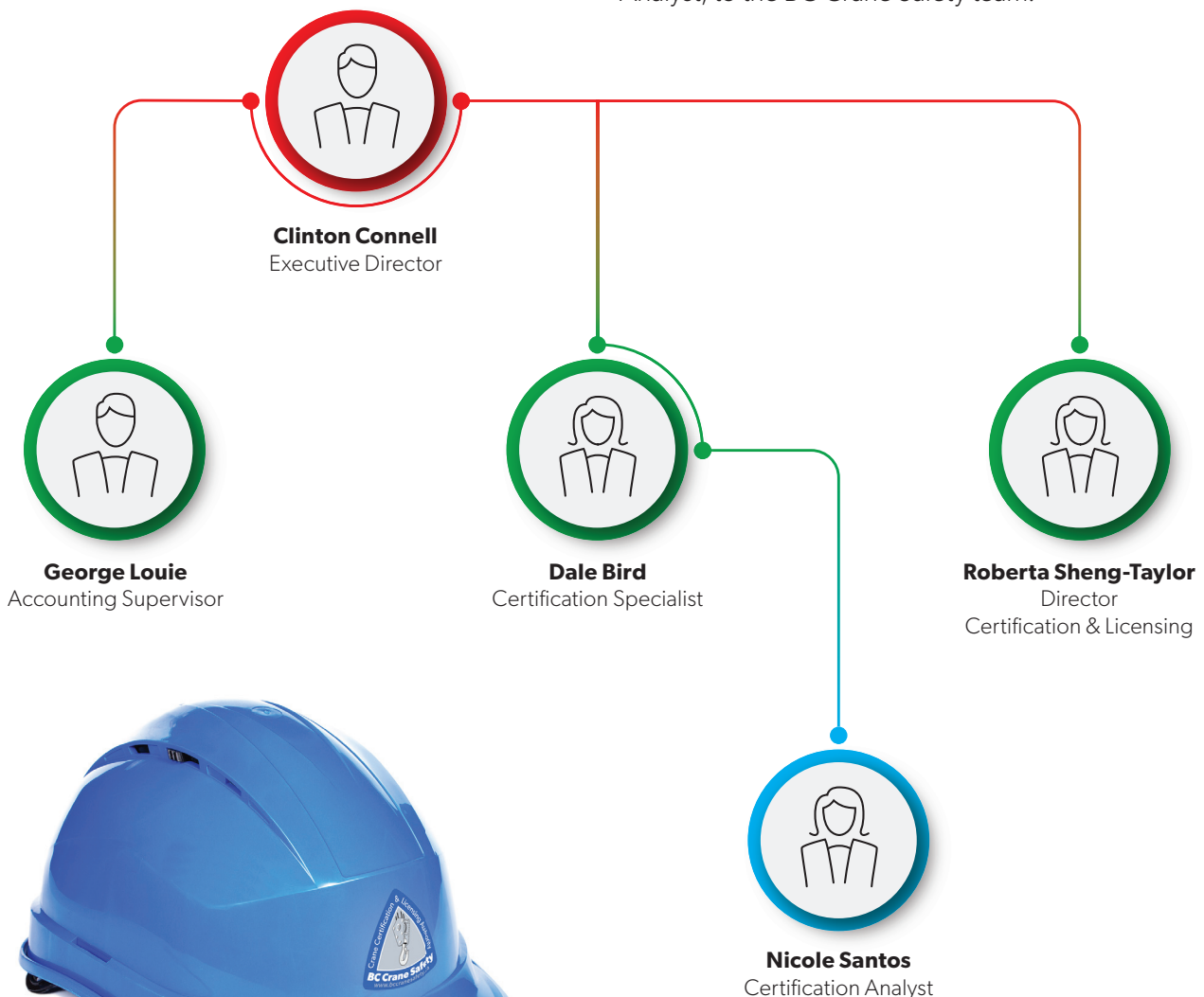
BC Crane Safety is grateful for the valuable contributions of our past Board members. They have seen us grow from just an idea in 2004 to a world-class certification authority now. All our past Directors have been driven by their commitment to developing and delivering a practical, effective crane operator certification system that works for everyone and maintains the highest global standards of safety and competence.

The BC Crane Safety success story would not have been possible without their leadership and expertise.

Our Staff

We're very proud of our wonderful team of talented professionals. These are the people who keep us going every day, managing everything — whether it's telephone enquiries, processing assessment records and applications, finances, or new initiatives to support employers and operators in the field. That's just a small fraction of what our staff accomplishes every day. We appreciate their dedication, expertise and hard work and we thank them.

This year we are pleased to welcome George Louie, Accounting Supervisor, and Nicole Santos, Certification Analyst, to the BC Crane Safety team.



PART 2 – THE IMPACT OF CERTIFICATION

Development of the BC Crane Operator Certification Program

In December 2004, WorkSafeBC began a dialogue with crane owners, operators and organized labour. They wanted to find out how to best address gaps in the BC Occupational Health and Safety Regulation (OHSR) that had emerged regarding crane operations.

BC's apprenticeship system had been dissolved in 2002 and there was no way to enforce even the limited standards that had been in place before then. The old system only applied to the largest types of mobile cranes and didn't include a practical test of competence. BC was left in a difficult place. There was no formal training system for crane operators and no way to distinguish between operators who were competent from those who fell short.

Crane operators, owners, employers, and labour groups wanted a formal certification program because unsafe operations were costing lives and livelihoods. Financial costs were impacting employers and contractors in terms of efficiency and damages to equipment and property. Something had to be done.

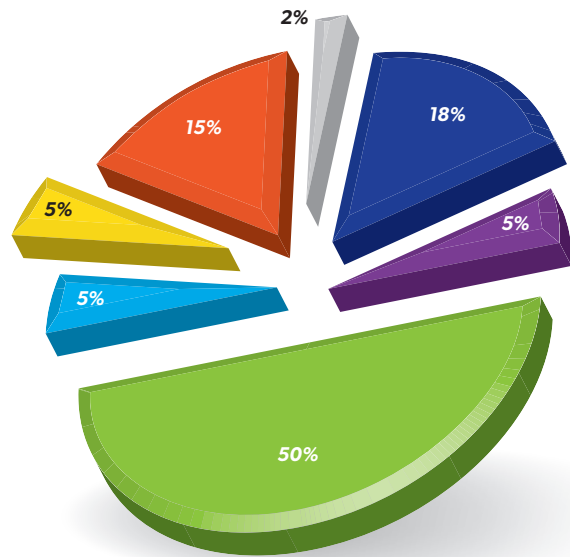
It took several years to reach consensus because there are so many different industries with an interest in safe crane operations: approximately 72 CUs (Industry Classification Units). But we did it. And we keep doing it.

