

# Best Principles for Managing COVID-19 Risks



# Best Principles for Managing COVID-19 Risks

## Table of Contents

	Page No.
Notice to Reader	3 - 4
Module 1: Overview	5 - 10
Module 2: Healthy + Productive Sites	11 - 31
Module 3: Attitudes and Behaviours: Winning Commitment	32 - 46
Module 4: Enabling Technologies	47 - 86
Module 5: Reinventing Our Processes	87 - 133
Module 6: Engaging the Whole Team	134 - 147
Module 7: Offsite Wellness	148 - 163



# Best Principles for Managing COVID-19 Risks

## Notice to Reader

Best Principles for Managing COVID-19 Risks is a guideline ("guideline") developed through a consensus process approved by the Construction Owners Association of Alberta ("COAA").

Volunteers from member companies came together under the umbrella of the Healthy + Productive Sites Committee, shared multiple interests and viewpoints to achieve a reasonable consensus that advances this general guideline for industry.

The document is a *general* guideline and COAA strongly recommends obtaining third party advice to complement and support more detailed implementation specific to your organization.

This guideline is subject to periodic review; readers should ensure they are referencing the most current version. Suggestions for improvement are welcome and can be submitted directly to COAA at [admin@coaa.ab.ca](mailto:admin@coaa.ab.ca).

Copyright © 2020

.....Construction Owners Association of Alberta.....



This guideline is provided without any representations, warranties, or conditions of any kind, express or implied, including, without limitation, implied warranties or conditions concerning this document's fitness for a particular purpose or use. In publishing this document, COAA and the committee members do not accept responsibility arising in any way from any and all use of or reliance on the information contained in this document. COAA and the committee members are not rendering professional or other services for or on behalf of any person or entity, nor undertaking to perform any duty owed by any person or entity to another person or entity. The information in this guideline is directed to those who have the appropriate degree of experience to use and apply its content.

Copyright © 2020

Construction Owners Association of Alberta

The information in this publication may be reproduced, in part or in whole and by any means, without charge or further permission from the Construction Owners Association of Alberta, provided that due diligence is exercised in ensuring the accuracy of the information reproduced; that the Construction Owners Association of Alberta is identified as the source; and that the reproduction is not represented as an official version of the information, nor as having been made in affiliation with, or endorsed by the Construction Owners Association of Alberta.

Construction Owners Association of Alberta

800, 10123-99 Street NW Edmonton, Alberta Canada T5J 3H1

T: 780.420.1145

E: [admin@coaa.ab.ca](mailto:admin@coaa.ab.ca)

[www.coaa.ab.ca](http://www.coaa.ab.ca)

# Managing COVID-19 Risks

## Module 1

### Overview

Version 1.3

December 2020



# Managing COVID-19 Risks

## Background

When COVID-19 reached Alberta in early 2020, there were only generic procedures and virtually no practical experience in dealing with a pandemic on construction sites and in heavy industrial operations. Given the “essential” designation of the industry, owners and contractors were committed to finding a safe path forward.

COAA members immediately recognized the need for real-time sharing of company experiences and insights for working safely. Seven webinars were organized in March and April; four were discussion and question sessions facilitated by COAA Directors, and three were information presentations by partner organizations.

Out of the webinars grew the idea to share the various company practices that were rapidly evolving, plus the experiences which made them more effective or less effective in various circumstances. Additionally, a task group of industry experts was assembled to distill the collected concepts and procedures into a cohesive outline for ease of use.



About a dozen documents were shared to the COAA COVID-19 page, which have now been added to the [COAA Library](#).

The documents were guidelines prepared by various COAA members for their particular circumstances; they were provided as a courtesy in unprecedented times as examples and idea-starters for the industry. They are not recommended or endorsed by COAA as best practices or even as appropriate for the circumstances of any other company. The various examples should be used by company representatives who have the appropriate degree of experience to evaluate, synthesize and adapt the content. The examples are provided as a courtesy, without any responsibility arising in any way from any and all use of or reliance on the information contained in the examples.

# Managing COVID-19 Risks

## Healthy + Productive Sites Task Group Charter

- *Inclusive:* engage all stakeholders
- *Time bound:* May – December 2020
- *Summarize work:* compile a “best principles” summary
- *Share & communicate:* presentations, webinars, website



# Managing COVID-19 Risks

## Best Principles Modules

1. Overview
2. Healthy + Productive Sites
3. Attitudes and Behaviours: Winning Commitment
4. Enabling Technologies
5. Reinventing Our Processes
6. Engaging the Whole Team
7. Offsite Wellness





# Managing COVID-19 Risks

## Module 2

# Healthy+Productive Sites

Version 1.3

December, 2020



# Module 2 - Introduction

## Healthy + Productive Sites

COVID-19 Response plans should:

- be developed to meet or exceed **health** guidelines and procedures while maintaining or improving **productivity**

*take advantage of (negative) disruption to  
implement positive change*

- include effective strategies for mitigating the effects of COVID-19 on **health+productivity** in the short term while facilitating long-term recovery



# COVID-19 Response Principles

## Healthy + Productive Sites

- 2-1 Integrated within Safe + Productive operations
- 2-2 Fit for duty
- 2-3 Pre-project training
- 2-4 COVID coaching
- 2-5 COVID risk management
- 2-6 Planning projects to maximize off-site work
- 2-7 Planning projects to minimize out-of-province workers



**1-1 Integrated within Safe + Productive operations**

- 1.Focus on safety and productivity together

**1-2 Fit for duty**

- 1.Physical considerations
2. Mental considerations

**1-3 Pre-project training**

1. Training practices and procedures
2. Industry standards

**1-4 COVID coaching**

1. Workforce knowledge
2. Workforce compliance
3. Health + productive standards

**1-5 COVID risk management**

1. Possible scenarios
2. Ramping up or ramping down safeguards

**1-6 Planning projects to maximize off-site work**

1. Modularization

**1-7 Planning projects to minimize out-of-province workers**

1. Localized workforce
2. Local suppliers

# Integrated

## Healthy + Productive Sites

### 2-1 Integrated within Safe + Productive Operations:

- Focus on safety and productivity together
- Develop safe work procedures to address COVID-19
- Control, maintain, and possibly increase productivity of projects



### Safety:

- Establish site exposure control to mitigate COVID-19 spread
- Plan for prompt isolation in case of exposure to COVID-19
- Increase the cleaning frequency
- Limit size of gatherings
- Apply surface decontamination in work areas
- Check Indoor Air Quality (IAQ) and conduct ventilation analysis

OHS resources focusing specifically on COVID-19.: <https://ohs-pubstore.labour.alberta.ca/covid19-resources>

### Productivity:

- Manage remote workforce
- Analyze the loss of productivity
- Minimize workflow interruption

# Fit for Duty

## Healthy + Productive Sites

### 2-2 Fit for duty:

- Physical considerations
- Mental considerations



### Physical considerations:

- Mandate workers to refrain from coming to work if they are symptomatic of/exposed to COVID-19
- Remove or check personnel exhibiting symptoms
- Provide new PPE (e.g., masks, face shields)
- Measure/evaluate body temperature of employees daily using touchless thermometers to approve/deny access to site
- Provide/perform daily pre-access screening questionnaires

Government of Alberta COVID-19 self-assessment tool for Albertans: <https://myhealth.alberta.ca/Journey/COVID-19/Pages/COVID-Self-Assessment.aspx>

### Mental considerations:

- Address concerns about the welfare of employees
- Mitigate widespread fear among employees

Resource for employers and supervisors to support worker's mental resiliency by Energy Safety Canada:

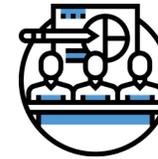
[https://energysafetycanada.com/\\_Resources/Safety-Bulletins/2020/Covid-19-Mental-Health-Resources-Issue-05-2020](https://energysafetycanada.com/_Resources/Safety-Bulletins/2020/Covid-19-Mental-Health-Resources-Issue-05-2020)

# Pre-project Training

## Healthy + Productive Sites

### 2-3 Pre-project training:

- Evaluate training practices
- Update training procedures
- Implement industry standards



- **Identify and implement standard safety conditions**
- **Update safety training procedures**
- **Provide training in the use of new equipment/instruments**
- **Provide training in the use of new technology**

WHO COVID-19 training resources (Online training): <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/training/online-training>

# COVID Coaching

## Healthy + Productive Sites

### 2-4 COVID coaching:



- Evaluating workforce knowledge
- Encouraging workforce compliance
- Enforcing healthy productive standards
- Recognize that, in addition to the usual inertia about wearing PPE, there could be an element of resistance to vaccinations, masks, etc. which may require extra communications



- **Identify new operational strategies and update operations plans**
- **Inform employees of new modes of operating**
- **Employ/consult occupational hygienists**

# Risk Management

## Healthy + Productive Sites

### 2-5 COVID Risk Management

- Plan for possible scenarios
- Labour shortage and absenteeism
- Interruptions of material delivery
- Ramping up or down safeguards



- Regularly monitor for public health/government announcements
  - Routinely monitor compliance with COVID-19 public health guidelines
  - Address/mitigate the impact of employee refusal to returning to work
  - Plan for higher levels of absenteeism due to sickness, self-isolation, or concern of contamination
  - Assess the effect of medical leaves on workflow
  - Assess the risk of late or halted deliveries of material from suppliers
- 
- Delay/accelerate crowded labour-intensive work (if possible) when facing higher/lower COVID-19 cases in community

Government of Canada risk mitigation tool for workplaces/businesses operating during the COVID-19 pandemic: <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/guidance-documents/risk-informed-decision-making-workplaces-businesses-covid-19-pandemic.html>

# Maximize Off-site Work

## Healthy + Productive Sites

### 2-6 Planning projects to maximize off-site work

- Focus on modularization
- Contactless operations
- Remote communications



- **Increase contactless operations using new technology (e.g., virtual site inspection)**
- **Enhance internet infrastructure of organization to support connectivity**

# Minimize Out-of-Province Workers

## Healthy + Productive Sites

### 2-7 Planning projects to minimize out-of-province workers

- Focus on localized workforce
- Focus on local suppliers



- **Investigate local labour, resource, and material availability**
- **Identify at-risk suppliers that cannot be easily replaced**
- **Allow for early ordering and delivery of materials if the supply chain is at risk**
- **Create shorter, more flexible supply chains (e.g., localizing supply chains)**

# Additional Resources

## Healthy + Productive Sites

COAA industry sharing pages: [Working through the Challenges](#)

### Module 4 – Enabling Technologies

- Outlines digital tools for contact tracing, health tracking and worker assessments.
- These tools will continue to be valuable for health and other uses including work face planning, productivity measurement and asset tracking.



