People Aren't Pylons - Preventing Vehicle Collisions at Work Sites

April 1, 2020

BCCSA
BC ConstructionSafety Alliance

WorkSafeBC

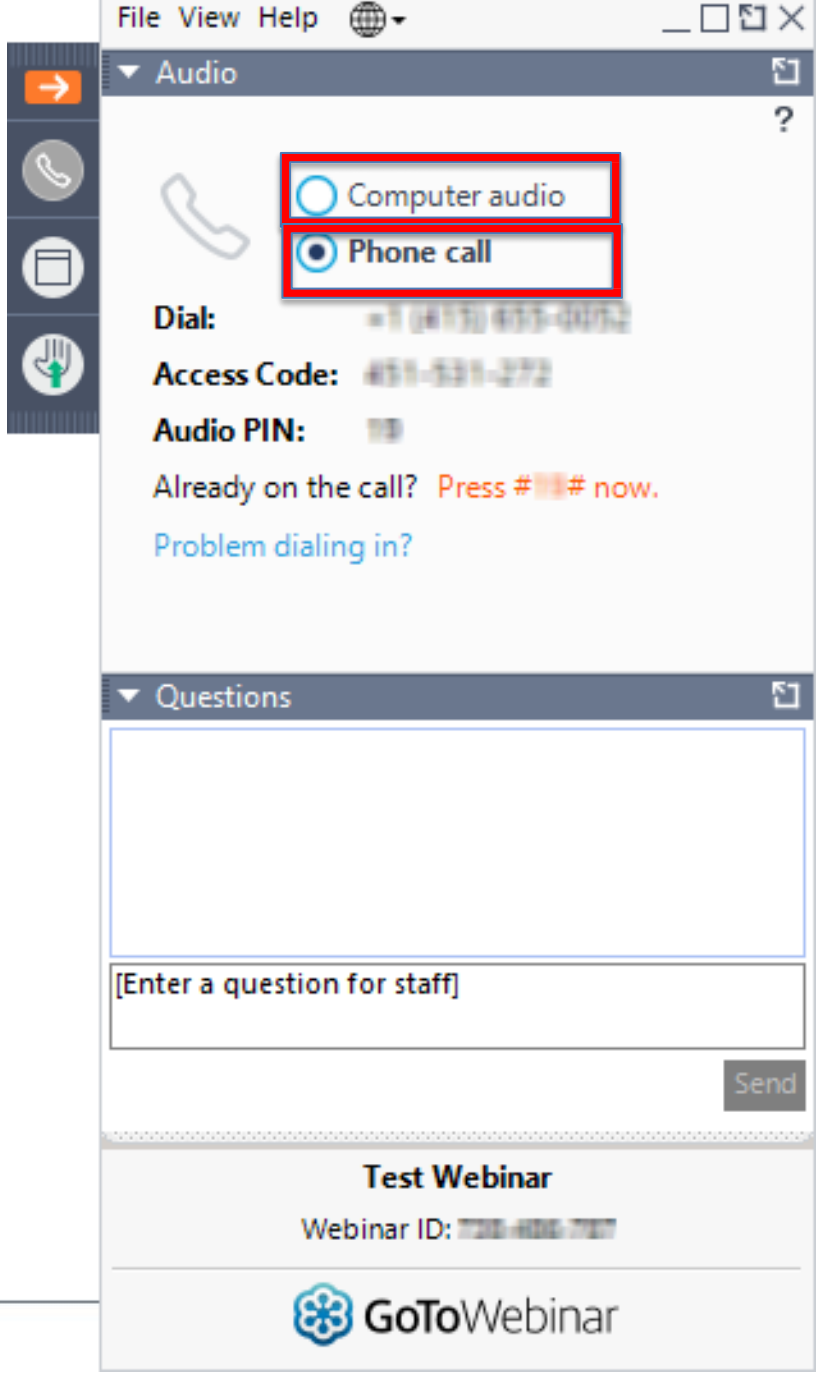
Road Safety at Work

Audio instructions

Select “Computer audio” to use your computer’s sound

OR

Select “Phone call” to dial in



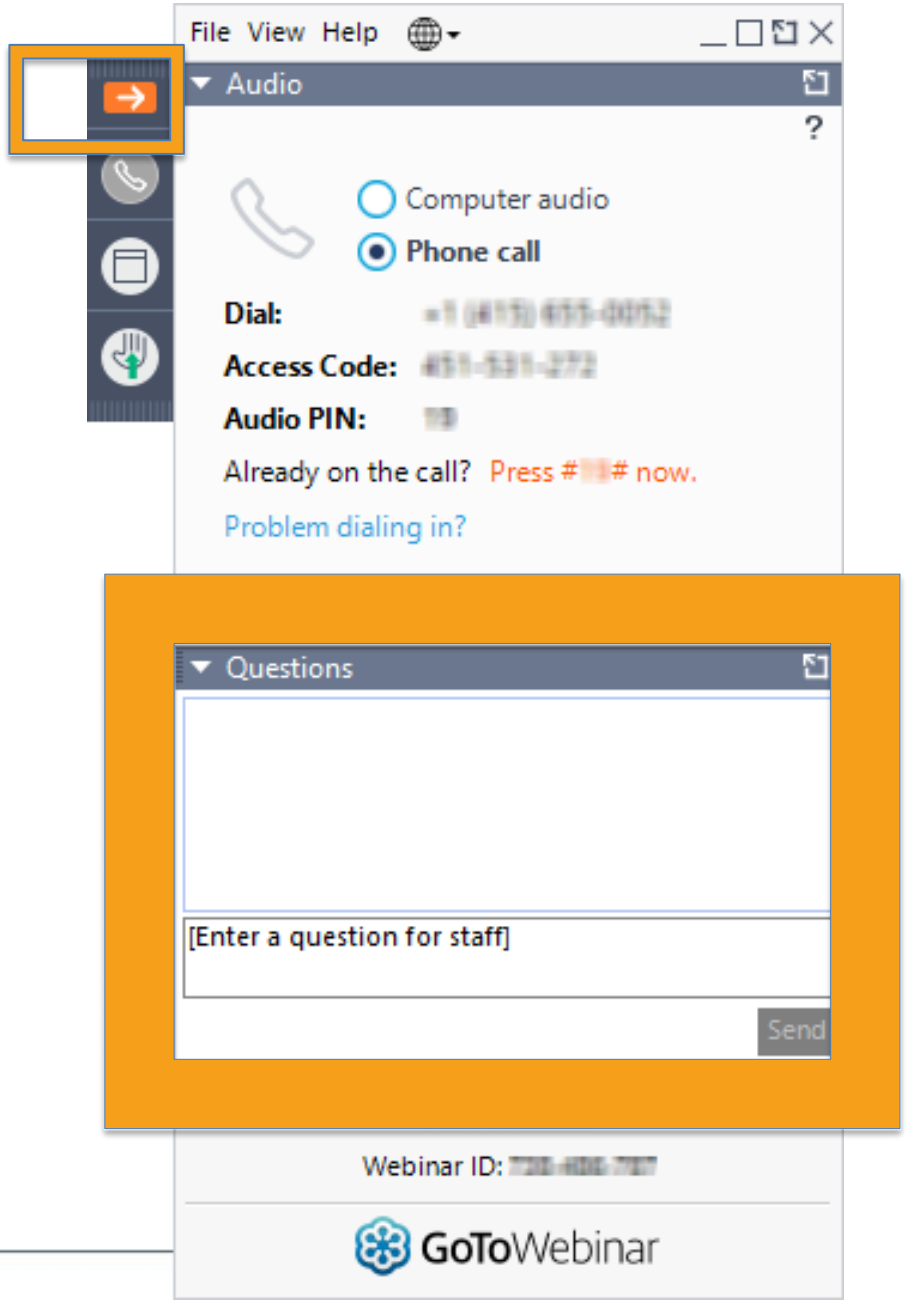
ROAD SAFETY AT WORK

Asking questions

Click on “Questions” to expand the Questions pane

Then

Type your question to the moderator



ROAD SAFETY AT WORK

Our webinar partner

Teresa Holloran

Quality Assurance Specialist,
Traffic Control Program

April is **Construction Month**

BUILT. RIGHT.
CONSTRUCTION MONTH
APRIL 2020

BCCSA
BC ConstructionSafety Alliance

About BCCSA

- 40,000 employers
- 200,000 workers

BCCSA helps employers save money, make money and protect their money by decreasing financial and human losses associated with workplace injury.

Struck-by incidents are a BIG concern in the construction industry.