The BC Crane Safety certification program is unique in several ways.

- It was developed by industry – made by and for people who use cranes including operators, owners and employers. It took a lot of dedication and vision to get such a wide range of interests working together. They decided how the program should work and what the standards should be.
- It is a competency-based certification program. That means it requires a hands-on practical test of knowledge, skills, abilities and attitudes. While hours of experience on the job is an important piece of the program, it is not the only measure. Prospective operators are not required to take specific courses. It's about what people know and can do safely and professionally, no matter how they learned, or how long it took.

- It follows the natural progression of how crane operators are trained and grow competent by measuring operators' competencies through independent, professional assessments in real-world scenarios using the equipment they are used to.
- It has a flexible, tiered structure that allows people with different levels of skill or ambition to operate the types of equipment appropriate to their work. Once a person has gained a core foundation of skills and knowledge, they can move to more specialized classes of cranes as they build their careers. It also makes the program responsive to changing economic conditions because operators can get certified on the equipment in highest demand in their area and industry sector.

BC Crane Safety-certified operators take pride in their credentials. And rightly so. Our system is recognized throughout North America and Europe as among the best in the world. We continue to work toward agreements with other jurisdictions to mutually recognize the professionalism of BC crane operators. The result? More opportunity, more mobility, and most of all, more assurance that workers and the public go home safely at the end of every workday.



BC Crane Usage by Employer Sector

- Primary Resources
- Manufacturing
- Industrial/Commercial (ICI)/Residential/Marine Construction
- Transportation and Warehousing
- Public Sector
- Service Sector
- Film/TV Industry

Comprising approximately 72 sector classification units (CUs).



The Certification Journey

01

Certification Journey Begins

BC Crane Safety is incorporated as the certifying body for BC crane operators for various crane types throughout the province and across industries.

BC's OHS (Occupational Health and Safety) Regulation requiring certification goes into effect. More than double the original estimate were received and processed (10,000 in total).

2004

WorkSafeBC holds the first-ever Crane Safety Conference to invite stakeholder participation in the development of a new competency-based certification program.

2005

BC Crane Safety holds dozens of consultation workshops that include participants from WorkSafeBC, Yukon Workers' Health and Safety Board, the ITA (Industry Training Authority), organized labour and 52 crane owners, operators and employers.

2006

2007

2008

The first theoretical and practical assessments are piloted with a group of 125 participants. By the end of the year, the first post-pilot practical assessments are conducted in Yukon Territory.

03

Certification Program Recognition

A Memorandum of Understanding (MOU) is signed with Ireland, expressing the intentions of Ireland and BC to mutually recognize mobile and tower crane operator credentials. A Mutual Recognition Agreement (MRA) is signed recognizing US certifying bodies.

BC Crane Safety enters into an agreement with the Government of Canada to pursue an MRA with the European Union under the Canada-European Union Comprehensive Economic and Trade Agreement (CETA).

2014

A mutual recognition process with Washington state is established. The CHRSC steps up efforts to promote the harmonization of certification standards across Canada.

2015

2016

Fed OSHA, the US Federal Occupational Safety and Health Administration, invites BC Crane Safety to present information about the success of BC's certification program. The SkillRecord logbook is expanded to include Yukon Territory.

2017

2018

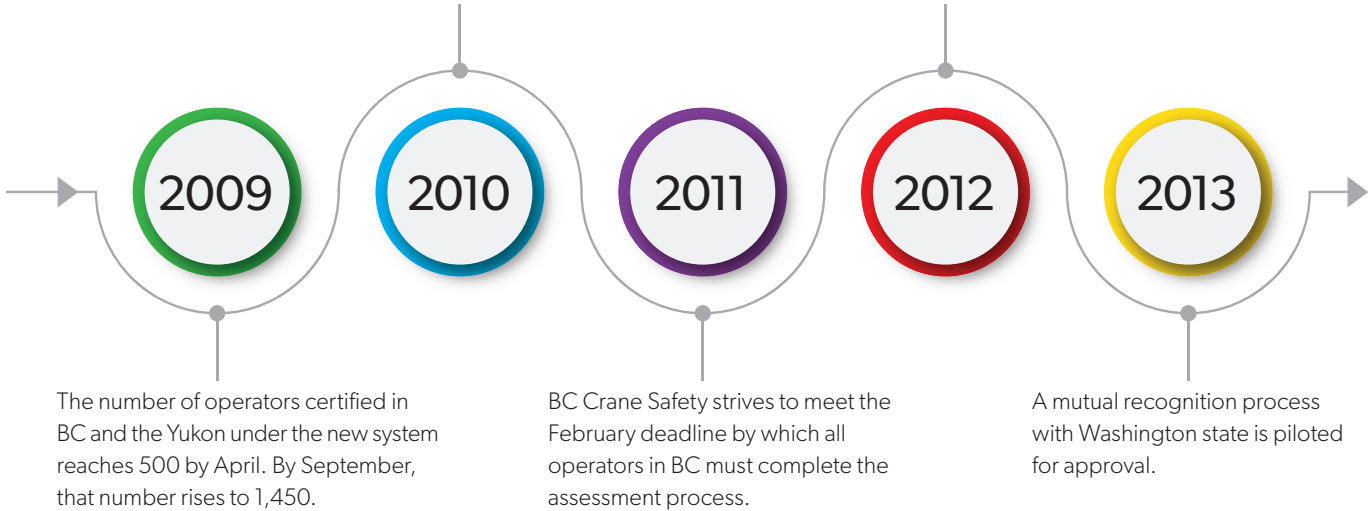
BC Crane Safety joins the expert board of ECOL/Esta to provide input into the establishment of an EU-wide standard and certification system. WorkSafeBC and BC Crane Safety co-host the first tower crane conference in more than a decade.

02

Certification Underway

Crane operator certifications reach 4,400 with almost 8,000 operators actively engaged in the assessment process. BC Crane Safety launches SkillRecord, an online logbook for operators to document their hours and experience.

More than 10,000 crane operators are certified by August. BC and Alberta agree to mutually recognize operator certifications. The Canadian Hoisting and Rigging Safety Council (CHRSC) begins work on a framework for a national certification standard.



04

Certification Excellence

BC Crane Safety has 11,877 active certified crane operators on record. A new Executive Director starts in August. Work to develop new standards for rigging and telehandler operations is stepped up.



Impact of the BC Crane Operator Certification Program

Spotlight on Lon

BC Crane Safety went to the IUOE Local 115 campus in Maple Ridge, BC to meet with Lon where he's finishing up his apprenticeship. Lon calls himself a mature student and "kind of an anomaly."