1. **COAA industry sharing web page - documents are guidelines prepared by various COAA members as they responded to their particular COVID-19 circumstances; they are provided as a courtesy in unprecedented times as examples and idea-starters for the industry.**
2. **Module 3 Enabling Technologies - outlines digital tools for contact tracing, health tracking and worker assessments; these tools will continue to be valuable after COVID-19 . Many tools will find other uses such as work face planning, productivity measurement and asset tracking.**



# Managing COVID-19 Risks

## Module 3

# Attitudes and Behaviours: Winning Commitment

Version 1.3  
December, 2020



# Module 3 – Introduction

## Attitudes & Behaviours: Winning Commitment

COVID-19 Response plans should include:

- effective strategies for improving the attitudes and behaviours of the workforce
- Commitment by all parties to effectively implement short-term response plans and long-term recovery plans



# Module 3 – Best Principles

## Attitudes & Behaviours: Winning Commitment

- 3-1 The compelling “why” message
- 3-2 Investing in culture and skills for healthier sites
- 3-3 Designing the work environment to encourage desired behaviours
- 3-4 Maintaining consistency on and off-shift



## **2-1 The compelling “why” message**

- Leadership messages
- Communication
- Shared goals

## **2-2 Investing in culture and skills for healthier sites**

- Personal protective behaviour (PPB)
- Collaborations
- Accountability

## **2-3 Designing the work environment to encourage desired behaviours**

- Public health regulations/recommendations
- Jobsite facilities
- Signages and posters
- Unauthorized access to jobsite

## **2-4 Maintaining consistency on-shift and off-shift**

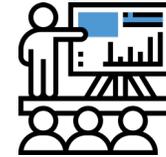
- Healthy workplace and healthy accommodations
- Consistent level of care and attention, day and night, to reinforce positive personal attitudes

# The Compelling “Why”

## Attitudes and Behaviours: Winning Commitment

### 3-1 The compelling “why” message:

- Focus on leadership messages
- Communication is key
- Shared goals are clear to all parties



- **Keep employees engaged (through newsletters, group video conferences, etc.)**
- **Establish regular communication and coordination among project teams**
- **Make sure all project parties involved are working together in the best interests of the employees, communities, and project completion**

**Courtesy of a major turnaround contractor: Leader's Guide 01 COVID-19 Leaders Package 2020 May 06:**

<https://www.coaa.ab.ca/app/uploads/01-COVID-19-Leaders-Package-2020-May-06.pdf>

**Beyond coronavirus: The path to the next normal, March 23, 2020 | Article:**

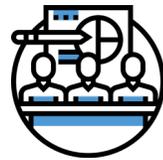
<https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/beyond-coronavirus-the-path-to-the-next-normal>

# Culture and Skills

## Attitudes and Behaviours: Winning Commitment

### 3-2 Investing in culture and skills for healthier sites:

- Encourage personal protective behaviour (PPB)
- Promote Collaborations
- Require accountability



- **Encourage workers to take meals in private vehicles or open areas**
- **Avoid unnecessary sharing of tools**
- **Prevent at-risk practices/behaviours**
- **Promote collaboration among employees (e.g., establish virtual online spaces so that while employees are working remotely, they are not alone)**
- **Promote employee accountability (e.g., emphasize contributions rather than visibility)**

# Designing the Work Environment

## Attitudes and Behaviours: Winning Commitment

### 3-3 Designing the work environment to encourage desired behaviours:

- Include public health regulations/recommendations
- Improve jobsite facilities
- Provide signage and posters
- Prevent unauthorized access to site



- **Update health policies and protocols to include regulations/recommendations from public health bodies**
- **Execute regular job-site cleaning and disinfection/sanitation**
- **Facilitate the process of disease detection and self-isolation**
- **Provide signage and posters promoting basic illness prevention hygiene procedures (e.g., cough/sneeze etiquette, hand washing guidelines)**
- **Increase hand-washing facilities/locations (e.g., additional temporary washing stations)**
- **Secure and monitor working areas to prevent unauthorized access**

**Courtesy of the Calgary Construction Association: Pandemic Planning guide:**

<https://www.coaa.ab.ca/app/uploads/04-CGYCA-PANDEMIC-PLANNING-FOR-THE-CONSTRUCTION-INDUSTRY-4.0-2020-May-01.pdf>

# Designing the Work Environment

## Attitudes and Behaviours: Winning Commitment

### 3-4 Maintaining consistency on-shift and off-shift

- Healthy workplace and healthy accommodations
- Consistent level of care and attention, day and night, to reinforce positive personal attitudes



## Camp Accommodation Resources

Alberta Health Services has set up a website for industrial sites guidance: <https://www.albertahealthservices.ca/topics/Page17162.aspx>.

An additional Transportation is available [Transportation Guidance 2020 Jul 22](#).

British Columbia Centre For Disease Control & British Columbia Ministry of Health have developed a Provincial COVID-19 Task Force and developed the following guidelines for industrial camps [COVID-19-guidelines-industrial-camps](#).

Users are encouraged to check these websites frequently for updates because the guidelines are evolving as more is learned.

# Additional Resources

## Attitudes and Behaviours: Winning Commitment

COAA industry sharing pages: [Working Through the Challenges](#)

### Module 4 – Enabling Technologies

- Outlines digital tools for contact tracing, health tracking and worker assessments
- These tools will continue to be valuable for health and other uses including workforce planning, productivity measurement and asset tracking.



1. **COAA industry sharing web page** - documents are guidelines prepared by various COAA members as they responded to their particular COVID-19 circumstances; they are provided as a courtesy in unprecedented times as examples and idea-starters for the industry.
2. **Module 3 Enabling Technologies** - outlines digital tools for contact tracing, health tracking and worker assessments; these tools will continue to be valuable after COVID-19 . Many tools will find other uses such as work face planning, productivity measurement and asset tracking.



# Managing COVID-19 Risks

## Module 4

# Enabling Technologies

Version 1.3

December, 2020



# Module 4 – Introduction

## Enabling Technologies

- COVID-19 provided a catalyst on the journey to ‘remote working’ and distant management of construction. This ‘new normal’ will not significantly reverse after the pandemic is over.
  - Most companies had embarked on technologies to facilitate ‘remote working’ before 2020
- Some workers may distrust many of the ‘big brother’ technologies and worry that COVID-19 provided an excuse to implement the technologies
  - Will these intrusions into privacy be reversed after COVID-19? Should they be, considering other benefits they provide?
  - Many Gen Z are more comfortable and accepting of technology-privacy boundary blur
- The COVID-19 technology adoptions have generic benefits that will endure after the pandemic.
  - Advancements in productivity, planning, information, safety and quality
  - Advancement of ‘Digital Twin’ and management of data and information



In one COAA member company, IT had introduced TEAMS software over a year earlier with only marginal uptake by the employees. When the company switched to remote working on March 13, 2020, uptake of the software was instant and organic, by the end of the following week all company meetings had switched to TEAMS and use was universal. Adoption was ‘organic’ in the sense that no additional formal roll-out or Management of Change (MOC) was undertaken – people figured it out on their own by trial-and-error or by informal training and peer assistance.

The digitization of engineering, planning and project execution has been a long journey that pre-dates COVID-19. However, in many cases, the pandemic has both accelerated the uptake of digital methods/tools and normalized their use. With limits on travel across jurisdictions and to/from site more information is shared virtually and digitally. Printing of paper drawings and plans and discussing in close proximity on site is less common during the pandemic, and this trend is likely not to reverse substantially after the pandemic is over.

Many digital tools for contact tracing, health tracking and worker assessments will continue to be valuable for other communicable sicknesses after COVID-19. These same tools will even find other similar uses such as work face planning, productivity measurement and asset tracking.

Many of these technologies can also be utilized to help with remote work safety and performance tracking. However, these technologies and systems can raise privacy concerns and some workers are concerned with ‘big-brother’ issues. Adoption of monitoring technologies and storing of people’s health and symptom information, as well as monitoring location and close contacts, may not be as accepted by workers and labour organization after the pandemic has passed. If the data is only used in an aggregated and anonymized way, where the privacy of the individual is protected, people may be more accepting. Time will tell.

# Module 4 - Best Principles

## Enabling Technologies

- 4-1) Health checks & screening
- 4-2) Health & hygiene training
- 4-3) Meetings & communications
- 4-4) Touchless procedures



As discussed, COVID-19 has both accelerated the use of existing technologies and encouraged the development of new technology use to address specific COVID-19 risks and issues on construction sites.

This chapter discusses enabling technologies within the following four topics:

1. Health checks and worker screening
2. Health & Hygiene training
3. Meetings & Communication
4. Touchless procedures (limiting of close person-person contact and virus spread)

# Health checks & screening

## Enabling Technologies

### 4-1) Use of apps to improve screening efficiency and reliability

- Numerous apps exist or are being developed in order to speed-up screening and have ready information across company locations
- Technology implementations:
  - Implement add-ons to your existing Enterprise systems (i.e. SAP)
  - [Aduro](#)
  - [CrowdBlink Protect](#)
- Considerations: Temperature screening may not be reliable (i.e. outdoor workers in hot or cold locations; protection of information and security; administration for maintaining accurate user databases



Some companies have now incorporated POCT (Point of Contact Testing) rapid testing for pre-screening for site access (typically before first visit to site or at the beginning of shift change). However, due to costs and logistics a self screening 'questionnaire' is in use at virtually all office and construction sites. These range from informal self assessments to more formal assessments that are reviewed prior to location/site entry.

The best principle is that these screening and self-assessments use an app or software to ensure consistency, documentation, traceability and privacy. Many companies have developed or modified existing solutions that can be access and updated on portable devices to optimize convenience and ensure timely updating and record keeping.

Like many shops, airports and service locations, companies have utilized temperature screening for site access. At least one COAA company has noted that this screening can have limited value as it does not effectively correlate to sickness (both false positives and false negatives) especially for workers that are outdoors and/or wearing lots of PPE and work clothing. More sophisticated (and expensive) solutions such as those used at airports and train stations may be more accurate, but these are expensive and mostly applicable to indoor settings.

# Health checks & screening (continued)

## Enabling Technologies

### 4-1) Best Principle – Use of apps to improve screening efficiency and reliability

- One company has implemented a ‘Workforce Availability Tool’ as a front-end to their existing Enterprise software
- This app performs health checks and screening and allows for quick updates on employee availability due to sickness and possible exposure
- Protects privacy and allows leaders to know status and work location of employees
- Information: Location of work, health status, symptoms, possible exposure, vacation or personal time
- Could be equally effective for non-COVID physical and mental health issue management



The workforce availability tool can be a 'passive' tool that is periodically updated when a worker's status changes or can actively push out reminders at a desired reoccurrence frequency.

In some cases, the tool can automatically trigger other steps to the health screening protocol including close contact tracing or contacting confidential medical follow-up.

# Health checks & screening (continued)

## Enabling Technologies

### ‘Workforce Availability Tool’ Status Options:

OPTION	DESCRIPTION	OPTION	DESCRIPTION
Working - Work from Home/ Alternative Work Location	Healthy - working from home or an alternative work site	Non-COVID-19 Illness - Working	Ill, COVID-19 not suspected - minor symptoms, able to work from home or an alternative work site
Working - Regular Work Location	Healthy - working from a regular work location	Non-COVID-19 Illness - Not working	Ill, COVID-19 not suspected - unable to work
Illness - COVID-19 symptoms - Working	In isolation and reporting potential symptoms - able to work from home or an alternative work site - COVID-19 Not confirmed	Confirmed COVID-19 - Working	Confirmed case of COVID-19 - minor symptoms, able to work from home or an alternative work site
Illness - COVID-19 symptoms - Not working	In isolation and reporting potential symptoms - unable able to work - COVID-19 Not confirmed	Confirmed COVID-19 - Not working	Confirmed case of COVID-19 - unable to work
Self-Isolation - Working	In isolation due to contact to confirmed or suspected COVID-19 contact - able to work from home or an alternative work site	Vacation or Scheduled Time Off	On approved vacation, flex time or regular scheduled time off
Self-Isolation - Not working	In isolation due to contact to confirmed or suspected COVID-19 contact - unable to work	STD/LTD or Paid/Unpaid Leave	On short term disability, long term disability or paid/unpaid leave



In the screening tool above, a change in status will automatically trigger a notification to the company's third-party health support and will initiate the process for reporting to regulators and provincial health authorities. The worker's leader also receives an automatically generated notification.