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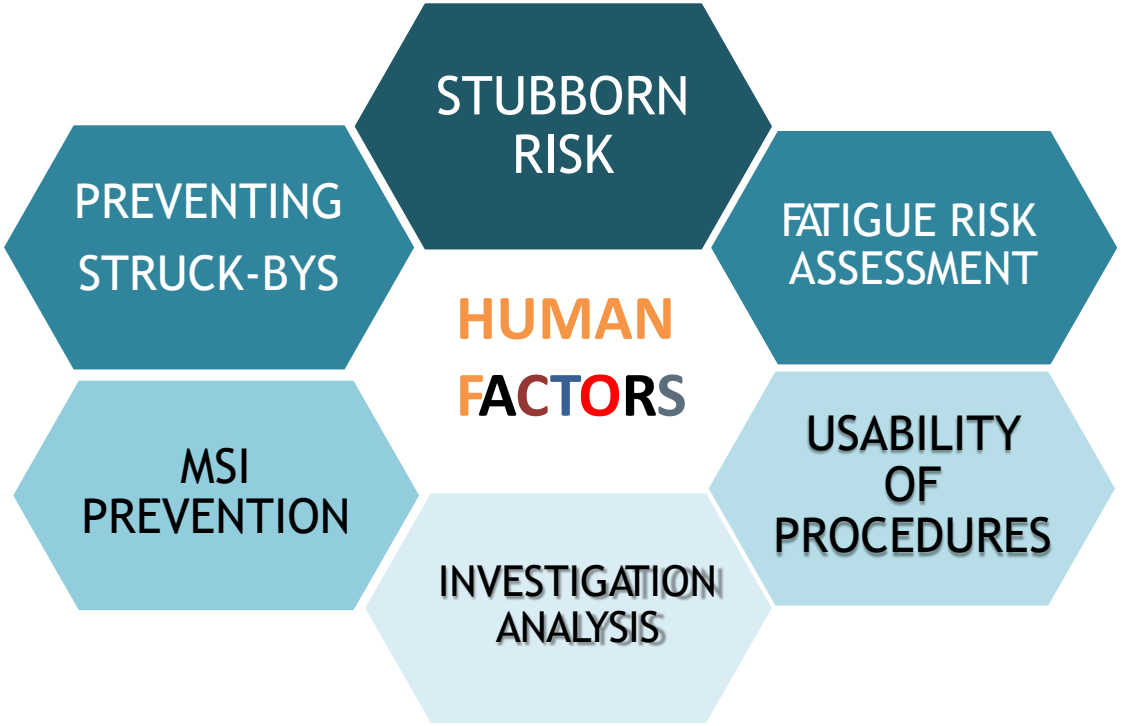
Introducing today's guest presenter

Heather Kahle

Human Factors Specialist

Risk Analysis Unit

WorkSafeBC



Webinar Objectives

1. Explore why struck-by incidents occur
2. Highlight legal responsibilities for workplace parties
3. Provide effective risk control options based on the hierarchy of risk controls
4. Identify best practices, tools, resources and links to effectively prevent struck-by incidents

