Workplace Safety North

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Mitigating exposure to occupational health hazards in Ontario's natural resources

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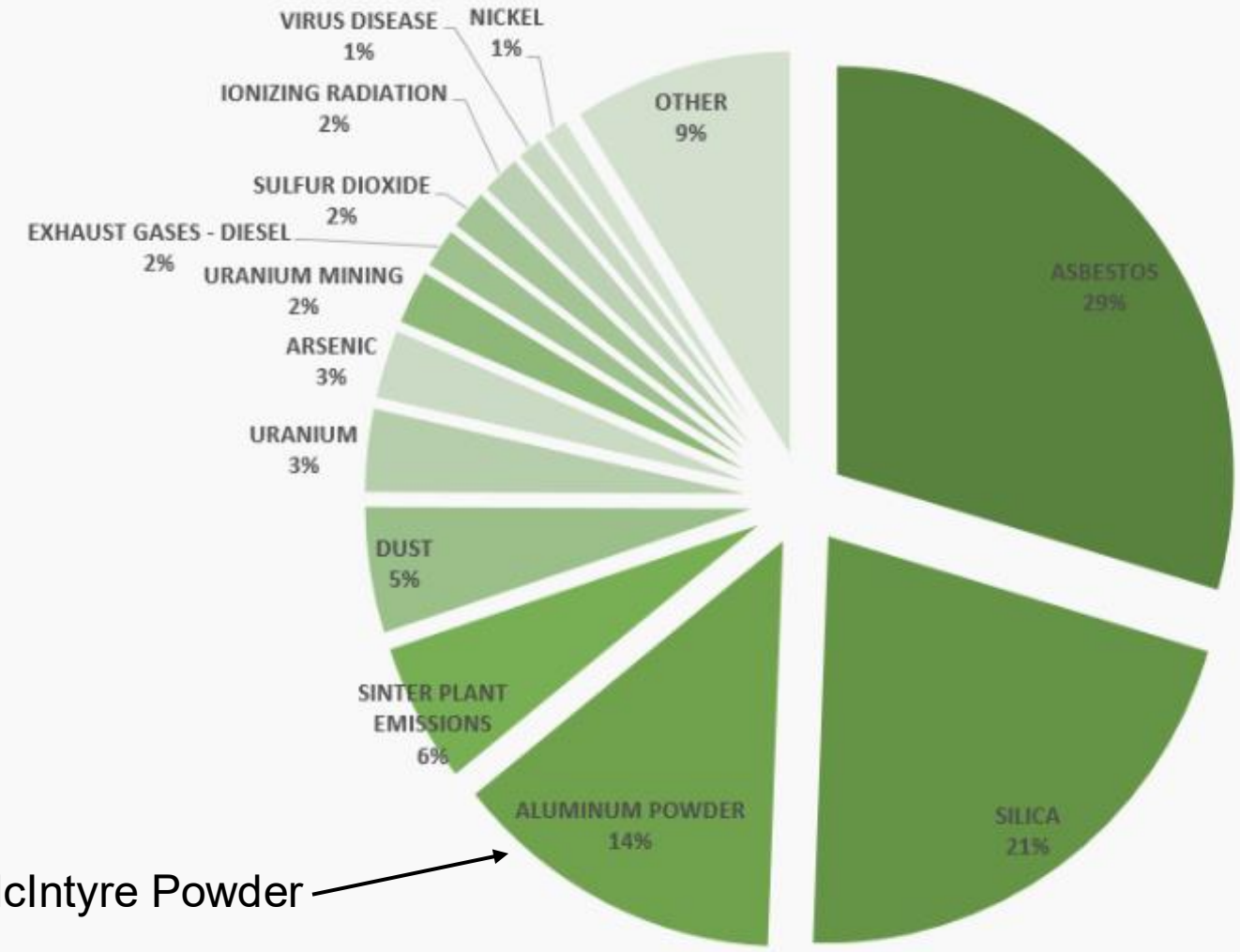
Workplace Safety North™

Mining

Top Occupational Disease Death Causal Agents

Asbestos and Silica are two major causing agents responsible for half of occupational disease deaths.