Ten years ago, he was working on boom trucks in the oil and gas industry. When he had a family he moved into a career as a glazier, eventually ending up in management. He has a degree in philosophy and studied environmental design. Now that his son is old enough to be out "doing his own thing" he wanted to get into doing specialized heavy lifts on crawler cranes.

Lon describes cranes as amazing, complex, phenomenal pieces of equipment. He enjoys every lift — the planning, the calculations, the communication, and the critical judgement calls that need to be made.

"To me it's like flying an airplane. You take these enormous objects and you can lift them up and put them into different places. It's like flying a big thing around that you wouldn't even think could be moved. It's really engaging and fascinating. And it's really exciting. You can sit for a long time and then when you're ready to do something it's like zero to sixty."

Lon says his background has given him strong communication skills that he finds essential to his career. In a trade so challenging and consequential, he sees what happens when people don't have these skills: "There's hostility and animosity. There's always a push/pull between you and the grounds crew.

If you can understand what they need and you can communicate in an effective manner it makes the job go a lot more smoothly."

And playing video games helps. Lon says, "I thank my years playing video games as a kid. I've always enjoyed operating equipment so that hand-eye co-ordination, hand-to-screen, translates into the real world."

Lon has some advice for anyone interested in a career in cranes. He recommends a reality check on the impacts to family life. "You're going to be away from your children and your family. Period. So ... can you or can you not realistically do that?"

And on the topic of critical decision-making:

"It's my experience in the field that people ask you to do ridiculous things all the time and it's your job to make really good, informed, safe decisions around that."



Lon at the controls at the IUOE Local 115 training campus in Maple Ridge. Roberta Sheng-Taylor photo.

BC's Unique Crane Operator Certification Program: Its Impact on Safety

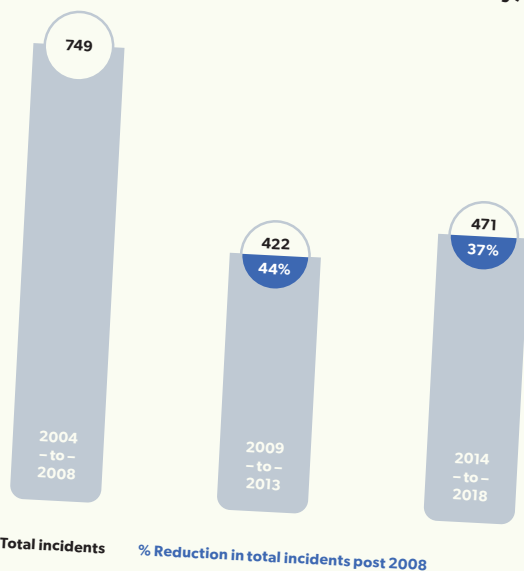
A crane operator certification program implemented in 2008 has had positive and measurable impacts on safety in the province.

Submitted by BC Crane Safety

To measure the impact of the [BC Crane Operator Certification] program, WorkSafeBC undertook a search of claim files to show the number of crane related time-loss claims between 2004 and 2018.

Says Fraser Cocks, BC Crane Safety's Director of Strategic Initiatives, "In comparing the two five-year periods after the start of the program's implementation in 2008, we find a significant drop in the number of workplace injury claims associated with classes of crane that require certification." Notably, the same finding did not appear when examining classes of crane that do not require certification, such as gantry and overhead cranes.

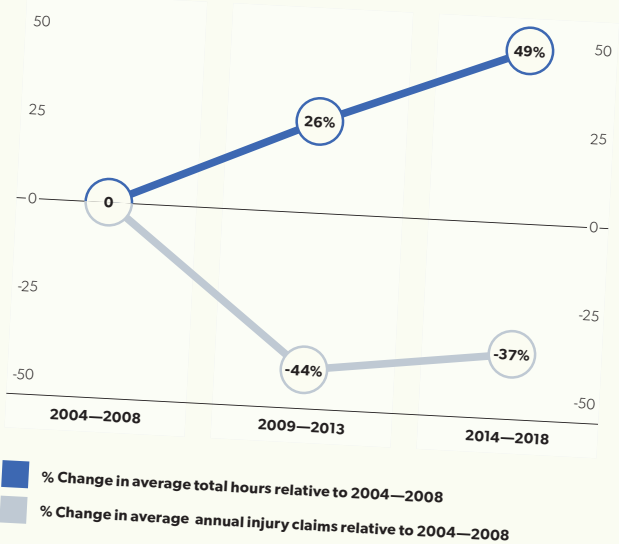
Reduction in Crane related Loss-Time Claims post certification program (certified cranes only)



Was the reduction due to a decrease in employment resulting from the 2008 financial crisis? A review of labour market survey data showed that the reduction in injury claims was not due to a decline in crane operator employment that might have arisen due to the 2007–2008 financial crisis. In fact, average total

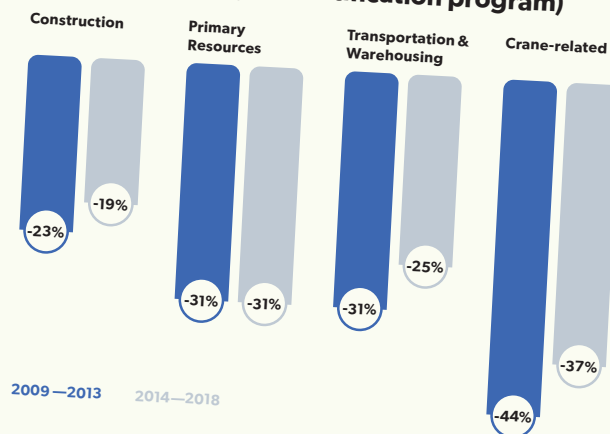
hours worked had almost doubled by the 2009–2013 period. The number of crane incidents declined quite dramatically while employment hours were substantially increasing.

Comparison of employment vs. injury trends — BC Crane Operators



There are many industries that use cranes. Was this a general trend? If so, factors other than the new certification program might account for these findings. A comparison of injury and employment trends within some of the industrial sectors that use cranes showed that, over the same five-year periods, these sectors...