Incidents

2008 - 2017

234 involve mobile equipment

456
Reversing Incidents

14
Fatal, work-related struck-by injuries

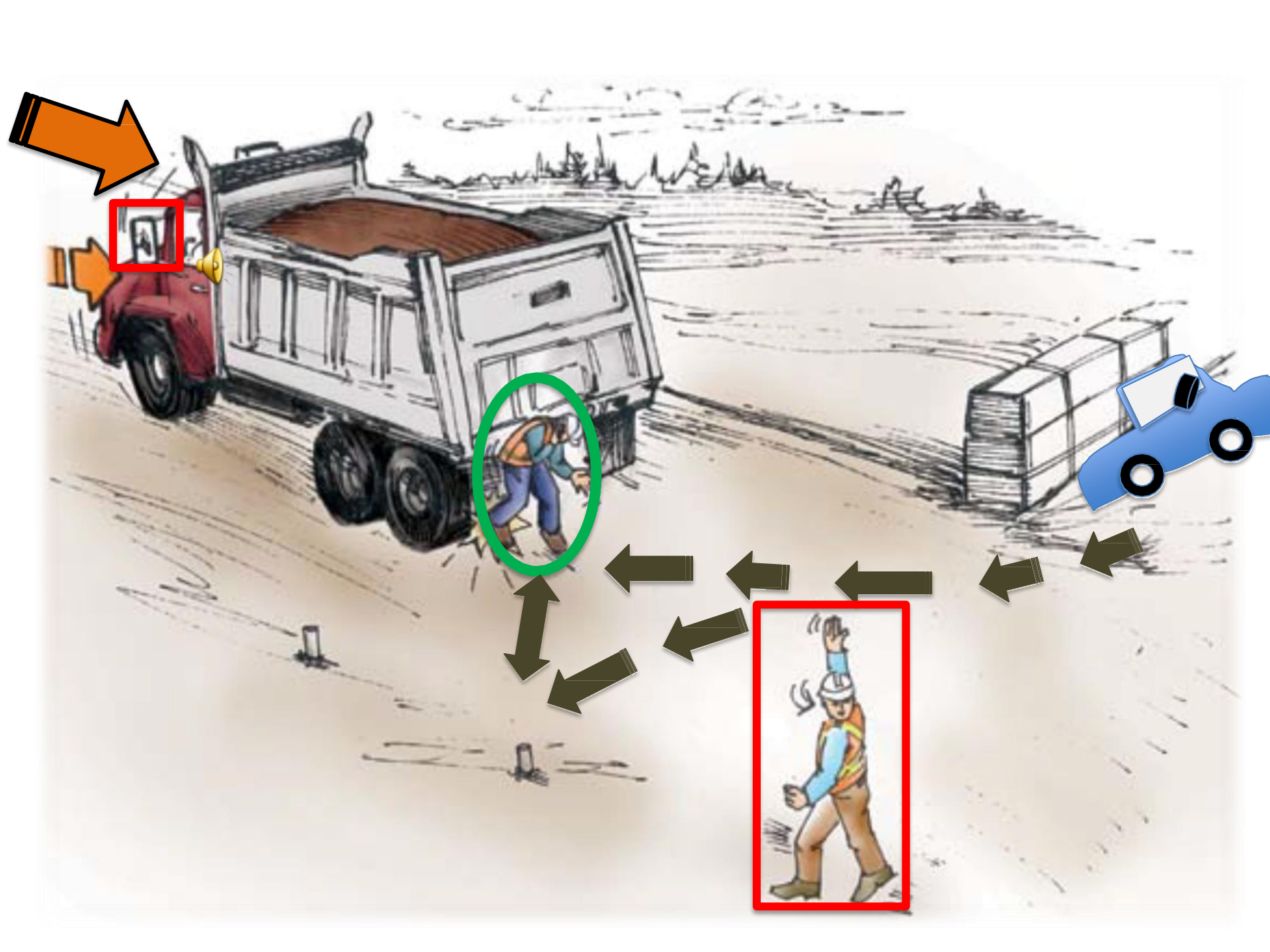
Struck-Bys in the Workplace

Images courtesy of Google

Poll Question #1

Do you think alarms are effective in protecting against the hazards of reversing mobile equipment or vehicles?