# Health checks & screening (continued)

## Enabling Technologies

Best Principle: Effective / efficient contact tracing and worker location monitoring through technology

- It is important to be able to easily identify who attends your sites each day, including monitoring their locations while on site and having future access to the data – this supports contact tracing and monitoring social distancing
- Technology implementation: [Wake Cap](https://www.constructiondive.com/news/hard-hat-device-facilitates-social-distancing-contact-tracing/580822/); <https://www.constructiondive.com/news/hard-hat-device-facilitates-social-distancing-contact-tracing/580822/>
- Cost-saving opportunity: Devices could be drawn from a common pool for use across multiple contractor teams or multiple owner sites as projects start and finish
- Considerations: Privacy issues and protection of data; require intrinsic safety for operating sites
- Other benefits: Identify bottlenecks on construction sites to improve productivity



Health screening tools and technologies are also effective for tracing worker health and availability. The tools can be used to monitor other health issues as well.

These tools have applications in remote working safety as well as tracking the location, availability and productivity of the work force.

### Connected Worker Technology:

In addition to devices that provide location monitoring, the technology is rapidly improving, enabling smart devices such as phones or watches to be used for real-time worker monitoring beyond location. Smart watches allow for a safe, hands-free approach.

Benefits of these technologies:

- Allows for remote monitoring/management of adherence to safety protocols. Particularly important during COVID.
- Use of wearables can increase operational efficiencies / productivity improvements, as you can pinpoint bottlenecks or areas of inefficiency. Workers can also communicate to others through these devices.
- Newer generation of employees are more tech-savvy; can be empowered through higher efficiencies garnered through data-driven improvements.
- Human/machine connectivity is possible as technologies improve.
- Can monitor worker vitals such as heart rates or identify if a workers have had an incident (i.e. a fall).

There are possible privacy issues if the data is used at the individual level. However, if set up and used appropriately to protect privacy, provides important aggregate data to spot productivity issues or safety issue.

DATA SHOULD BE AGGREGATED AND ANONYMIZED.

Example of connected worker technology: SensorUp (<https://sensorup.com/>)

# Health & hygiene training

## Enabling Technologies

### 4-2) Best Principle – Implementation of enhanced PPE and sanitizing measures

- Since the start of COVID-19, workers have been required to use additional PPE such as masks and gloves. This is in addition to the implementation of enhanced sanitizing measures.
- This additional PPE may itself present a safety challenge if not used properly.
- Enhanced PPE and sanitizing may also affect worker productivity and ultimately worker engagement. **Simple technologies can help.**
- Examples of such technologies are:
  - Anti-fog glasses, such as 3M SF400-series safety glasses
  - Anti-fog cloths for glasses and safety glasses
  - Ear-savers for masks, as are used in other industries such as the dental/medical
  - Long-lasting surface protection for high-touch areas



There are very simple technologies out there that provide increased safety to workers, with the added benefits of improving the worker’s comfort and productivity.

It is also important to train workers with respect to enhanced PPE or sanitizing technologies to ensure they are used properly.

Links to the technology examples are as follows:

Anti-fog safety glasses – there are numerous styles available with anti-fog: [https://www.3mcanada.ca/3M/en\\_CA/worker-health-safety-ca/products/~PPE-Safety-Solutions/Personal-Protective-Equipment/Protective-Eyewear/Specialty/Safety-Glasses/?N=5005311+5011378+8711017+8720539+8720549+8729704+8767329+3294529206&rt=r3](https://www.3mcanada.ca/3M/en_CA/worker-health-safety-ca/products/~PPE-Safety-Solutions/Personal-Protective-Equipment/Protective-Eyewear/Specialty/Safety-Glasses/?N=5005311+5011378+8711017+8720539+8720549+8729704+8767329+3294529206&rt=r3)

Anti-fog cloths – both disposable and reusable cloths are available to support office and field-level needs: [https://www.fogblocker.com/?gclid=EAIaIQobChMIscyUx6i87QIVpB-tBh2ZwAviEAAYASAAEgLT3vD\\_BwE](https://www.fogblocker.com/?gclid=EAIaIQobChMIscyUx6i87QIVpB-tBh2ZwAviEAAYASAAEgLT3vD_BwE)

Ear-savers for masks – these are inexpensive and effective to improve mask comfort when workers are required to always wear masks: [https://well.ca/products/happy-silicone-ear-savers-for-masks\\_191018.html](https://well.ca/products/happy-silicone-ear-savers-for-masks_191018.html)

Surface protection for high-touch areas – can be applied within office environments, camps, control rooms, and other common areas: <https://servicemasterclean.ca/services/protect-3-advance/>

# Health & hygiene training (continued)

## Enabling Technologies

### 4-2 ) Augmenting training experience through virtual reality / gaming

- Gaming is used for training in other sectors, including the Canadian military. [Recent article about the use of gaming training in the US for new construction recruits](#)

- [2018 article](#) from Canadian Occupational Safety: “

*You may never encounter that situation for two years on the job site... (but) it becomes your default behaviour to go through the correct series of things you were trained on rather than ‘I’ve never been in this situation before. What do I do?’ That’s when people panic; that’s when people get hurt.”*



The use of enhanced / virtual reality or gaming for safety training provides the following benefits:

- The opportunity to simulate high-risk / dangerous situations in a controlled environment – can see the consequences of a failure without having the unsafe/dire outcome.
- Can practice scenarios repeatedly, including situations that you may not encounter everyday, creating improved retention.
- More engaging, as people bring their whole body into the experience, versus watching training videos while seated.
- Higher knowledge retention due to hands-on training experience, where workers actually carry out the activity.
- Can be more efficient and cost-effective than setting up an elaborate training facility.
- Newer generation of employees are more tech-savvy and this form of training can be appealing to them.

Other references:

Blog that discusses gamified training for construction industry: <https://www.disprz.com/blog/gamified-training-for-construction-industry/>

“The reason our training programs turn out ineffective is because there is a huge gap between what the expected work is and what we train them on. Especially in an industry like construction, where health and safety are of utmost importance, the traditional classroom-based training approach is bound to have its limitations because they do not replicate the dangers and risks involved in the work.”

Article from Australia regarding use of gaming for training:

<https://www.safetysolutions.net.au/content/business/article/fail-safely-why-vr-is-a-game-changer-for-safety-training-628676980#:~:text=VR%20allows%20real%2Dlife%20hazards,industries%20like%20mining%20and%20construction.>

# Meetings & communications

## Enabling Technologies

### 4-3) Best Principle – Technologies for remote meetings, collaboration, training and appointments

- Prior to 2020, companies were adopting virtual meeting tools and software for training, collaboration and business planning; COVID has accelerated adoption of these technologies
- In addition to the standard functionality of remote meeting software such as Zoom and Teams, some of these tools have additional functionality, including:
  - Built-in planners; file-sharing; white-boarding; sticky notes and other brainstorming activities; polling and voting; breakout rooms; forums to pose questions and interact
- Example: [Klaxoon](#)
- In addition to the obvious advantage of non-contact and remote communication, these software solutions offer many other advantages to in-person meetings:
  - Costs, anonymity, real-time tabulation, audit trail, ease of documentation, etc.
  - Inclusion of all participants; reduced risk of domination by a small number of participants



It is expected that remote work will continue for the foreseeable future. For some companies, the pandemic has changed the way many companies will do business going forward. Therefore, collaborative tools and technologies that allow for remote meetings, collaboration and training are very important in order to maintain the collaboration required for any projects - especially the large, complex projects we typically see in the industrial sector.

These same tools allow for easy and frequent communication to a broad audience, as is required during the pandemic. Easy and frequent communication supports the effective roll-out of new safety protocols. The same tools can also support improving worker productivity, as data and lessons-learned can be shared to a broad audience in close to real time.

The planning and management of projects, from inception to construction, involve collaboration and constant communication, including interactive planning sessions. Having the ability to whiteboard and use sticky notes, as we traditionally do throughout the course of project planning and development, allows for close collaboration to continue even if people are not physically together. This may even allow for increased engagement and participation, at a reduced cost, as people do not need to spend time traveling and can participate from different locations (across Alberta, across Canada, globally).

Meetings and collaboration sessions can be recorded and archived for future reference. This can aid in preparing more accurate meeting minutes and action logs.

Some of the remote meeting technologies also allow for private breakout rooms. These technologies are now also being used for contract negotiations or dispute resolution – situations that have previously required in-person meetings.

Online meeting technologies also support worker health, including mental health. This includes the ability to book remote consultations with doctors or nurses, as well as meetings with psychologists or support groups to assist with improved mental health.



# Meetings & communications (continued)

## Enabling Technologies

### 4-3) Best Principle – Managing the Virtual Work Place

- Employees and workers are ‘onboarded’ without physically meeting their new employers and fellow colleagues
- IT/IS systems must be functional and easily installed on non-company hardware and devices
- Effective and secure VPN (Virtual Personal Networks) are required to ensure that remote workers are not introducing cyber risks to the company
- Employees access to hardware with required capabilities will vary across the business and internet speed and access varies significantly across different geography and networks



For many COAA companies the headquarters and regional offices remained completely or partially shut-down in 2020. In some instances the IT/IS help resources shifted from an in-person model to fully remote and virtual. In these cases hardware upgrades and repair is severely hindered or non-existent. Employees become responsible for adapting and purchasing their own hardware and devices as well as physically supporting these devices.

As new employees or workers are hired and on-boarded, material has to be delivered virtually and the integration of people into the norms, cultures and expectations of the company and work-site become far more difficult. Training and onboarding material should be reviewed and modified to account for remote delivery. Written text content should be augmented with photos, visual diagrams and audio/visual content whenever possible.

All workers should be encouraged to interact with their cameras and screens turned on whenever possible to ensure the most effective delivery of visual queues and to ensure maximum understanding and engagement in training. Leaders and trainers should expect the audience to be less engaged and less motivated to ask questions – leaders/trainers will have to actively reach out to the audience and individuals receiving the information to confirm understanding and the feeling of inclusion.

# Touchless Procedures

## Enabling Technologies



### 4-4a) Best Principle – Reduce the number of people needed on site through technology

- There are many reasons why we need to be on site in addition to direct construction:
  - i.e. to resolve engineering and construction issues; for inspections; for quantity surveillance; etc.
- Technology implementation: [RealWear remote hands-free headset, where many can see through one set of eyes](#)
- Considerations: Connectivity required on sites; security of data transmission; require intrinsic safety for operating sites
- Other benefits: Can collaborate with a broader group in a cost-effective way; overall opportunity to reduce costs if less full-time non-manuals are required on site



As with the 'Connected Worker Technology' discussed in the Health Checks & Screening Best Principle #2, there are technologies that work with smart devices which enable touchless procedures.