Comparative reductions in Loss-Time Claims relative to 2004–2008 (post certification program)



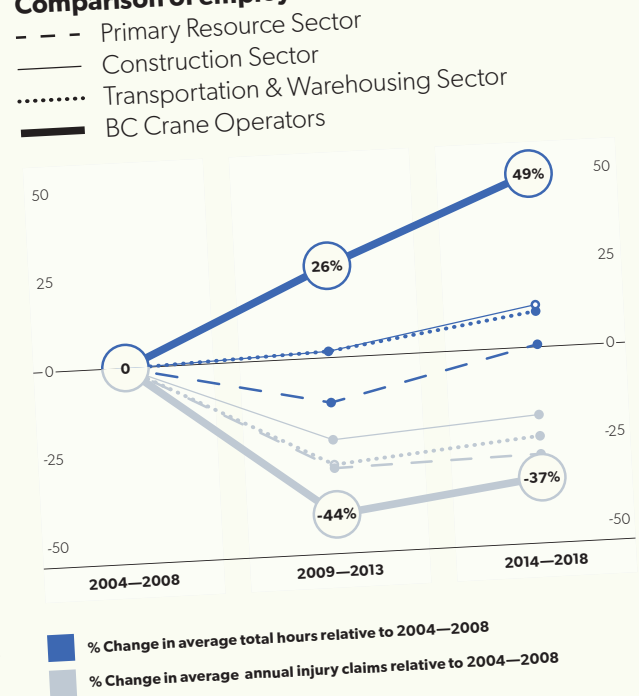
...also saw a decline in time-loss claims. Yet the reductions in crane-related injury claims surpassed the general reductions within these sectors by a notable margin.

Further examination of the data revealed that — as with crane operations — each sector saw a reduction in injuries despite an overall increase in total hours worked. However, in the Primary Resources sector, at least some of the initial reduction in injuries could be attributed to a decline in employment over 2009–2013.

Says BC Crane Safety Executive Director, Clinton Connell, “Looking at these comparisons, although independent efforts within these sectors to reduce injury claims had some success, we can clearly conclude that the general reduction of crane related injuries had more to do with the BC crane operator certification program than with those efforts.”

This article illustrates the impact of the BC Crane Operator Certification Program. It is an excerpt published in **Crane & Hoist Canada** January/February 2022 (pp.16–18).

Comparison of employment vs. injury trends:



Certification by the Numbers 2021

With the help of our assessment partners, Fulford Certification and the ITA (Industry Training Authority), we have issued more than 26,500 crane operator credentials. Even in this second year of the COVID-19 pandemic, there are more than 9,400 highly skilled certified crane operators working in BC and about 1,300 more people progressing through the system, working to earn their certificates every day.

In 2021, the numbers of certificates issued started to climb back up to pre-pandemic levels, testament to the hard work of assessors, trainers, supervisors, employers and the operators themselves who clearly recognize the value of certification.

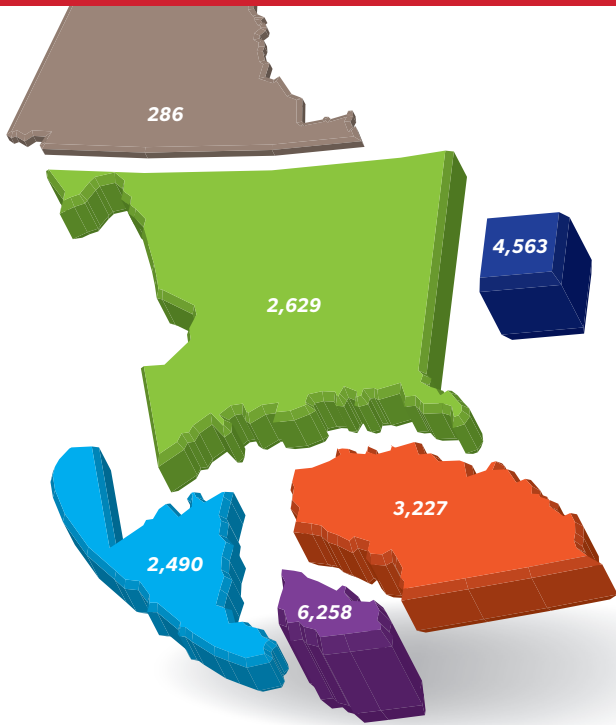
BC Crane Safety manages six levels of certification for 11 different crane classifications.

Full Scope means the person can operate the type of crane they were assessed on and any classified as being below that designation. There are no other restrictions.

Provisional is intended for trainees and apprentices. It allows the operator to gain experience under supervision until they get their Full Scope certification.

Limited Scope means that the operator is only permitted to operate a crane at a specific address for a specific employer. A change in employer means the operator needs a new certificate.

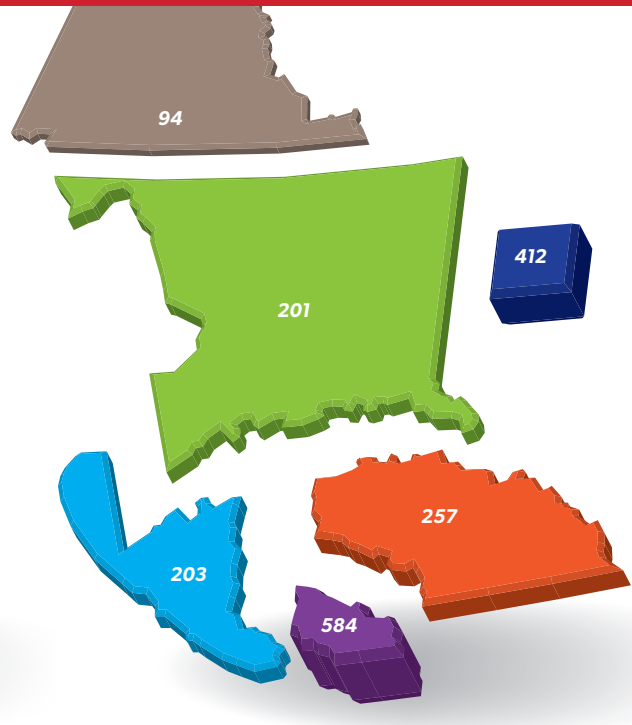
Crane Mechanic is intended to allow mechanics to operate a crane for the purpose of repair. No commercial lifts are allowed.



Total Active Registrations by Region — 2021

- Vancouver Island
- Interior
- Lower Mainland
- Northern BC
- Yukon
- Other Jurisdictions

In 2021, BC Crane Safety had 19,453 active crane registrations on record.



New Registrations by Region — 2021

- Vancouver Island
- Interior
- Lower Mainland
- Northern BC
- Yukon
- Other Jurisdictions

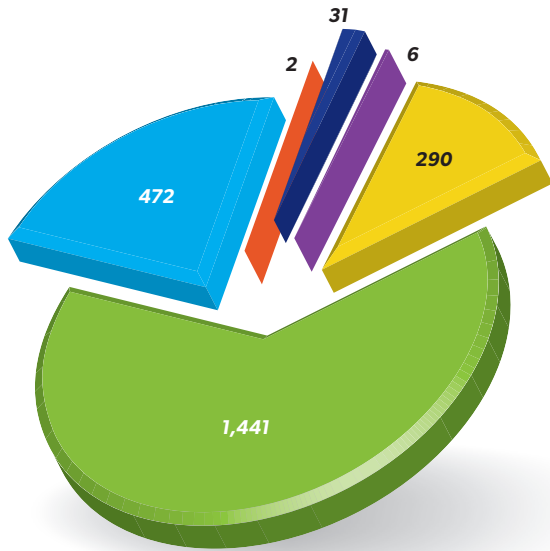
Crane operations touch all parts of BC, the Yukon and beyond. In 2021, BC Crane Safety staff processed 1,751 registrations, approximately 8% more than in 2020.