- ❑ **Yes**
- ❑ **No**
- ❑ **I don’t know**

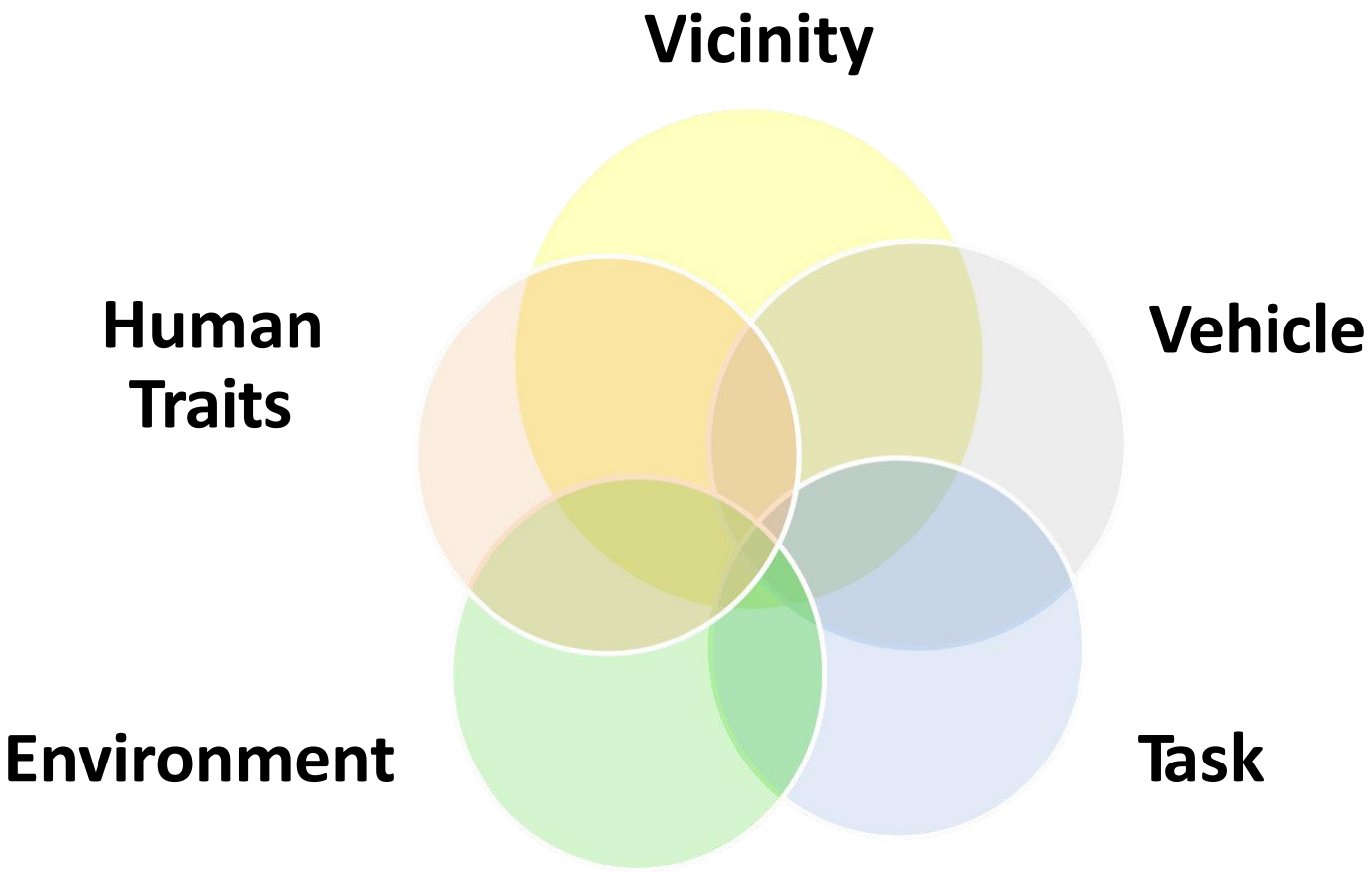


Poll Question #2

What do you think is the main reason for struck-by incidents on work sites? Choose one.

- ❑ Workers are focused on other tasks
- ❑ People are working in proximity to vehicles
- ❑ Traffic control plans missing
- ❑ Alarms are not heard

5 Elements Contributing to Workplace Struck-By Incidents



Vicinity

Vicinity

- Workers and vehicles working in close proximity
- Multiple contractors on site
- Work location
- Mixed traffic
- Traffic control plan

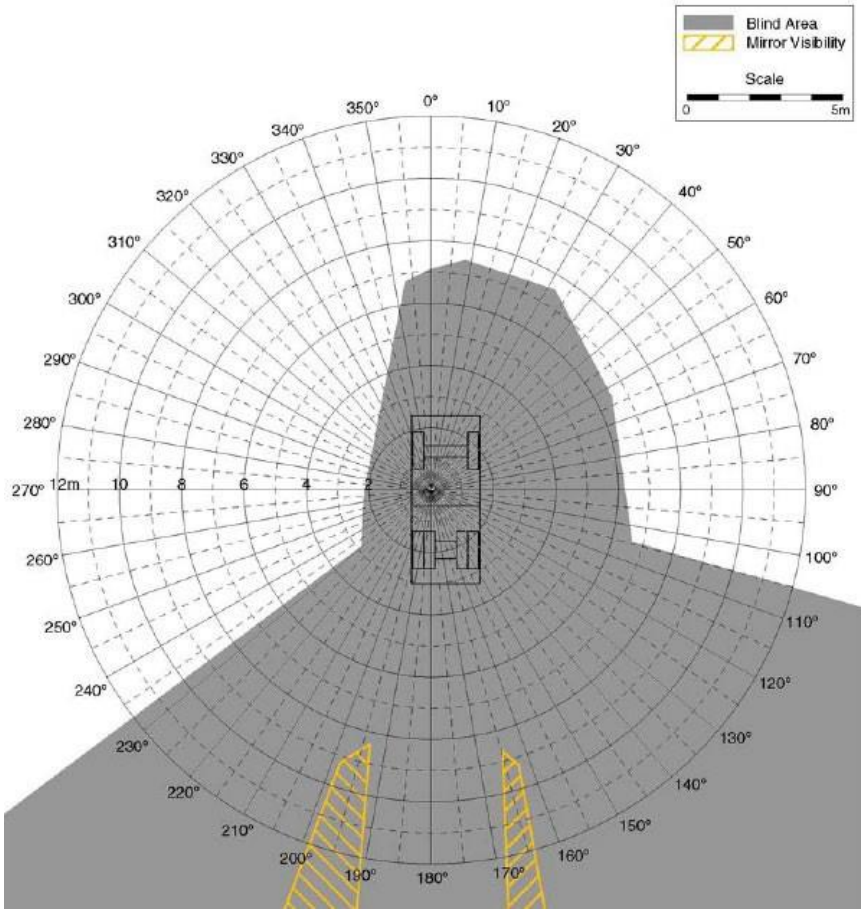
Vehicle

Vehicle

- Size, type, purpose
- Blind spots, obstructed view
- Feedback to driver - cameras
- Mirrors – position, size, shape, angle, maintenance, cleanliness, impacts depth perception
- Audible reverse alarm (to others nearby)

What is a Blind Spot?