Energy sector company Total provides a case study with respect to the use of 'RealWear'.

Particularly for greenfield applications, tablets and smart phones make it easy to live-stream field-level activities so fewer people need to be present to witness.

# Touchless Procedures (continued)

## Enabling Technologies

### 4-4b) Best Principle – Use robots or other technologies

- In order to effectively measure progress, workers must validate completed work through field walks; technologies exist that can replace the need for field walks and inspections, including at heights or in confined spaces
- Some technologies may also be used to complete repetitive or injury-prone construction activities
- Technology implementation examples: Robots (such as Spot the robot dog); drones; autonomous vehicles
- Considerations: Start-up costs; security of data; site configuration and budgets would dictate which technologies may work best; require intrinsic safety for operating facilities; pilot projects advised
- Other benefits: Longer-term productivity measurement; gather historical information; **use data for development and use of a plant ‘Digital Twin’**



### Articles and Online Resources:

<https://www.newswire.ca/news-releases/pomerleau-first-in-the-world-to-use-spot-robot-on-construction-site-810872693.html>

<https://www.bostondynamics.com/spot>

<https://candrone.com/>

<https://www.therobotreport.com/how-construction-companies-save-money-boost-revenue-robots/>

### Robots:

- Robots can assist with social distancing by completing repetitive, injury prone construction work can also be beneficial in tight spaces, allowing for social distancing requirements to be met while more work can continue
- Robots can also improve construction efficiencies they can learn and adjust, be put in service for long periods allowing for more production per day

### Drones:

- Drones can also be used for construction activities, such as to tie rebar.
- Drones are also currently used for inspections, including at heights or in confined spaces.
- Drones can take photos and scans for progress tracking and material integrity checks.

### Autonomous vehicles:

- Can be used for earthmoving activities, where machines can work 24/7, manned by a single operator.
- Can be used in operating facilities such as mines, as Suncor has implemented.

# Touchless Procedures (continued)

## Enabling Technologies

### 4-4c) Best Principle – Bringing it all together: The use of 3D imaging and ‘Digital Twin’

- The Digital Twin and use of 3D data management is a trend supporting the use of AWP construction management adoption
- These concepts can be utilized to minimize site exposure and the value is further demonstrated during the COVID-19 pandemic
- Data and 3D imaging should be seen as an ‘asset’ that can add value and certainty through a facility construction and operation lifecycle
- Example: [VEERUM](#)



The concept of AWP (Advanced Work Packaging/planning) has recently been understood to be an emerging best practice for ensuring predictable and successful outcomes in projects of many different sizes and complexity.

The 'digital twin' including the corresponding 3D and virtual data models can be utilized as effective remote communication and visualization platforms to replace site visits and 'walk-downs' by SMEs and experts on site. This in-turn will limit the person/person exposure risks on site and further advance the familiarity, use and value of these emerging technologies and tools.

# Touchless Procedures (continued)

## Enabling Technologies

### Digital Twin Example #1

- Laser scanning imaging shows error in pipe/flange location vs 3D design model
- Problem detected in the fabrication shop and avoid site re-work
- Provides 'touchless solution' to find and resolve design and construction issues

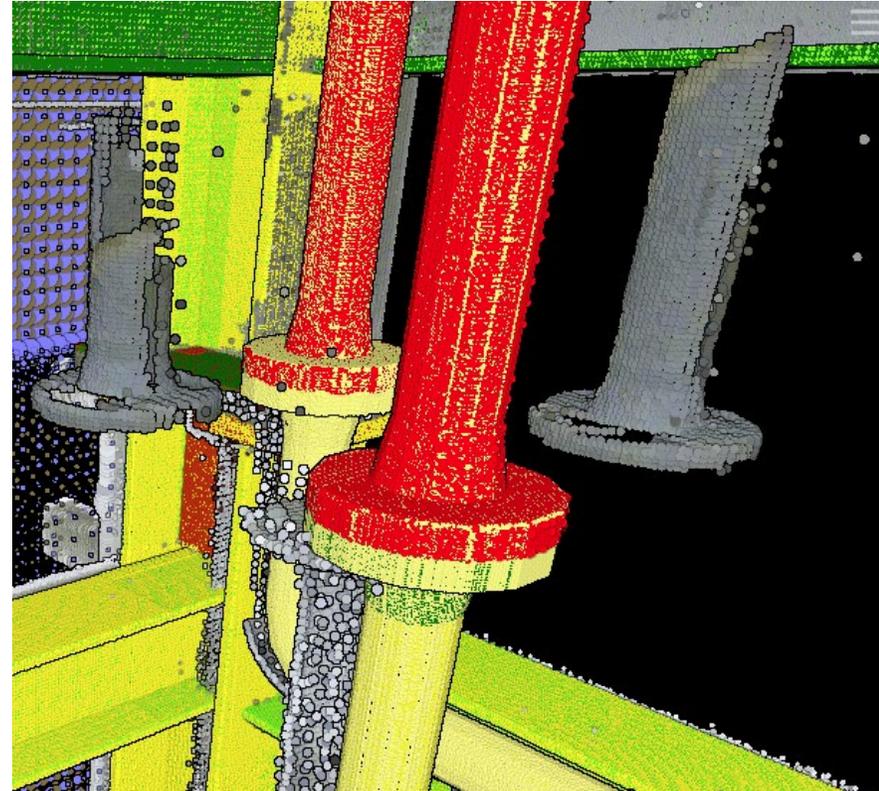
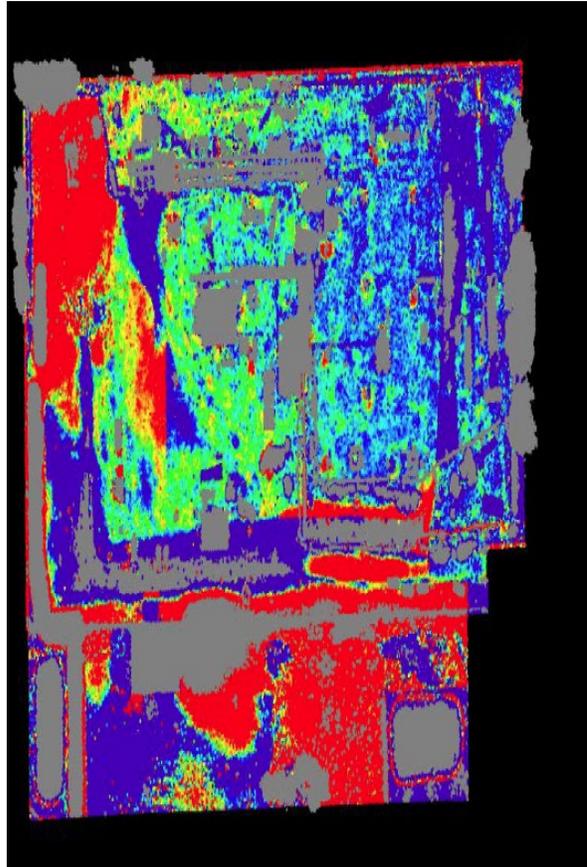


Image courtesy of TC Energy and used with permission.

In the example shown on this slide, one COAA company utilized 3D laser-scanning, 3D modelling and Digital Twin analysis techniques to virtually connect different pre-fabricated modules to find mistakes without visiting the fabrication site. This avoided the costly and relatively higher risk activity of physically maneuvering the modules together in the fab-shop or manually measuring and calculating on-site. In addition to finding potential quality issues earlier, these virtual checks eliminate the need for human on-site exposure to covid and other safety hazards.

# Touchless Procedures (continued)

## Enabling Technologies



### Digital Twin Example #2

- Heat map from drone imaging quickly shows locations and amount of cut and fill on a job site
- Avoids some on-site surveying and saving time & money
- Provides ‘touchless solution’ for surveying which can be used on an ongoing to validate installed quantities and productivity

Image courtesy of TC Energy and used with permission.



Various other digital analysis techniques such as the cut and fill imaging on this slide – allow for drone data capture and remote analysis and reporting.

# Touchless Procedures (continued)

## Enabling Technologies

### Best Principle – Digital Twin Example #3

- Fabricated modules can be connected ‘virtually’ to:
  - Gain information early
  - Find potential quality and re-work issues
- Alleviates requirement to physically connect modules in the fabrication yard or on the construction site in order to find issues
- Only physical connection happens on site, providing ‘touchless solution’ at the fabrication yard

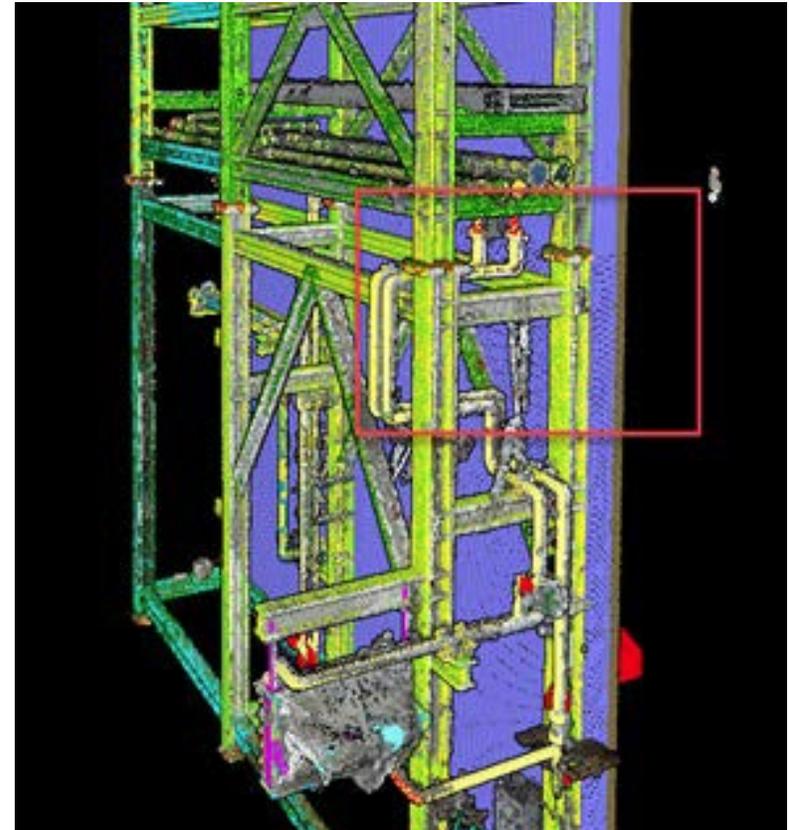


Image courtesy of TC Energy and used with permission.

In addition to the avoidance of Covid exposure/transmission risks, these virtual connection techniques reduce other safety HSE risk exposure on site.