Letter of Permission is meant to allow a prospective operator to find out if operating a crane seems like a good fit before going on to get a Provisional for training. Direct supervision is required at all times.

Credential Recognition means that an operator from outside BC has had their out-of-province credential assessed and has met the requirements for recognition by BC Crane Safety.



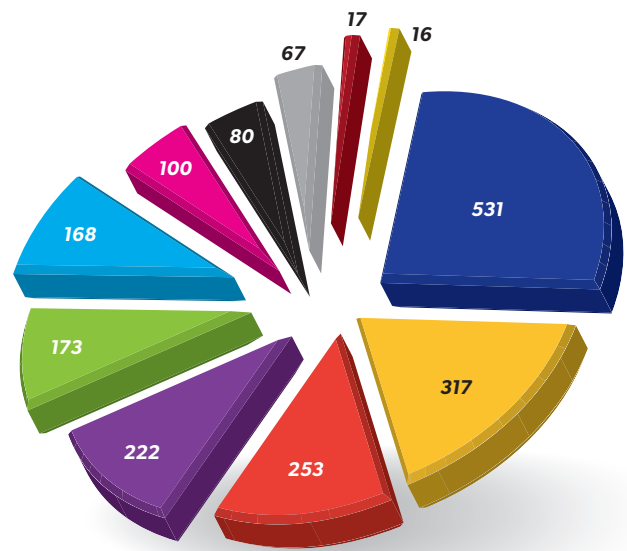
Certification by the Numbers 2021



Certifications by Type — 2021

- Full Scope
- Provisional
- Limited Scope
- Crane Mechanic
- Letter of Permission
- Out of Province Credential Recognition

In 2021, BC Crane Safety and its certification partners issued 2,242 crane operator credentials across all levels and classifications, more than double the number in 2020.



Certifications by Crane Type — 2021

- Folding boom 10 tonnes and under
- Tower
- Mobile
- Folding boom 22 tonnes and under
- Self-erect tower
- Stiff boom 40 tonnes and under
- Mobile hydraulic 80 tonnes and under
- Mobile hydraulic 20 tonnes and under



PART 3 – 2021 HIGHLIGHTS

Resources and Programs

A key part of our mandate is to support safe and effective crane operations in BC. We scour the world for best and better practices and adapt them for BC. We work with collaborators like crane operators, owners, and employers, Canadian and international regulators, unions, trade associations and educators. This approach ensures that the resources we develop are current, proven and useful.

A full list of downloadable resources is available on the BC Crane Safety website at www.bccranesafety.ca on the “Resources” page. Here are some of the resources and programs we developed this year:

2021 Crane and Mobile Equipment Inspection Initiative

The 2021 Crane and Mobile Equipment Inspection Initiative is a collaboration between BC Crane Safety and WorkSafeBC that is geared to help identify and eliminate unsafe work practices and equipment hazards. This initiative has resulted in resources designed to support safer workplaces.

Safe Work Practice resources providing guidance on:

- Roles and responsibilities related to tower crane assembly and dismantling.
- Roles and responsibilities of supervisors of operators in training.
- Top climbing tower cranes.

Tower/Self-Erect Crane Pre-Assembly/Dismantling checklists

BC Crane Safety, in co-operation with WorkSafeBC and The City of Vancouver, ran a pilot project in Vancouver regarding the assembly and dismantling of tower cranes. The city now requires a completed Tower/Self-Erect Crane Pre-Assembly Requirements checklist to accompany the permit application.

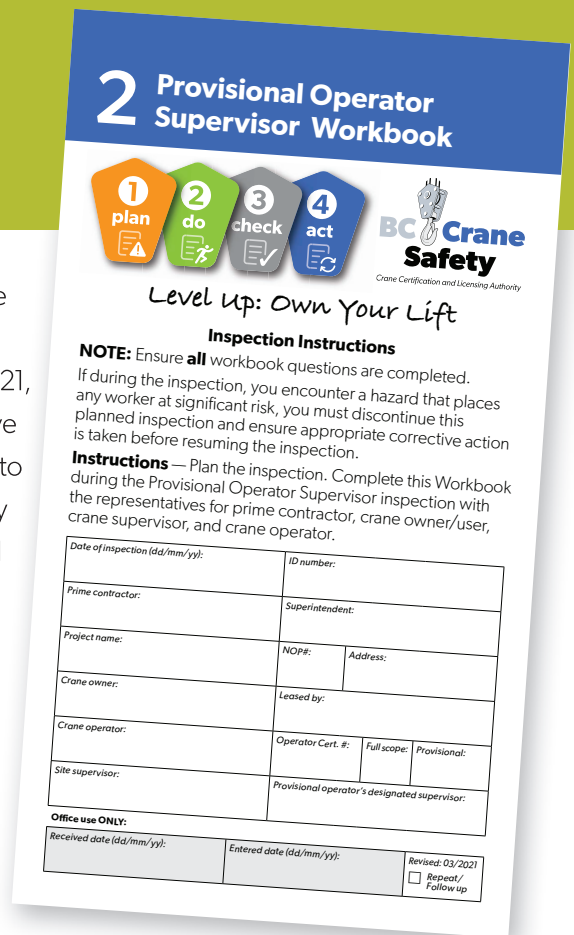
In response to the tragic incident in Kelowna in July 2021, the checklists have been distributed to every municipality in BC for practical use by the tower crane assembly and dismantling community. Our stakeholders have told us that permitting processes and conditions have improved since the use of these checklists became permanent in the City of Vancouver.

Level Up: Own Your Lift Self-Inspection Program

This series of checklists and support materials is designed to help employers, operators, supervisors and other stakeholders prepare for WorkSafeBC inspections. These are currently available for tower cranes. Similar resources for mobile cranes are in development. Workbooks include:

- Crane Employer Site Inspection Questions
- Provisional Operator Supervisor Questions
- Crane Assembly Supervisor Questions
- Preventative Maintenance Questions
- Crane Operator Qualification Questions

These workbooks have been widely distributed across all regions of the province and have proven to be effective in providing information on the regulatory requirements for crane-related occupations and for worksites using tower cranes.