Dump Truck (Manufacturer and Model)	GMC 3500HD
GVW	15,000 lb



https://www.cdc.gov/niosh/topics/highwayworkzones/bad/pdfs/catreport2.pdf

Task

Task

- Task requirements/complexity
- Positioning
- Focus of attention/line of sight
- Communication
- Personal Protective Equipment requirements

Environment

- Worksite Layout
- Hills or ramps
- Pathways
- Blind corners
- Location – congestion, busy, multi-use
- Obstructions
- Light levels
- Noise
- Distractions
- Weather

Human Characteristics

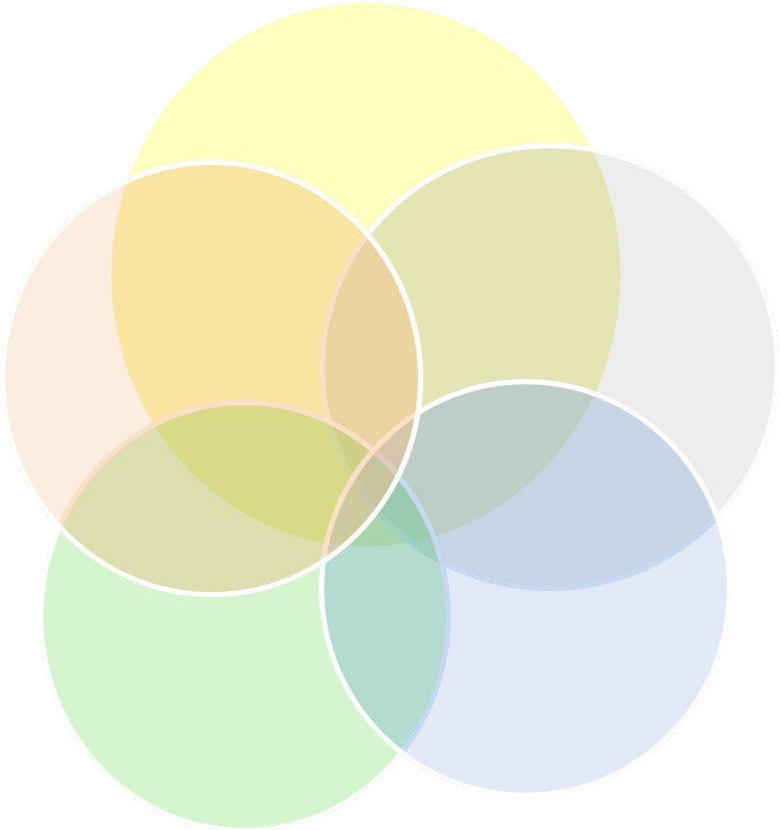
Human Traits

- Expectations
- Attention
- Line of sight
- Distance perception
- Hearing/loss

Consider ALL Elements

Vicinity

Human Traits



Vehicle

Environment

Task

Workers Compensation Act

Owner	Maintain the premises to ensure the health and safety of people on site Disclose full details of any potential workplace hazards so they can be eliminated
Employer	Ensure a healthy and safe workplace Provide OHS Program including training, supervision, safe work procedures, etc.
Prime	Written agreement to act as prime Coordinate H&S activities of all Establish and maintain H&S requirements

https://www.worksafebc.com/en/health-safety/create-manage/rights-responsibilities

Workers Compensation Act

Supervisor	Ensure the health and safety of all workers under your direct supervision Know and meet the WorkSafeBC requirements that apply to workers you supervise
Worker	Report hazards immediately Follow safe work procedures Use the protective clothing, devices, etc. Co-operate with H&S representatives, WorkSafeBC

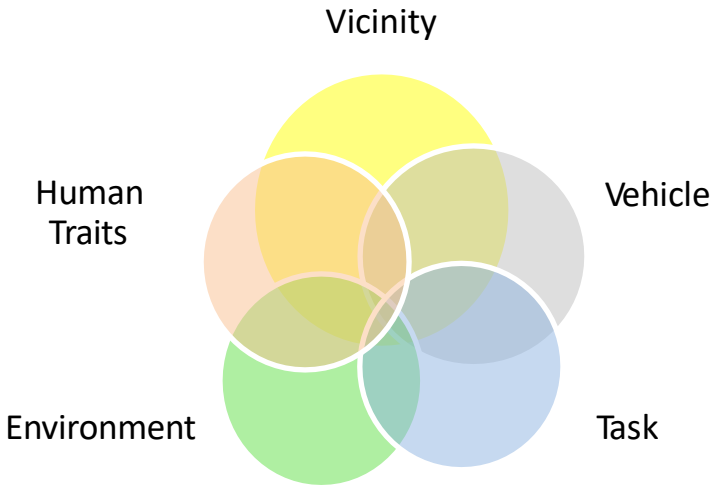
https://www.worksafebc.com/en/health-safety/create-manage/rights-responsibilities