# Challenges with Technology Implementation

## Enabling Technologies

- Corporate governance – may not allow for addition of technologies onto networks; speed of implementation could be impeded
  - COVID-19 proof: The entire industry pivoted to working from home quickly, so implementation can be rapid if there is a need – leverage this principle to continue implementing technologies
- Cyber security and cyber risks
- Data protection and personal privacy
- Cost – can't implement everything; need to determine the best technologies to achieve your safety requirements and overall company goals



With respect to Cybersecurity, there are numerous risks that companies must be aware of and protect against, particularly in the wake of more technology use. This includes ensuring systems are secure while employees are accessing systems remotely from their homes.

There could also be increased risks of cyber attacks during the pandemic.

Companies should consider engaging a cyber security consultant to assess cyber risks. Companies should also consider implementing cyber insurance, if not already in place.

# Construction's Post-COVID Technology Opportunity

## Enabling Technologies

June 10, 2020 article – Commercial Daily News from Canada ConstructConnect entitled ‘Inside Innovation: Construction's Post-COVID Technology Opportunity:

*“Leading engineers and contractors are using 4D and 5D simulation to replan projects and reoptimize schedules. Integrated digital-twin solutions are being developed to be used end to end, from project concept to commissioning. And contractors are looking to online channels for monitoring their employees’ well-being through apps, ordering construction materials, managing scarce resources more accurately, and maintaining cash flow.”*

*“Building in controlled environments makes even more sense in a world that requires close management of the movement and interaction of workforces”. “Such rationale further strengthens the case for off-site construction, beyond the existing quality and speed benefits.”*

*“Digital technologies have been on the agenda for a while, but the current disruption is moving them to the top, with contractors and wider project teams seeing first-hand the benefits in efficiency, co-ordination, and their ability to work remotely.”*

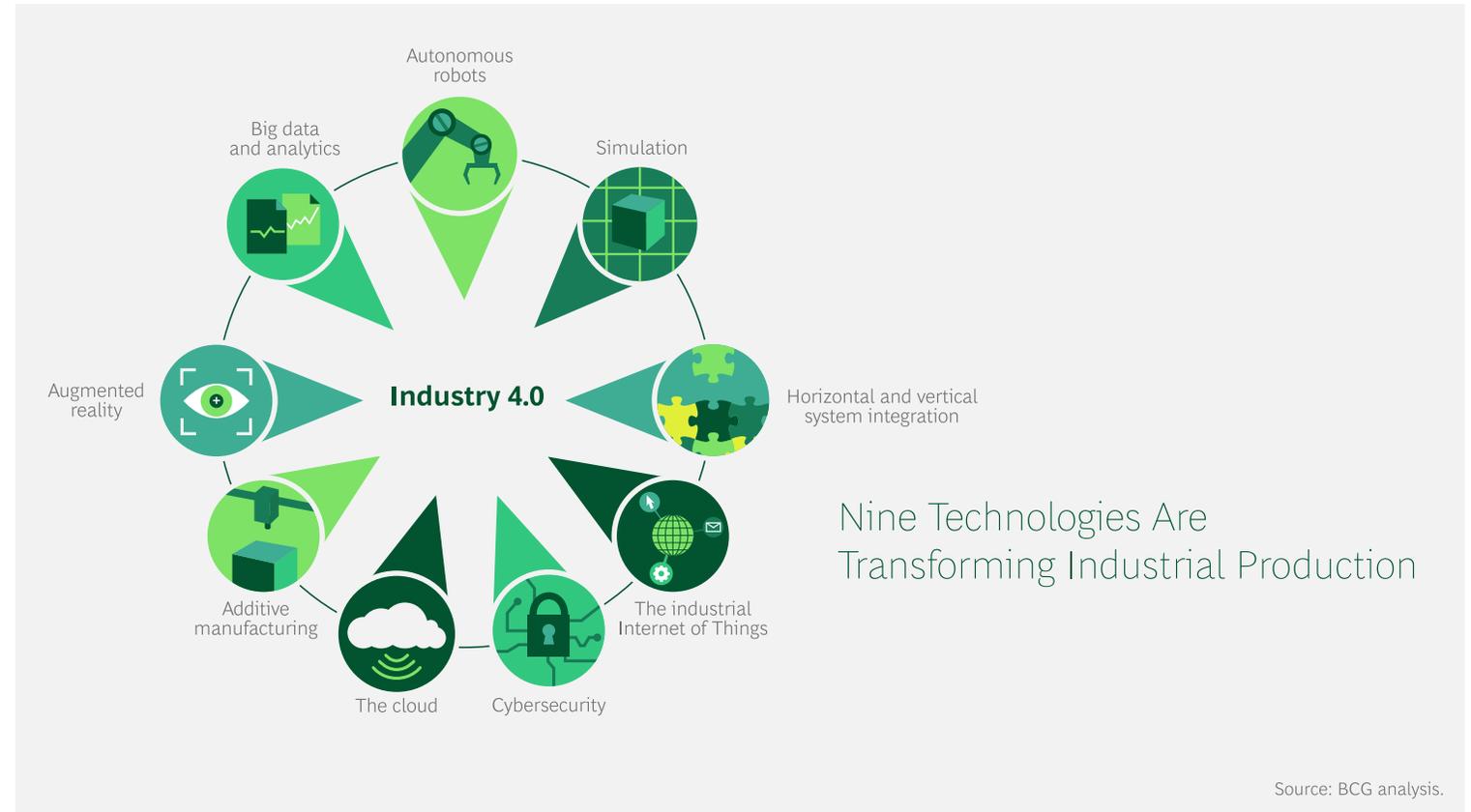
<https://canada.constructconnect.com/dcn/news/technology/2020/06/inside-innovation-constructions-post-covid-technology-opportunity>



# The Future: Industry 4.0 Technologies

## Enabling Technologies

- Which of these technologies is your company already looking at implementing as part of your current and future operations?
- Can you speed up implementation of the relevant technologies that will help you maintain safety and productivity during the time of COVID-19....and beyond?



<https://www.bcg.com/en-ca/capabilities/operations/embracing-industry-4.0-rediscovering-growth>



# Additional Resources

## Enabling Technologies

1. COAA industry sharing pages: [Working Through the Challenges](#)

2. Health and Safety sites across Canada:

[The Government of Canada](#) provides numerous multimedia resources ranging from physical distancing, training on mask use/ hand washing, etc

[The Canadian Centre of Occupational Health and Safety \(CCOHS\)](#) provides free information and resources (available until the end of 2020):

[The Alberta Municipal Health and Safety Association \(AMHSA\)](#) has a collection of multimedia with useful information and videos:

<https://www.youtube.com/watch?v=3RAEHCD47jk&feature=youtu.be>



1. **COAA industry sharing web page** - documents are guidelines prepared by various COAA members as they responded to their particular COVID-19 circumstances; they are provided as a courtesy in unprecedented times as examples and idea-starters for the industry.
2. Health and Safety sites across Canada – leverage the information within Alberta as well as across the country.
3. Other construction associations across Alberta and Canada have also developed useful guidebooks. Example: Alberta Construction Association (including Edmonton Construction Association and Calgary Construction Association).



# Managing COVID-19 Risks

## Module 5

# Reinventing Our Processes

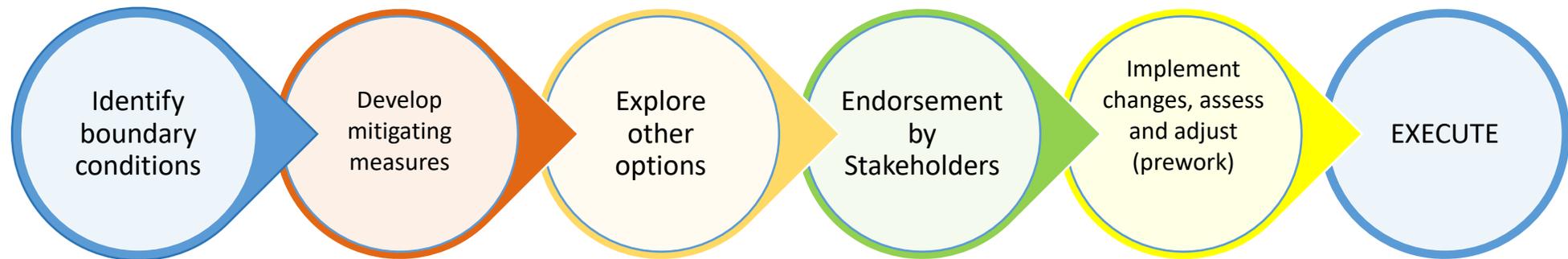
Version 1.3  
December, 2020



# Module 5 – Introduction

## Reinventing our Processes

- COVID-19 Response Plans (i.e. business continuity plans) should be developed to reduce risk and possible impacts on health while maintaining productivity.
- The disruption of COVID is an opportunity to think outside the box and reinvent processes which are familiar but suboptimal



## Major Challenges to be considered:

- **Communicating expectations in advance of mobilization (in or out of province)**
- **Site access – screening at gate – at home (web questionnaire)**
- **Onboarding**
- **Moving people from parking lot to bubbles**
- **Lunch facilities**
- **Changing facilities**
- **Permitting**
- **Limited footprint in some areas**
- **Workers from other provinces**
- **Workers form outside Canada**
- **Absenteeism**
- **PPE availability**
- **Emergency / Lightning assembly areas**
- **Human behavior**
- **Protocol for actual/presumptive case**
- **Productivity / costs**
- **Other sites with turnarounds in same window**

# Module 5 - Best Principles

## Reinventing our Processes

- 5-1) Strategic considerations
- 5-2) Health considerations
- 5-3) People considerations
- 5-4) Procedure modifications
- 5-5) Facilities modifications & use adaptations
- 5-6) Responding to cases



# Strategic Considerations

## Reinventing our processes

- **5-1a) Construction sites**
  - Opportunities to reduce or defer project scope
  - Extend project schedule
  - Maximize regional manpower
  - Stagger shift starts (days and nights, various trades)
  - Solid back-up plan for key roles



**Key deliverables:**

- **Owner's TA COVID plan**
- **GO / NO-GO criteria for TA deferral**
- **Validated contractor COVID plans**
- **Revised logistics plan (housing/bussing/cleaning)**
- **Revised Permitting document**
- **Revised Day In the Life Of document**
- **International worker strategy and protocol**
- **Documented emergency assembly plan**
- **Revised Onboarding plan**
- **Revised contractor onboarding plan (for key contractors)**
- **Revised HSSE leadership training schedule**
- **PPE sourcing strategy**
- **Documented back-up plan for key roles**
- **Contractor plan to handle field fear/anxiety/unrest**
- **Reporting requirements**

# Strategic Considerations

## Reinventing our Processes

### 5-1b) Turnaround sites

- Revisit TA scope – defer components if feasible
- Minimize other work during TA window
- Extend TA window
- Maximize regional manpower
- Stagger shift starts (days and nights)
- Solid back-up plan for key roles



## **Key deliverables:**

- **Owner's TA COVID plan**
- **GO / NO-GO criteria for TA deferral**
- **Validated contractor COVID plans**
- **Revised logistics plan (housing/bussing/cleaning)**
- **Revised Permitting document**
- **Revised Day In the Life Of document**
- **International worker strategy and protocol**
- **Documented emergency assembly plan**
- **Revised Onboarding plan**
- **Revised contractor onboarding plan (for key contractors)**
- **Revised HSSE leadership training schedule**
- **PPE sourcing strategy**
- **Documented back-up plan for key roles**
- **Contractor plan to handle field fear/anxiety/unrest**
- **Reporting requirements**

# Health Considerations

## Reinventing our Processes

### 5-2a) Understand boundary conditions

- Provincial health authority
  - Local trends
  - Other jurisdictions
- Corporate policies
- Industry practices
- Reputational risks



### **Boundary Conditions:**

- **Maximum group size: as per local jurisdiction**
- **Physical distance > 2 metres**
- **Demographics at risk**
- **PPE required / PPE availability**
- **Number of people per shift including Owner personnel**
- **International work force**
- **Areas with restricted footprint**
- **Managing medical information (when required)**

# Health Considerations

## Reinventing our Processes

### 5-2b) Baseline site cleanliness & hygiene

- Develop procedures
- Identification of high and priority areas
- Additional cleaning/sanitization
- Availability of supplies



### Develop Procedures:

- Company employee, sub-contractor, or facility owner controlled
- Utilize Sample - Janitorial Services Cleaning Schedule reference document if service provider does not have a documented scope of work.
- Audit cleaning
- Publish Janitorial Cleaning Schedule and audit reports

### Identification of high touch and priority areas:

- Develop Criteria for Potential for exposure (High, Low)
- Develop Criteria for Probability of Contamination (Confirmed Case, Suspected Case)
- Determine if the touch points impact the public.