Standards Development

Tower Crane Assembly and Dismantling Community of Practice

In July 2021 a tragic tower crane incident in Kelowna, BC resulted in five fatalities and one serious injury. It has had a devastating impact on the whole community and well beyond. BC Crane Safety offers sincere sympathy for the suffering of the families, friends and co-workers of those whose lives were lost:

- Eric Stemmer, construction worker
- Patrick Stemmer, construction worker
- Jared Zook, construction worker
- Cailen Vilness, construction worker
- Brad Zawislak, who was at work in a neighbouring office building

As the investigation into the incident is ongoing at the time of this report, we are taking proactive measures to improve tower crane safety, especially during the assembly and dismantling phases.

BC Crane Safety is reaching out to all stakeholders who participate in the assembly and dismantling of tower cranes in our province. As the next phase in the ongoing Tower Crane Safety Initiative, we have formed

a Tower Crane Community of Practice group to discuss next steps moving forward. Based on initial conversations following the Kelowna incident, four distinct recommendations have so far been proposed for discussion and possible use:

- Certification – Establish minimum qualification standards for the assembly/dismantling community.
- Assembly/Dismantling Community Registry (BC Crane Safety).
- Formalized Reference-checking procedure (BC Formwork Association).
- Expansion to the NOP (Notice of Project) procedure (WorkSafeBC).

The crane sector prides itself on its proactiveness, its professionalism, and levels of engagement with the Occupational Health and Safety regulator. Our aim is to help flesh out industry-driven change that results in meaningful workable solutions, without waiting for the long process of multiple investigations, inquiries, and litigation to conclude. BC Crane Safety asks for anyone interested in participating in this working-group or can provide SMEs (subject matter experts) contact us to be included.

Please forward your contact information and details of industry experience to:

info@bccranesafety.ca

Telehandler Operator Standards

BC Crane Safety stands with many regions throughout the world advocating for regulated standards for telehandler operations. This class of equipment has evolved rapidly in recent years in terms of technology and capacity. In the absence of enforceable standards for safe operations, this has resulted in serious and sometimes fatal incidents.

BC Crane Safety submitted a request for a regulatory review to WorkSafeBC in 2020. While the schedule has not been formalized yet, it is hoped that this review will be ready for stakeholder consultation in 2022 so that a corresponding certification program can be developed in 2023.





Rigging Standards

BC Crane Safety has consulted with stakeholders across Canada over many years to develop national standards for professional riggers and signal-persons. A draft standard was approved for use in BC by the Crane Rental Association of Canada (CRAC) and vetted in Richmond, BC at the Tower Crane Conference in 2019.

Now we are engaging in further consultation with Ontario to harmonize our standards with a view to a future national certification program.

We are also exploring the possibility of achieving a shared standard with the European Crane Operator License Foundation (ECOL).

We have had discussions at the federal level regarding the creation of a specific National Occupational Classification (NOC) for Rigging.

There is a saying among tower crane operators: "It takes two to operate a crane." All crane operators need to have confidence in the skills of the riggers they work with for everyone's safety. A national certification program would make that possible across the board and a NOC code for Rigging would clarify responsibilities for safety below the hook.

Promoting the Crane Operator Profession

Part of BC Crane Safety’s mandate is to promote crane operations as an attractive career choice. We work to support new entrants as they join the crane trades by promoting a clear path to success and diversity in the workplace.

In June 2021, Crane Hot Line published the results of an American study led by a specialized construction insurance company. Through a survey of 150 crane professionals, it identified the top three safety risks to the crane industry as:

1. A lack of talented operators in the workforce.
2. Equipment issues.
3. On-the-job incidents.

The regulatory system in the United States is different from Canada’s, but anecdotal evidence suggests that we face the same issues along with an aging workforce.

That’s why encouraging diversity and the promotion of professional crane career options is so important. As Jake Morin, Construction Program Executive at ProSite Insurance says, “Operating a crane requires a tremendous amount of mechanical skill and understanding of numerous engineering principles.” Morin continues, “It can be can be an incredibly rewarding and enriching career path. We need to come together as an industry to find ways to communicate this value to students and young professionals who otherwise wouldn’t pursue a career in construction.”¹

In BC, we collect information about gender and age, but not about ethnicity or cultural heritage. Here’s what we know about the number of women and young people working with cranes or entering the profession.

Active registrants by age and gender 2007—2021

MALE	AGE							Totals by district
	19 & under	20—29	30—39	40—49	50—59	60 & over	Unknown	
Lower Mainland	11	782	1714	1316	1013	579	726	6141
Island	2	228	610	515	420	364	306	2445
Interior	8	266	726	611	585	509	473	3178
North	6	335	638	454	388	252	509	2582
Yukon	9	61	81	60	28	14	3	256
Other Jurisdictions	7	336	1413	1174	638	440	509	4517
Total Males	43	2008	5182	4130	3072	2158	2526	19119

FEMALE	AGE							Totals by district
	19 & under	20—29	30—39	40—49	50—59	60 & over	Unknown	
Lower Mainland	0	35	48	19	9	3	3	117
Island	1	9	20	8	2	3	2	45
Interior	2	11	12	10	7	1	6	49
North	0	14	19	7	7	0	0	47
Yukon	2	11	9	4	4	0	0	30
Other Jurisdictions	0	7	22	11	5	1	0	46
Total Females	5	87	130	59	34	8	11	334

New certifications by age and gender 2021

MALE/FEMALE	AGE						Totals by type
	19 & under	20—29	30—39	40—49	50—59	60 & over	
Full Scope Male	16	350	532	299	154	43	1394
Full Scope Female	0	4	3	2	2	0	11
Provisional Male	16	350	532	299	154	43	1394
Provisional Female	0	15	18	4	0	0	37
Totals	32	719	1085	604	310	86	2836

New registrations by age and gender 2021

MALE/FEMALE	AGE						Totals by gender
	19 & under	20—29	30—39	40—49	50—59	60 & over	
Male	28	452	576	362	237	50	1705
Female	3	23	14	5	1	0	46
Totals	31	475	590	367	238	50	1751

[1] Crane Hot Line. Lack of Qualified Talent is the Biggest Threat to the Crane Industry. June 2021.