Additional OHSR Requirements

- **Part 16.43 Separate pedestrian and mobile equipment traffic**
- Part 4.33 Arrangement of work areas – for safe movement of people, equipment, materials
- Part 18.2 – requirement to provide effective traffic control; adherence to the traffic control manual is “effective”
- Part 8 - PPE

Investigations

- WCA Sections 68 - 72
- Consider all elements of the workplace system
- Assess all elements that contribute to incidents



Factors to Consider

Task

Job requirements, line of sight

Location, position, PPE

Communication,

Policies, procedures

Vehicle

Type, use, driver feedback

Blind spots, mirrors, lights

Alarms, CCTV, traffic plans

Environment

Area congestion, hills, ramps

Obstructions, lighting, contrast

Pathways, noise, weather

Visibility, dust

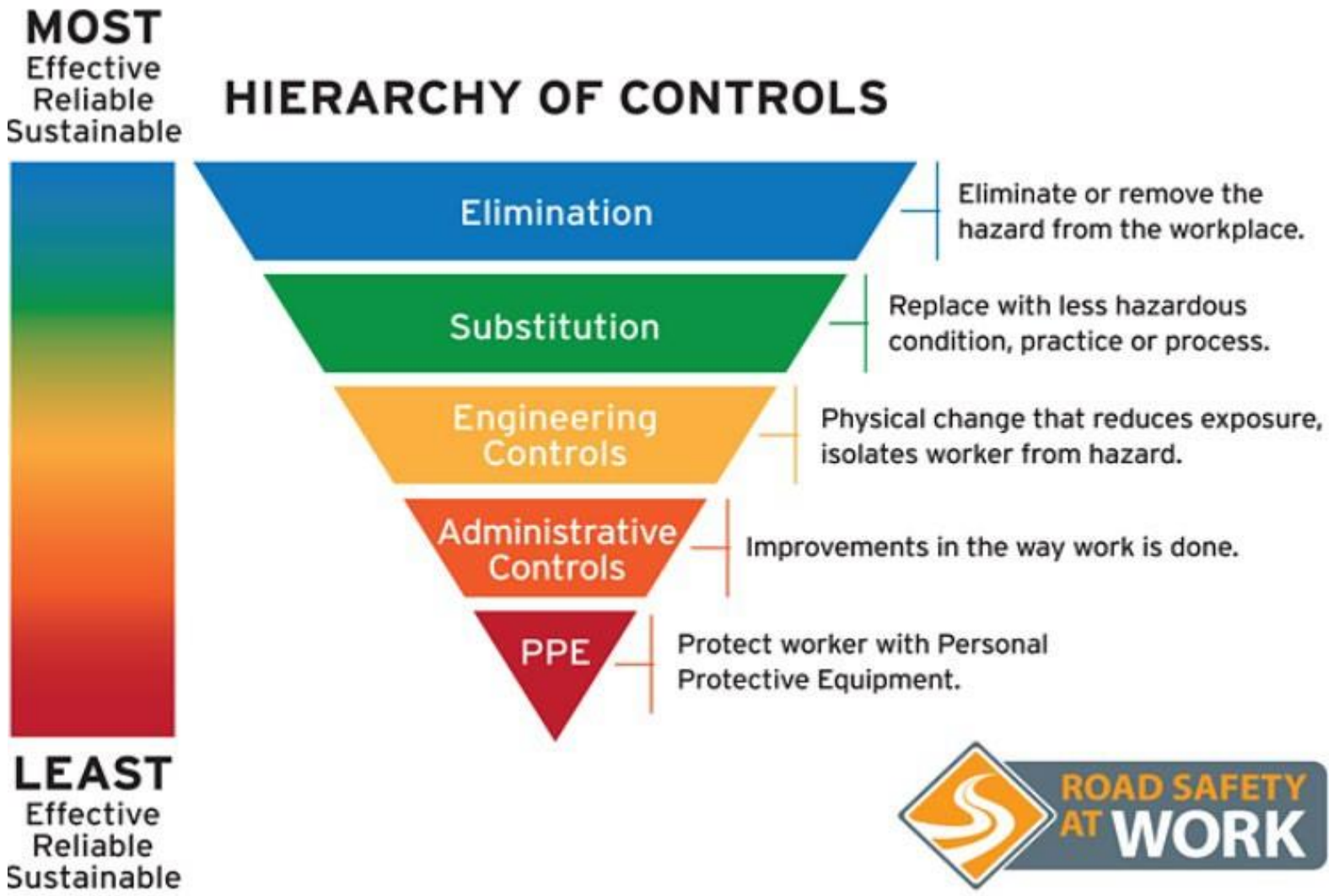
People

Focus of attention

Line of sight (both), hearing

Perception of distance

Hierarchy of Controls



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Elimination / Substitution

Separate vehicles from people

- **OHSR 16.43 Separate pedestrian and mobile equipment traffic**
- Plan and organize every project, yard, parking lot, so that vehicles and people are kept separate