### Additional cleaning/sanitization:

- Determine if additional cleaning/sanitization is required.
- Coordinate extra scope of work required
- Amount of supplies and cleaners required
- Timelines
- Costs (supplies and labor)
- Contingency plan if extra cleaning not feasible

### Supplies:

- Develop a Site-Specific Hygiene Supply Inventory list
- Adjust to suit current requirements and establish minimum inventory required
- Contingency plan if supply chain issues occur

# Health Considerations

## Reinventing our Processes

### 5-2c) Touchless: a guiding principle

- Limit the amount of high touch points such as office sign-in/sign-outs and COVID Pre-Screening questionnaires.
- Develop electronic methods with the use of QR codes
  - COVID Pre-Screening Questionnaire
  - Office Building Sign-in and Sign-out



**Guests / Visitors / Clients:**

- **Criteria to determine when site access is permitted.**
- **Will pre-access screening be completed (questionnaire, temperature check, or both)?**
- **Managing and if necessary communicating test re**
- **Check in / out protocols**
- **Will there be changes to how employees access the facility?**

# People Considerations

## Reinventing our Processes

### 5-3a) Office and field based (commuting to/from site)

Things to consider:

- List positions able to work remotely
- Client requirements
- Worker illness protocols



**List positions able to work remotely (work from home):**

- 
- **Positions that are majority computer based**
- **Include required equipment – laptop, CPU, monitor, mouse, hub, etc.**
- **Individual ability to work from home (workstation area, internet access, time zone differential, etc.)**
- **Contractual requirements for onsite personnel**
- **Consider ergonomic scope of remote work (what is in, what is out)**

**Client requirements:**

- **Requirements specific to each client related to personal interaction (In person meetings, accessing client owned facilities or equipment, etc.)**

**Worker illness protocols:**

- **Company specific protocols and protocols specific to each client and/or facility**
- **COVID-19 Reporting Process**

# People Considerations

## Reinventing our Processes

### 5-3b) Office and Field Based (non-commuting: staying in camp)

Things to consider:

- List positions able to work remotely
- Facility operator requirements
- Client requirements
- Worker illness protocols



**List positions able to work remotely (work from home):**

- **Positions that are majority computer based**
- **Include required equipment – laptop, CPU, monitor, mouse, hub, etc.**
- **Individual ability to work from home (workstation area, internet access, time zone differential, etc.)**
- **Contractual requirements for onsite personnel**
- **Consider ergonomic scope of remote work (what is in, what is out)**

**Facility operator requirements:**

- **Camp or other Company provided accommodation specific requirements**

**Client requirements:**

- **Requirements specific to each client related to personal interaction (In person meetings, accessing client owned facilities or equipment, etc.)**

**Worker illness protocols:**

- **Company specific protocols and protocols specific to each client and/or facility**
- **COVID-19 Reporting Process**

**Transportation of an ill worker from camp or worksite:**

- **Is transportation required?**
- **How will transportation be provided? (Company, client, other)**
- **What equipment and supplies are required to facilitate transportation?**
- **Transportation to where? (medical facility, designated quarantine area, residence, or other) Communicate process/procedure - COVID-19 Isolation & Transportation of Symptomatic Workers SWP**

# People Considerations

## Reinventing our Processes

### 5-3c) Essential Staff

Things to consider:

- List of staff/positions essential to maintain normal operations
- List of staff/positions essential to maintain modified or curtailed operations



**Response Guide:**

**List of staff/positions essential to maintain normal operations:**

- What is considered essential work to maintain normal operations, what work can be deferred if necessary

**List of staff/positions essential to maintain modified or curtailed operations:**

- What is considered essential work should operations be curtailed?
- Include Company controlled sites and client sites in consultation

# People Considerations

## Reinventing our Processes

### 5-3d) All Staff

Things to consider:

- Work refusal due to perceived threat process
- Worker self-quarantine, or Health Authority required quarantine.
- Ancillary staff potential (Company X internal or contractor)
- Onboarding and mobilizing to site
- Identification of work scopes with increased exposure risk
- Identification of temporary shutdown or demobilization requirements



**Work refusal due to perceived threat process:**

- Provincial OHS requirements - Right to Refuse Unsafe Work
- Collective agreement requirements

**Worker self-quarantine, or Health Authority required quarantine:**

- Quarantine measures are to last 14 days. How will this be tracked? Who needs this information communicated? (supervisor, HR, payroll etc.)? Individual privacy to be strictly adhered to
- Reporting COVID-19-related cases in Company data bases.
- Develop a COVID-19 Reporting Process

**Ancillary staff potential (Company X internal or contractor):**

- Is ancillary staffing possible from internal Company sources or contractor companies? Which work scopes?

**Onboarding and mobilizing to site:**

- What is being communicated to workers prior to onboarding or mobilization to a worksite? Do recruitment teams have up to date knowledge?
- Develop a COVID-19 PRE-SCREENING QUESTIONNAIRE

**Identification of work scopes with increased exposure risk:**

- Are there scopes of work that increase the risk of exposure to COVID-19? (public interaction, requirement to enter a medical facility, janitorial, etc.) Are additional controls measures required and communicated to affected workers?
- Develop a COVID-19 General Cleaning and Disinfecting SWP
- Develop a COVID-19 PPE Requirements for Cleaning and Direct or Close Contact SWP

**Identification of temporary shutdown or demobilization requirements:**

- What workers will be affected?
- What level of shutdown or demobilization may be required? (partial or total? Define scopes)
- Define the shutdown or demobilization sequence (Priority of positions – nonessential through essential, logistics of personnel movement)

# People Considerations

## Reinventing our Processes

### 5-3e) Contractors

Things to consider:

- List contractor(s) that provide essential services
- Contingency if contractor service becomes unavailable



**Response Guide:**

**List contractor(s) that provide essential services:**

- Are contractor services used to provide any services to the BU/Project? Are any of these services considered essential to operation of your Company or client facilities, contractual requirements? E.g. water delivery, janitorial services, specialized technical services

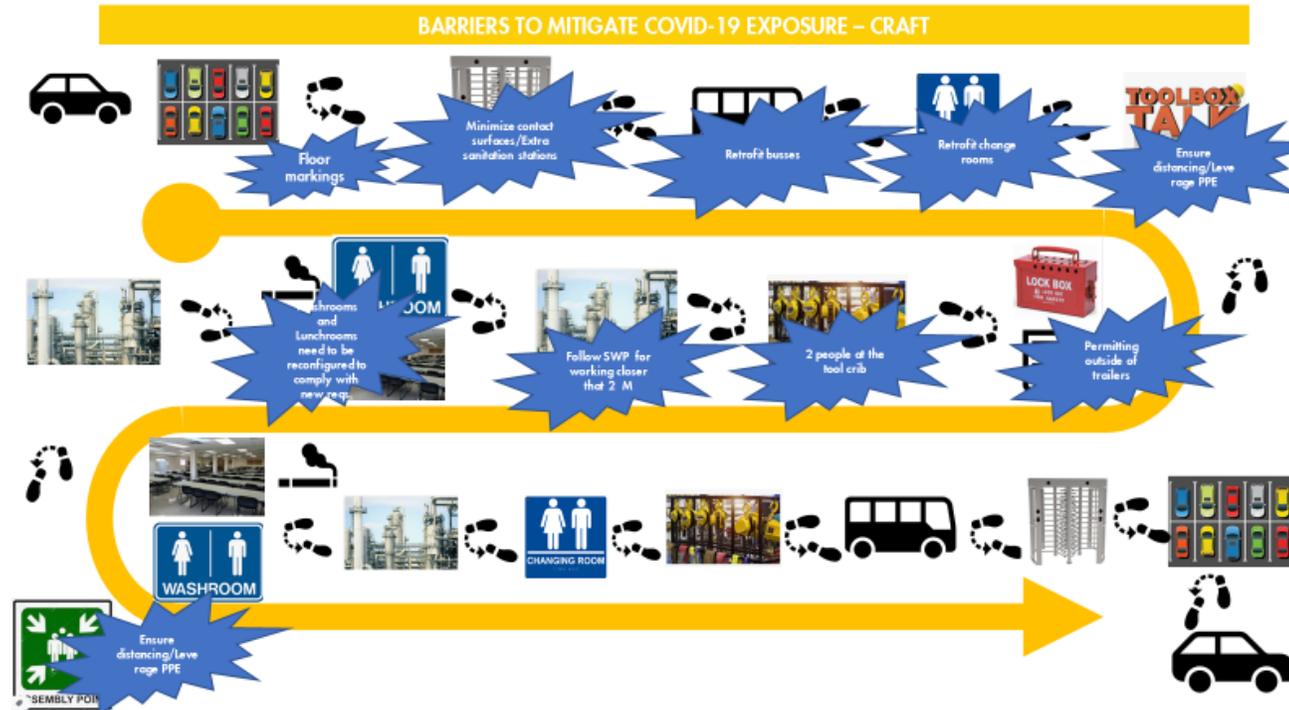
**Contingency if contractor service becomes unavailable:**

- Does the contractor have a response plan or contingency should they be unable to provide a service?
- Are there alternate contractors or internal Company resources that can temporarily provide the service if required?