Active full scope certifications by age and gender 2008—2021

MALE	AGE							Totals by district
	19 & under	20—29	30—39	40—49	50—59	60 & over	Unknown	
Lower Mainland	0	265	975	882	729	470	753	4074
Island	1	72	305	279	227	263	322	1469
Interior	0	86	402	348	373	399	489	2097
North	4	172	429	289	266	184	271	1615
Yukon	0	5	14	14	7	4	2	46
Other Jurisdictions	0	37	174	114	70	45	49	489
Total Males	43	2008	5182	4130	3072	2158	2526	19119

FEMALE	AGE							Totals by district
	19 & under	20—29	30—39	40—49	50—59	60 & over	Unknown	
Lower Mainland	0	2	20	7	4	2	3	38
Island	0	1	8	1	1	1	0	12
Interior	0	3	3	5	4	1	5	21
North	0	8	11	3	4	0	0	26
Yukon	0	0	0	0	0	0	0	0
Other Jurisdictions	0	1	1	1	0	0	0	3
Total Females	0	15	43	17	13	4	8	100

What can we do to promote more inclusivity and a sustainable workforce of qualified professionals in the crane trades? We are exploring ideas and making connections with groups promoting careers in trades. Do you have a story of a strategy that has worked for you?

Please tell us about it!

Contact BC Crane Safety at info@bccranesafety.ca

GBA+

GENDER-BASED ANALYSIS PLUS

BC Crane Safety is participating in the federal Gender-Based Analysis Plan (GBA+). This program was created by Status of Women Canada to analyze how government policy shapes the experiences of women, men and non-binary people and their access to initiatives that might promote their participation in types of work from which they may feel excluded.

This will generate the information we need to continue to develop strategies to increase the attractiveness of crane operations to encourage more workforce diversity.



Promoting the Crane Operator Profession

Spotlight on Raquel

BC Crane Safety went to the IUOE Local 115 training campus in Maple Ridge, BC to meet Raquel and talk to her about her experiences on the way to becoming a full scope crane operator. As the only woman in her class, and one of few in the profession, she brings a unique perspective to the path to certification.

Raquel is working in Fort St. John in the oil and gas industry running all-terrain and rough-terrain mobile cranes. It hasn't always been easy breaking into the trade. Her persistence, ambition and strength of character are undeniable.

She has been an apprentice for three years. Her experience working with her father in residential construction during high school accustomed her to hard physical work. A few years after that, she got her start as a swamper moving rigs. Working outside in minus 40-degree temperatures, she saw the crane operators sitting in their heated cabs and thought to herself, "I want that."

But it wasn't easy to get opportunities. The prevailing culture was, as she puts it, "an old boys club" in that it was dominated by men who had known each other from childhood. She felt that she had to constantly prove herself in ways the other workers didn't.

That's why she decided to take her training at the IUOE. Joining the union, she feels, is the best way she can get equal pay, benefits, fair working conditions and opportunities for advancement. One of Raquel's top

priorities is to be able to support herself independently. With a new baby on the way, this is even more important to her than ever.

Even though Raquel knows that running cranes on the oil fields means long hours and long periods of time away from home and family, there are things that drive her to pursue her career. The money is a big part of it, but she also gets a lot of satisfaction from seeing "something come together. I like feeling a sense of accomplishment at the end of the day."

To anyone thinking of starting out on the path to becoming a crane operator she says the first step is to get a class one license. She says she didn't do herself any favours by waiting to feel "ready". In her words: "Get your class one.

Just do it. Quit waiting for the right moment. Take the opportunities. Don't hold yourself back.

What's the worst that can happen by trying something?"



Raquel at the controls on the simulator at the IUOE Local 115 Maple Ridge training campus. Roberta Sheng-Taylor photo.

PART 4 – LOOKING AHEAD

As we look forward, we are committed to continuing to provide innovative and helpful resources for the stakeholders we serve. We are dedicated to:

- Building a more transparent credentialing process to support career planning and an ongoing skills measurement and evaluation system using an updated Skills Passport.
- Offering growing options for operators who want to work abroad.
- Developing programs and resources that will make it easy for operators to maintain and update their credentials when there are changes in technologies, regulations and work processes.

Here are some examples of initiatives we have underway.

Limits of Approach – “Plan for 10”

“Plan for 10” is an evaluation and planning program under development in co-operation with WorkSafeBC and BC Hydro. It will be an online skills evaluation system (working in tandem with the SkillRecord Passport software pilot project) which provides assurance, by qualified reviewers, that operators are competent and knowledgeable when working around electrical hazards such as overhead power lines. In a planned pilot project, operators will be able to show their up-to-date skills, knowledge and ongoing commitment to safe and professional operations.

ISO/IEC 17024 Accreditation

BC Crane Safety is working toward becoming an accredited certification body under ISO/IEC 17024 through the Standards Council of Canada. What does that mean? The ISO is the International Standards Organization which sets global standards for many industries and activities, including certification. It is a complex process during which all aspects of the certifying body’s operations are scrutinized through a

comprehensive audit and measured against the best and most reliable certification programs in the world.

For BC Crane Safety, and for the crane owners, employers, operators, and other stakeholders we serve, that means greater opportunities for labour mobility across industries as well as provincial and international borders. It enhances all the work we do to make sure our certification program moves into the future by expanding the world-class distinction it has today.



SkillRecord Passport Software Project

BC Crane Safety is working with software developers to update our online SkillRecord and Credential Check systems. The new SkillRecord Passport will provide several benefits:

- For trainees, an explicit list of required practical skills will empower them to seek out relevant practice opportunities and encourage more interaction with experienced mentors.
- For reviewers, clear evaluation criteria will make it faster and easier for busy tradespeople to assess competency in the field, without paperwork.
- For employers, jobs each worker can competently perform are clearly highlighted making it easier to assign appropriate work and training, while maintain records of operators' ongoing evaluation.
- For regulators, previously unavailable data will be captured, providing useful insights and driving improvements as well as providing detailed information on a crane operators' skills development history.
- For entrants into skilled trades, modern tools will help make careers in trades more appealing to young people, connecting with them in ways they have come to expect.
- For experienced operators, maintaining these records will provide evidence of maintaining their knowledge and skills as professional crane operators.



PART 5 – OUR COLLABORATORS

Since BC Crane Safety was officially established in 2005, we have had the privilege of consulting with hundreds of generous individuals who have volunteered their time and expertise to the development of BC's crane operator certification system. They have been crane operators, owners, contractors, labour representatives, industry associations, suppliers, manufacturers and employers along with a host of other experts.

Without their contributions, we would not be where we are today. We thank everyone who has given their valuable time and knowledge to develop our world-class certification scheme.