  DO NOT reverse or turn around.

  DO NOT reverse from a side road into a main road.

- Develop and provide traffic control plans
- Substitute: vehicles

Control Hierarchy: Engineering

- Close proximity, motion sensors
- Blind spot detection systems
- Alarms, cameras
- Buffer vehicles, barriers
- Mirrors

Poll Question #3

Have you heard a broadband alarm before?

- ❑ **YES**
- ❑ **NO**

Tonal	Broadband
• Volume of 97 dB 112 dB SPL • Typical freq ranges 1000 to 3000Hz • Heard upto 3km • Single tone • Poor audibility with HPDs • Difficult to localize • Habituation	• Multiple tones “pschtt – pschtt” • Easier to locate/less confusion • Reduced environmental noise ‘annoyance’ • Sound dissipates

Warning Signs - Passive

- Location, language
- Must be first noticed
- Time needed to encode, comprehend and comply
- Must be able to override context/goals
- Characteristics must be different from environment

Administrative Controls

- Traffic Control Plans
- Journey management
- Safe Work Procedures
- Policies (e.g. designated work areas, use of electronics, using seatbelts, etc.)
- Supervision
- Training (e.g. driver training)

Personal Protective Equipment

Your Last Line of Defence

Summary

- ✓ **Vicinity** – Separate vehicles and pedestrians
- ✓ **Vehicle** – Use technology to reduce risk
- ✓ **Tasks** – Requirements influence position, focus, etc.
- ✓ **Environment** – Identify factors that can increase the potential for incidents
- ✓ **Humans** – conditions affect what is heard, seen and responded to

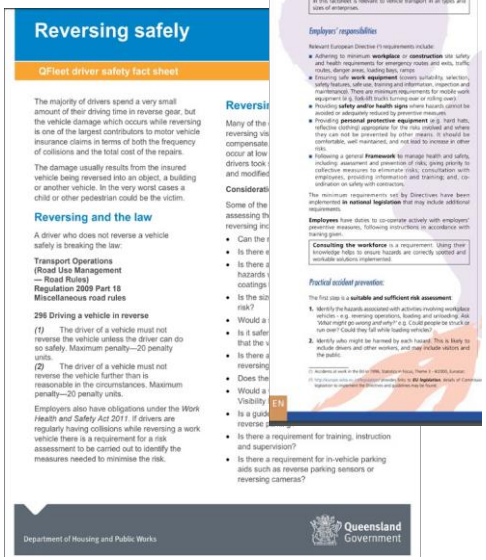
Take-Aways

- ✓ Understand why incidents happen
- ✓ Seek input
- ✓ Apply the hierarchy of controls
- ✓ Find resources for effective prevention at roadsafetyatwork.ca and worksafebc.com

Questions and Discussion

Hand-outs and Resources

We will be sending out the resources mentioned in the presentation along with supplementary materials and resource links.



Contact us with your questions

ROAD SAFETY AT WORK

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Visit our websites for more tools and resources

ROAD SAFETY AT WORK

https://roadsafetyatwork.ca

BCCSA
BC Construction Safety Alliance

https://www.bccsa.ca

WorkSafeBC

https://www.worksafebc.com

Thank You!

See next slide for a list of links to resources mentioned in this webinar

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Links to various resources mentioned in this webinar

BCCSA
Safety bulletin: Best Practice for Safe Backing and Equipment Blind Spots

Centers for Disease Control and Prevention
Construction Equipment Visibility

Cone Zone
Safety at the Roadside: What Workers Need to Know

European Agency for Safety and Health at Work
Preventing Vehicle Transport Accidents at the Workplace

Health and Safety Authority
Workplace Traffic Management

Infrastructure Health & Safety Association
Struck-by Hazards

Road Safety at Work
Investigating Motor Vehicle Incidents Tool Kit
Tool Kits Directory

WorkSafeBC
Distracted Attention - mobile phone use and walking WorkSafeBC Bulletin

Note: Links have not been updated since this webinar was presented