# Procedure Modifications

## Reinventing our Processes

### 5-4a) Determine activities that require mitigation



## Determine activities that require mitigation

- Onboarding
- Accessing site
- Bussing
- Donning PPE
- Tool box talks
- Washroom use
- Tool crib
- Confined/restricted space
- Lunchroom
- Permitting
- Vehicle sharing
- Smoking pits
- Shift turnover
- Emergency assembly
- Vehicle disinfection (cranes)
- Worker offsite
- Cartridge disposal
- International workers
- Out of province workers
- Pre-work

# Procedure Modifications

## Reinventing our Processes

### 5-4b) Simplification and streamlining

- Maximize virtual meetings, optimize number of attendees
- Embed safety moments in toolbox talks



# Procedure Modifications

## Reinventing our Processes

### 5-4c) Other procedures

- Required PPE for emergency muster areas
- Contractor COVID plans
  - COVID questions/complaints resolution process
- Typical worker “flowcharts”: minimize touchpoints, maximize barriers
- Out-of-province worker “bubbles”
- Joint owner + contractor communication plans
  - address COVID anxiety



# Modify Facilities & Uses

## Reinventing our Processes

### 5-5a) Typical modifications

- Retrofit busses
- Change lunchroom layout
- Change permit facilities (outdoors if possible)
- Extra trailers for Supervisors and specialty teams
- Retrofit wash cars
- Retrofit change rooms



# Modify Facilities & Uses

## Reinventing our Processes

### 5-5b) Small groups/common areas

- Set a limit on size of employee gatherings
- Meeting rooms/breakout rooms/shared usage spaces
- Workspace/hallways/stairwells
- Copy areas
- Kitchen/lunchroom areas/washrooms



**Check recommendations from government authorities on group sizes.**

**Approval process should include:**

- **Why this gathering is deemed essential;**
- **A safety plan which includes controls such as safe social distancing and PPE.**

**General:**

- a. Type of facility (single or multi-tenant, number of floors, location if in tower/hi-rise)**
- b. Normal and revised occupancy level.**
- c. How is the facility accessed? (i.e., public access areas, elevators)**
- d. Parking area considerations**
- e. Control points / security (check-in, check-out)**
- f. Reception area**
- g. Deliveries (required protocols, communication of protocols)**
- h. Designated smoking areas**

**Walkways / Hallways / Stairwells / Elevator:**

- a. Are there areas where physical distancing cannot be maintained?**
- b. Identify blind spots/corners**
- c. Identify potential bottlenecks**
- d. Additional usage protocols required? (directional usage, one way, etiquette/best practices)**

### Workspace:

- a. Identify workspaces at risk of physical distancing encroachment
  - i. Delineate usage of workspaces to maintain physical distancing
  - ii. Determine if workspaces could be modified to allow physical distancing (i.e., barrier installation),
    - Cost
    - Timeline
  - iii. Determine if revision of workspace layout is required (i.e., directional requirements, furniture removal/relocation)
    - Cost
    - Timeline
- b. Determine the maximum number of employees able to occupy an entire work area at the same time while maintaining physical distancing
- c. Determine type of workspace utilization (i.e., assigned full time, flex/hotel space, shared offices)
- d. Determine cleaning/sanitization schedule based on workspace usage
  - i. Ability to track usage and cleaning
- e. Determine if any documented best practices for office etiquette are required

### Meeting Rooms / Breakout Rooms / Shared Usage Spaces:

- a. Determine maximum capacity per room to maintain physical distancing
  - i. Remove chairs, or otherwise limit capacity
  - ii. Update published capacity listings (i.e., Outlook address book capacity listings, SharePoint page)
- b. Determine traffic direction if required (one-way access through)
- c. Determine cleaning/sanitization schedule based on usage

### Washrooms:

- a. Demographic requirements (female vs. male)
- b. Identify toilets or urinals at risk of physical distancing encroachment
- c. Determine cleaning/sanitization schedule.
- d. Determine if additional sanitization products required in washroom or stalls.
- e. Additional garbage receptacles needed.
- f. Access protocols
  - i. Consider staggering entry to reduce the number of users present at a time

**Copy Areas:**

- a. Usage protocols**
- b. Are there areas where physical distancing cannot be maintained?**
- c. Provide a means for staff to sanitize hands if goods/supplies are handled**
- d. Review cleaning protocols for high touch areas on office equipment**
- e. Determine shared equipment requiring modified use**
  - i. Staplers**
  - ii. Hole Punch**

**Kitchen / Lunchroom Areas:**

- a. Determine cleaning/sanitization schedule protocols**
- b. Food storage protocols**
- c. Determine maximum capacity**
- d. Determine equipment requiring modified use**
  - i. Coffee machines**
  - ii. Refrigerators**
  - iii. Microwaves**
  - iv. Utensils**
  - v. Countertop items**

# Modify Facilities & Uses

## Reinventing our Processes

### 5-5c) Indoor Personal Protective Equipment (PPE)

- Develop standards for additional PPE requirements for close contact and cleaning.
- Example:

Response Level Criteria

Response Level	Cleaning Task	Tasks requiring worker interaction
<b>Level 0</b>	No suspected COVID-19 contamination in the area	Able to maintain 2m/6ft of separation while performing task
<b>Level 1</b>	Asymptomatic workers, unable to maintain 2m/6ft of separation to perform task	
<b>Level 2</b>	Area occupied by known or probable case	Close contact with a known or probable case, or direct contact with an asymptomatic person
<b>Level 3</b>	Area occupied by known or probable case with visible bodily fluids present	Direct contact with known or probable case



**The development of hazard assessments for tasks and cleaning will assist with PPE requirements.**

**PPE Requirements to consider:**

- **Hand – impervious gloves and SDS requirement**
- **Respiratory – Facial mask, facial covering, N95 mask**
- **Eye – Safety glasses**
- **Face – Per SDS and worksite requirements, face shield**
- **Body – per hazard assessment and worksite requirements**

**Use of Personal Protective Equipment:**

- **What would be available?**
- **When would it be issued?**
- **Do we provide training on proper usage? Are there SWP's and JHA's? How will this training be tracked?**
- **Are there limitations to be aware of?**
- **Inventory management**

# r Modify Facilities & User

## Reinventing our Processes

### 5-5d) Indoor Personal Proactive Behavior (PPB)

- Develop a Communications Plan
- Requirements and changes
- Emergency Response Plan
- Training to use PPE



**Communications Plan:**

- a. Establish a communication plan**
  - i. Who is responsible for communications for the facility?**
  - ii. What will be communicated?**
  - iii. How will it be communicated? (E.g. posters, toolbox talks, memo, electronic, etc.)**
  - iv. When will communication occur?**
  - v. Where will communications be posted?**
- b. Determine if pre-access training / orientation required. If required, how will this be tracked.**
- c. Work refusal scenarios**
- d. Use of Personal Protective Equipment**
- e. Will employees and supervisors require training? How will this training be tracked?**
- f. Do employees need to be trained on proper usage?**
- g. Are there limitations to be aware of?**

**Requirements and Changes.:**

- a. Are employees aware of requirements and changes to Facility use?**

**Emergency Response Plan:**

- a. Have employees been informed of changes to the Emergency Response plan?**

# r Responding to Cases

## Reinventing our Processes

### 5-6a) Potential/actual COVID cases on site: assessment, isolation, evacuation & contact tracing

- Establish a temporary isolation area
- Transportation requirements from camp or worksite
- Vehicle selection
- Travel requirements
- Reporting requirements



### **Temporary Isolation Area:**

Designate a temporary isolation area for use should a worker disclose or be observed with COVID-19 related symptoms at the worksite. The temporary isolation area must be:

#### **Climate controlled**

- Intended for continuous human habitation
- Appropriately signed to prevent unauthorized entry
- Supplied with appropriate sanitization and transmission limiting items
- A temporary isolation area is intended to separate a symptomatic individual from others at the worksite prior to the worker being transported to a long-term isolation facility.

### **Transportation Requirements:**

Establish a transportation protocol to remove a symptomatic worker from the worksite. The following will be taken into consideration:

- Do workers travel to the worksite in personal vehicles?
- Do workers take public transit to the worksite?
- Does the client provide transportation to the worksite?
- Does company provide transportation to the worksite?
- Company owned/leased vehicle
- Does the worker travel alone or with co-workers?
- Is a one-way rental vehicle available?

### **Vehicle Selection:**

A vehicle will be prepared in advance and ready for use prior to any worker reporting COVID-19 symptoms.

Any vehicle selected for use in the transport of a symptomatic worker must:

- Be mechanically maintained.
- Be registered and insured for the jurisdiction and application.
- Be equipped with seatbelts for all passengers.
- Contain an adequate amount of fuel to:
  - Complete round trip from the worksite to the long-term isolation facility for trips within 200km (120 miles) of the worksite.
  - Complete the trip to a designated rest/refueling location.
- Have a backseat.
- Contain an adequate amount cleaning supplies and transmission limiting items.
- Have signage installed to allow use only for intended purposes (signage should be removed prior to transporting a symptomatic worker).

### **Travel Requirements:**

- **The driver must be aware of any emergency procedures associated with the trip.**
- **The driver must be in possession of a cellular telephone with applicable contact information preloaded.**
- **If cellular coverage is unavailable along the travel route, an alternate form of communication is required. (radio, SPOT system, etc.).**
- **Nitrile gloves and a medical or N95 mask will be worn by the symptomatic worker for the duration of the trip.**
- **Hand sanitizer will be available to the symptomatic worker for use often and following any coughing or sneezing.**
- **The driver will open and close the vehicle door for the symptomatic worker.**
- **Prior to the worker entering the vehicle, the ventilation system must be set to low and air recirculation functions must be turned off to avoid recirculation of potentially contaminated air.**
- **The symptomatic worker will remain in the back of the vehicle segregated from the driver.**
- **If required to stop (to use a public washroom, etc.), the symptomatic worker will attempt to minimize transmission when out of the vehicle by keeping their mask on at all times, wearing gloves, avoiding touching their face, washing their hands and using sanitizer. Antiseptic wipes will be used to clean any exterior surfaces touched.**
- **Where able, use only drive through restaurant services.**

### **Reporting Requirement:**

- **Ensure workers are aware of the reporting requirements (within company, to prime contractor, to Alberta Health Services, to OH&S and some cases WCB.**

# Responding to Cases

## Reinventing our Processes

### 5-6b) Potential/actual COVID cases on site: assessment, isolation, evacuation & contact tracing

- Camp isolation
- Return to personal residence
- Company provided isolation



### **Camp Isolation:**

- **If isolation in camp is available to a symptomatic worker, Company will transport the worker to the assigned isolation area and provide support to the camp staff as required.**
- **Company will ensure isolated workers understand the terms of isolation provided by the camp.**

### **Return to Personal Residence:**

- **If the worker is able to provide their own transportation to isolate at their personal residence, they will ensure they follow isolation requirements put in place by the jurisdictional health authority.**

### **Company Provided Isolation:**

- **If isolation is provided by Company, the following services will be provided:**
- **Cleaning services**
- **Food delivered to the location, so the worker does not have to leave**

### **The worker will remain:**

- **In the provided accommodation for a minimum of 14 days or as directed by the jurisdictional health authority.**
- **Under isolation and not invite any visitor or have in and out traffic from the location except for Company provided services.**
- **The worker will be provided transportation to and from the accommodation.**
- **Contact with the isolated worker will be established daily.**

**If the worker requires additional medical assistance this will be provided by Company vehicle or ambulance.**

# Responding to Cases

## Reinventing our Processes

### 5-6c) Potential/actual COVID cases on site: assessment, isolation, evacuation & contact tracing

- Reporting process
- Contact tracing (close contact)
- Contact tracing tools
  - Contact logs
  - Wearable tech



## **Reporting Process:**

- **Are you experiencing symptoms as per the jurisdictional COVID-19 Self-Assessment tool?**
  - **Stay Home**
  - **Inform supervision and maintain social distancing.**
  - **Do you qualify for testing?**
  - **Did you test positive for COVID-19, if so:**
1. **Immediately call your supervisor with your positive test result and any information provided to you by the testing provider.**
  2. **Remain home and rest. Only return to work after completing the required days in isolation AND when your symptoms have resolved or have a documented negative test result clearance.**

## **Contact Tracing:**

**Provide information to Provincial Health Authorities as well as your supervisor determine whether employees, crews and public may have been exposed.**

### **\*Close Contact:**

**A person who is living with or otherwise had close prolonged contact (within 2 m/6 ft) with someone while they were symptomatic and not in isolation, OR had direct contact with infectious bodily fluids (e.g., was coughed or sneezed on) without the appropriate use of recommended personal protective equipment.**

# Responding to Cases

## Reinventing our Processes

### 5-6d) Return to work clearance criteria, including:

- Quarantine days
- Negative Test Results



**Immediately call your supervisor with your positive test result and any information provided to you by the testing provider.**

**Remain home and rest. Only return to work after completing the required days in isolation AND when your symptoms have resolved or have a documented negative test result clearance**



# Managing COVID-19 Risks

## Module 6

# Engaging the Whole Team

Version 1.3  
December, 2020



# Module 6 – Introduction

## Engaging the whole team

- Engaging the whole team provides enhanced ownership and commitment to the process and its success.
- Involvement from all members of the team on all levels shows that their input is valued.
- To communicate effectively, plan for consistent distribution of messaging and resources for sharing and collecting feedback.
- Be empathetic and understanding of the challenges individual team members face.