In addition, we would like to extend our special thanks for the contributions of some of our key collaborators including:

- WorkSafeBC
- Yukon Workers' Compensation Health & Safety Board
- Fulford Certification
- Industry Training Authority (ITA-BC), soon to become Skilled Trades BC
- Employment and Social Development Canada
- International Union of Operating Engineers (IUOE)
- Engineers and Geoscientists BC (EGBC)
- Technical Safety BC
- BC Ministry of Jobs, Tourism and Skills Training
- City of Vancouver
- Metro Vancouver
- Standards Council of Canada (SCC)
- Canadian Standards Association (CSA)
- Crane Rental Association of Canada (CRAC)
- Canadian Hoisting and Rigging Safety Council (CHRSC)
- US Occupational Health and Safety Administration (OSHA)
- European Crane Operators Licence (ECOL)
- European Association of Abnormal Transport and Mobile Cranes (ESTA)





Yukon Workers' Compensation Health and Safety Board

Our Partners in the Yukon

It is an exciting time in the Yukon and there are growing opportunities for people from all walks of life to start a highly rewarding career as a crane operator. Many industries are booming in the territory including mining, residential and commercial construction, road-building and other major infrastructure projects. The demand for trained, certified crane operators is increasing rapidly and will continue in the future. Yukon Workers' Compensation Health and Safety Board (YWCHSB) is focused on setting new operators up for success and is collaborating with BC Crane Safety to produce more training supports such as new orientation and educational videos.

The YWCHSB and Yukon crane-using industries have a longstanding co-operation with BC Crane Safety. Yukon crane operators are certified under the same system as BC crane operators. This automatically provides Yukon crane operators the same national and international mobility as BC crane operators.

The Yukon-BC relationship has been going strong since the beginning. The YWCHSB has played an indispensable role in the development of certification standards, the certification model itself and holds a non-voting position on the BC Crane Safety Board of Directors.

Both jurisdictions instituted changes to their respective Occupational Health and Safety Regulations in tandem, with parallel requirements for demonstrating competency and certification. This is the basis for the legal requirement for crane operator certification and also the foundation for mutual agreement on the use of the same standards and assessment system in both BC and the Yukon.

As the certification scheme was developed and piloted, the YWCHSB participated every step of the way. In fact, the first competency assessments delivered under the certification program were conducted in the Yukon Territory in 2008.

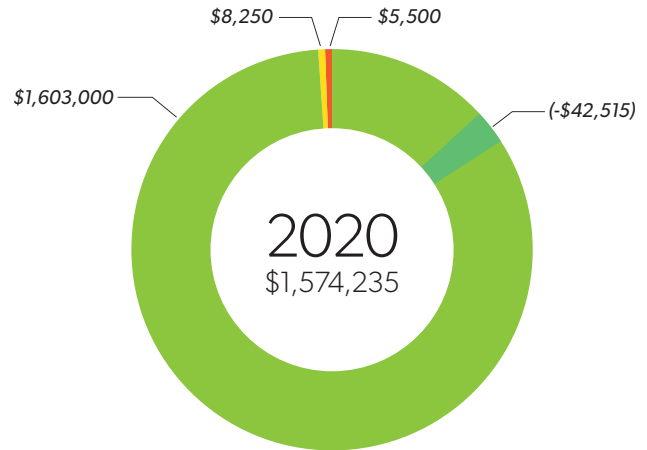
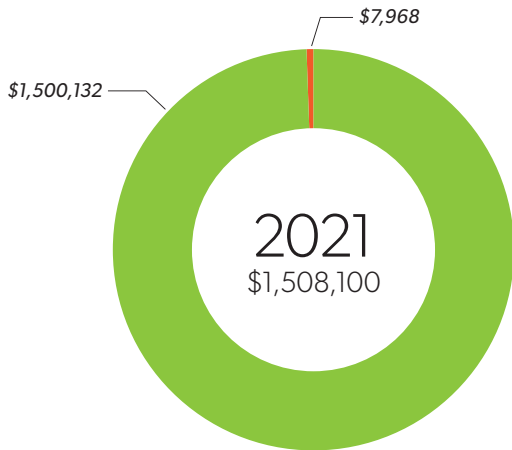
Because of their co-operative agreement, crane operators and employers in both BC and the Yukon have access to a streamlined career path and the support to get the information, resources and training they need. BC Crane Safety has an administrative and oversight role, maintaining the certification standards and supports such as the registration system and online logbooks. Theoretical and practical training is provided through the Yukon University and competency assessments are delivered by BC-based Fulford Certification.

The shared goal of the YWCHSB and BC Crane Safety is, and has always been, to promote safe crane operations, operator mobility and industry efficiency.

PART 6 – FINANCIAL STATEMENTS

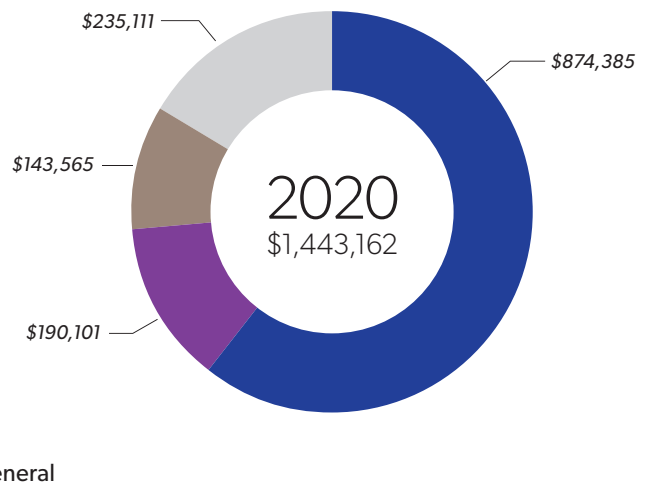
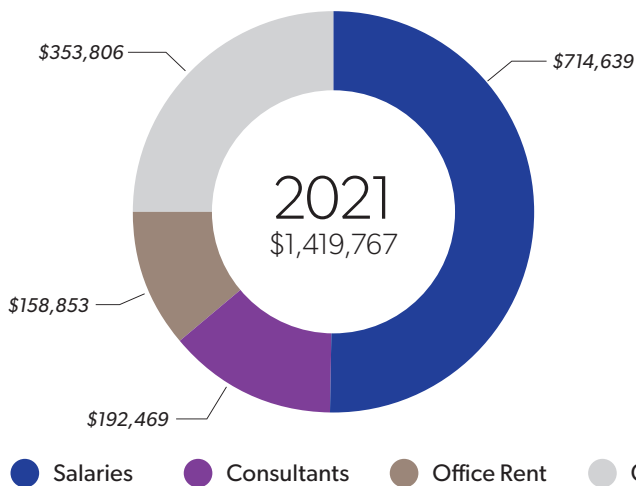
BC Association for Crane Safety, 2021 Fiscal Year in Review

Funding — Operations



- WorkSafeBC
- Temporary Wage Subsidiary (Federal)
- Industry Training Authority
- Ministry of Employment, Workforce Development and Labour (tint = refund)

Expenditures — Operations



- Salaries
- Consultants
- Office Rent
- General

Audited financial statements can be viewed at: www.bccranesafety.ca/about/year-end-reports







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