# Best Principles

## Engaging the Whole Team

- 6-1) Digitalization
- 6-2) Managing change
- 6-3) Strategy for communication and feedback
- 6-4) Empathy and understanding



# Digitalization

## Engaging the Whole Team

**Best Principle 6-1):** Digitization reduces face to face contact, surface contact transmission of virus.

- Use of digitization tools will be effective in changing work environment
  - Tablets
  - Laptops
  - Smart Phones
- Help workers to adapt to rapidly changing work environment.
- Establish digital tools policy
  - Consider using Microsoft Intune or similar solution to control company information on company supplied tools or on approved personal devices accessing company information.



**Help with timely information sharing with workers.**

- **Increased use of digitization tools will allow efficient transfer of information to workers to help complete required tasks.**

**Ability to easily convey consistent messages to large group of workers.**

**Construction can align with other industries and society in utilizing digitization tools.**

# Managing Change

## Engaging the Whole Team

**Best Principle 6-2):** prepare for change early, look for ways to involve all levels for input and demonstrate that you are incorporating their input.

- Change management must involve contributions from all levels of the organization.
  - *Often difficult to achieve but not impossible*
  - *Implement and follow established Change Management process, Kotter etc.*
- Look for learning opportunities related to changes experienced in work settings through COVID.
- Safety and productivity should not be sacrificed as a result of process changes.



**As those who were involved at the grassroots level to the top level and contributing to the change in the way work is performed would want the new process to succeed. Consider adjusting shift times, break times, employee transportation, and meetings to reduce density. Look for ways to change material delivery, permit approval process to reduce or eliminate physical contact and to ensure social distancing.**

# Communication and Feedback

## Engaging the Whole Team

**Best Principle 6-3):** establish a single source for COVID-related messages to staff; the more senior, the better.

- Create a single source for COVID-related resources.
- Have defined information distribution.
- Work with corporate communications
- Form interdepartmental committees
- Be mindful of privacy concerns



- **Work with Communications, Media group if available.**
- **Create a single source of resources.**
  - **A shared folder or drive or location on company system.**
  - **Have single source for approving content to be added**
  - **Be mindful of written messages that can be forwarded to media**
- **Have defined information distribution.**
  - **Widespread email distribution**
  - **Toolbox or Meeting distribution**
  - **Or controlled distribution of written material to select department heads or management for verbal communication to staff, workers.**
- **Scale communication to the degree of risk and uncertainty.**
- **Form interdepartmental committees**
  - **At all levels, insist upon democracy of input.**
  - **Frame conversations to ensure psychological safety**
- **Have media contacts routed to single point**
  - **Be mindful of privacy concerns when sharing symptomatic or confirmed cases**
  - **Message that organization is abiding by directions of the provincial health authority**
  - **Message that organization is protecting privacy of any workers that are symptomatic or tested positive**
  - **Message that if a worker was a 1st layer close contact or 2nd layer close contact they would be called by a company representative**

# Empathy and Understanding

## Engaging the Whole Team

**Best Principle 6-4):** set the pace with frequent check-ins with key leaders, encourage them to check in with their teams.

- Remind all leadership and supervision of the importance of connecting with their people
- Understand and communicate about allostatic load
- Address and normalize mental health and stress concerns



**Allostatic load is the persistent stressors that an individual will endure during pandemic and other times of crisis. Each individual possesses a surge capacity, an ability to temporarily withstand additional stresses and strains, but if there are too many or for too long the cumulative effects can have serious detrimental consequences.**

**Address and normalize Mental health and stress concerns**

- **Promote any Employee and Family Assistance Programs consistently**
- **Look for and engage wellness practitioners for support.**
- **Book virtual lunch and learn where possible.**

# Additional Resources

## Engaging the Whole Team

- 1) COAA industry sharing pages: [Working through the Challenges](#)
- 2) Module 4 – Enabling Technologies
  - Outlines digital tools for contact tracing, health tracking and worker assessments
  - These tools will continue to be valuable for health uses and other uses such as work force planning, productivity measurement and asset tracking.



- 1. COAA industry sharing web page - documents are guidelines prepared by various COAA members as they responded to their particular COVID-19 circumstances; they are provided as a courtesy in unprecedented times as examples and idea-starters for the industry.**
- 2. Module 3 Enabling Technologies - outlines digital tools for contact tracing, health tracking and worker assessments; these tools will continue to be valuable after COVID-19 . Many tools will find other uses such as work face planning, productivity measurement and asset tracking.**



# Managing COVID-19 Risks

## Module 7

# Offsite Wellness

Version 1.3  
December, 2020



# Module 7 – Introduction

## Offsite Wellness

- Offsite Wellness prepares employees for the onsite demands
- Employers who promote offsite wellness empower employees to care about their wellbeing
- Employees who actively participate in their health offsite come to work more prepared to work safely and productively
- Offsite wellness is equally important as onsite safety



# Best Principles for Offsite Safety

## Offsite Wellness

- 7-1) Employer wellness checklist**
- 7-2) Winning Employee buy-in**
- 7-3) Mobilizing existing and new workers**
- 7-4) Connecting with people**
- 7-5) Respecting neighbouring communities**



# Wellness Checklist

## Offsite Wellness

### Best Principle 7-1): Employer wellness checklist

- Blueprint for offsite wellness: what makes a healthy employee?

#### Example topics

- Mental hygiene check-in
- Covid protocols
  - Offsite PPE (masks, sanitizer, distancing)
  - FAQ for symptoms
- Offsite resources
  - EFAP, life coaches, provincial health authorities, Health Canada
  - Financial planner resources



**A healthy employee feeds their wellbeing through four categories: Fitness (physical health), Fuel (mental health), Family (emotional health) and Finances (practical health).**

**Can an Employer develop a way to connect to this side of life for its employees? What about through a checklist that provides a start for employees to “check-in” to their health.**

**Example of Mental Hygiene:**

- **Did you spend any time quietly focusing today?**
- **Did you get a good rest last night?**
- **Did you connect with someone you care about yesterday?**

**For employees who don't know where to turn for their offsite health, the Employer can be a valuable resource.**

# Winning Buy-in

## Offsite Wellness

**Best Principle 7-2):** Winning Employee buy-in

Workplace Strategies for better participation:

- Embed wellness checklist into onboarding
- Employer/employee wellness partnership
  - Daily/Weekly challenges
- Stay in touch by text
- Wellness app



## **How to EMPOWER the worker**

- **Checklist from 7-1 could be presented at onboarding**
- **Owner/Employer/Employee partnership**
- **Examples: Have a draw at the end of the week with names of: those who slept more than 7 hours for 3 nights; those who went for a walk after work; who ate supper with a loved one; etc.**

## **Stay in touch**

- **Worker get a morning text message with a daily reminder/inspirational message relevant to the worker's industry**
- **Tie to Fit for Duty check-in**
- **Check in connection with supervision**
- **Worker gets a text message at the end of the shift**
- **Debrief on the day**
- **Personal check-in**
- **Reminder question**
- **what are you going to do for your offsite wellness after work?**
- **Develop an offsite wellness app where the worker can monitor their progress**
- **Create challenges**

# Mobilizing Workers

## Offsite Wellness

**Best Principle 7-3):** Mobilizing existing and new workers

Connect with workers before they reach the gate

- Pre-work planning
- Preparation and expectations
- Journey management



- **Can Employers improve how they mobilize employees?**
- **Imagine a scenario where new employees were given:**
- **a travel management plan – how to get there, what to consider, where to park a car, pictures of the location, what to expect if it's remote, etc**
- **Video of the worksite – where is the safety trailer, familiar faces to look for, a video map from the parking lot to the orientation centre**

**Workers will feel more secure and confident going to a workplace they have done some preparation on. This increases their general confidence which raises their engagement to the program they are going to participate in.**

# Connecting

## Offsite Wellness

**Best Principle 7-4):** Connecting with your people

Workers need/want CONNECTION - at work and at home

- A collective vision of connection is needed
- Employers need to put effort into connecting
- Employees need to engage and respond



**Connection is more about philosophy. A workplace that asks questions, that promotes conversation, that puts effort into the human element of the workplace, will encourage greater connection. When people feel connected at their work, their whole life benefits. This takes a mutual effort, combined with systems to support the effort.**

# Neighbouring Communities

## Offsite Wellness

### **Best Principle 7-5):** Respecting neighbouring communities

- Work supports communities, and employers and employees want their communities to be safe
  - Limit non-essential interaction between project workers and neighbouring communities
  - Prevent transmission from workers to communities AND prevent transmission from communities into worksite or camp



- **Offsite wellness is a full circle, from the focus on the individual's wellbeing, to the wellbeing of the workplace, to the wellbeing of the community as a whole.**
- **Employers and Employees who have intentionally designed a lifestyle that supports healthy decisions, that connects regularly with each other, and that holds each other accountable for their mutual wellbeing, will prosper.**

# Additional Resources

## Offsite Wellness

- 1) COAA industry sharing pages: [Working Through the Challenges](#)
- 2) Module 4 – Enabling Technologies
  - Outlines digital tools for contact tracing, health tracking and worker assessments
  - These tools will continue to be valuable for health uses and other uses such as work force planning, productivity measurement and asset tracking.



- 1. COAA industry sharing web page - documents are guidelines prepared by various COAA members as they responded to their particular COVID-19 circumstances; they are provided as a courtesy in unprecedented times as examples and idea-starters for the industry.**
- 2. Module 3 Enabling Technologies - outlines digital tools for contact tracing, health tracking and worker assessments; these tools will continue to be valuable after COVID-19 . Many tools will find other uses such as work force planning, productivity measurement and asset tracking.**