McIntyre Powder →

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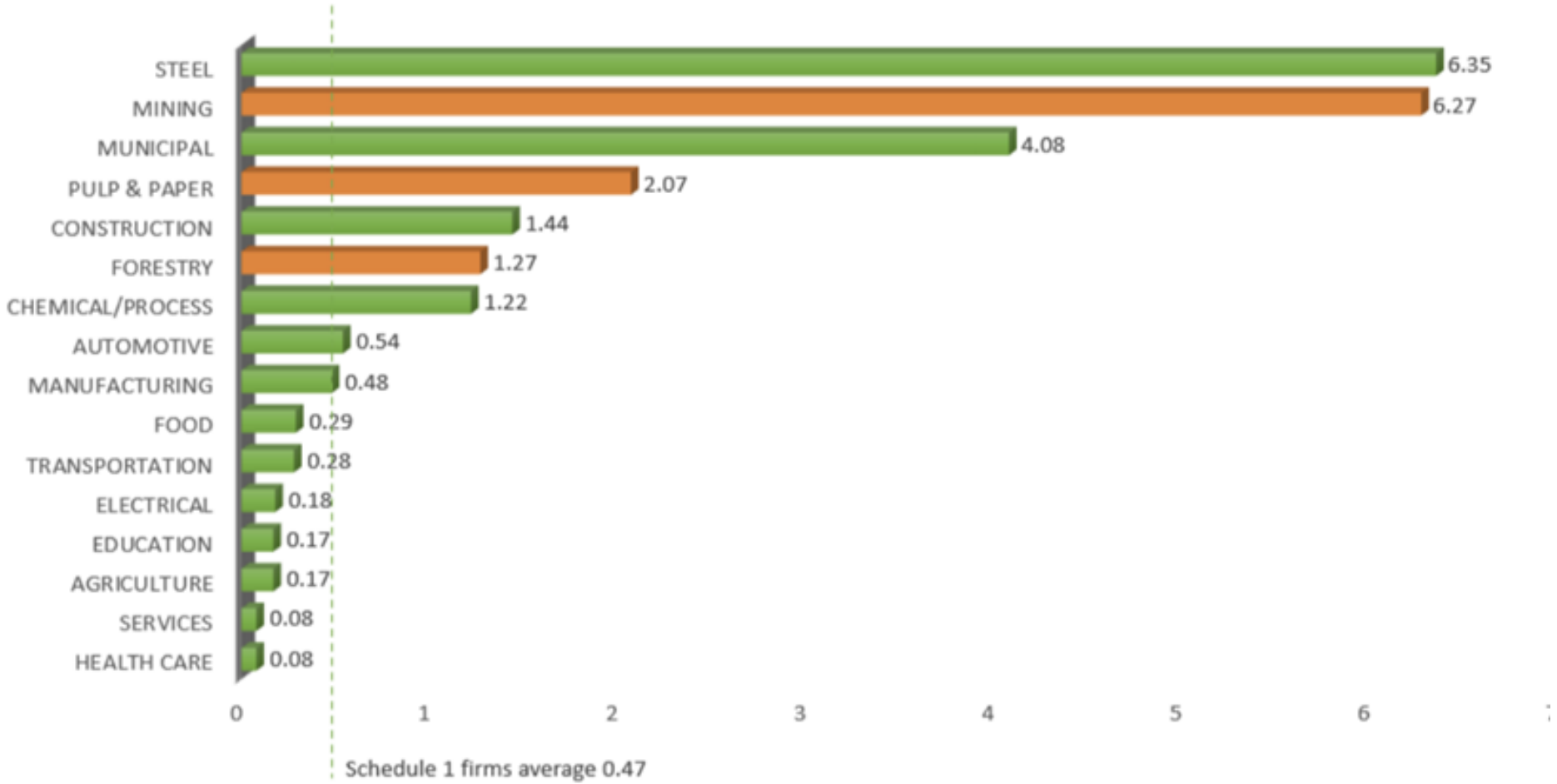
Ontario Occupational Disease Fatal Claims
Frequency per 10,000 FTE's
By Allowed Year: 2011-2021

Mining is the second largest (after Steel) industry in Ontario by disease fatal rate per 10,000 FTE's.



Source: WSIB, EIW, Claim Cost Analysis Snapshot, as of Mar. 31, 2022.

Protecting People in Ontario's Natural Resources Sectors

Funding Announcement:

- April 25, 2025: WSIB announced **$6.78 million** in funding to improve health and safety in Ontario's natural resources sectors.

Strategic Partnership:

- Collaboration between **WSIB**, **Workplace Safety North (WSN)**, and the **Institute for Work and Health (IWH)**.
- Focused on enhancing **hygiene monitoring** and reducing exposure to **workplace hazards**.

Key Objectives:

- Drive **proactive health and safety improvements**.
- Empower workplaces to manage **invisible health risks**.
- Build **confidence** in safe working environments.

Protecting People in Ontario's Natural Resources Sectors

WSN's Role:

- Leading the initiative with **specialized training materials**.
- Providing **hands-on coaching** and **real-time hygiene monitoring**.
- Aiming to build **capacity** for risk identification and mitigation.

IWH's Role:

- Conducting **independent evaluations** of training effectiveness.
- Assessing impact on **worker behavior** and **exposure reduction**.

Leadership Quotes:

- Janine Dyck (WSIB): Emphasized the need for **lasting change** and **investment** in safety.
- Mike Parent (WSN): Highlighted the importance of **empowering workplaces**.
- Peter Smith (IWH): Stressed the value of **evidence-based evaluation**.

Vision Statement:

- Reinforces WSN's goal: **"Every worker returns home safe and healthy—every day."**

Partnership with WSIB

- The funding was set up to span five (5) years with an annually funding reapplication and rescope.
- Important to highlight that there are uncertainties with how the project will proceed every year.

Research and data will help pave the path.

- Theories we want to try over the years:
  - Equip the operations with a degree of capacity for OH hazard identification.
  - Equip the operations with a degree capacity for OH hazard identification and sampling for assessment (by a professional) purposes.
  - Equip the OHS system to help firms accurately assess occupational illness hazards/exposures by upskilling internally.

WSIB Ontario

Problem and Knowledge Gap

Workers in Ontario's natural resources sector face ongoing exposure to respirable hazards.

Many workplaces lack access to trained occupational hygiene professionals (especially in northern Ontario).

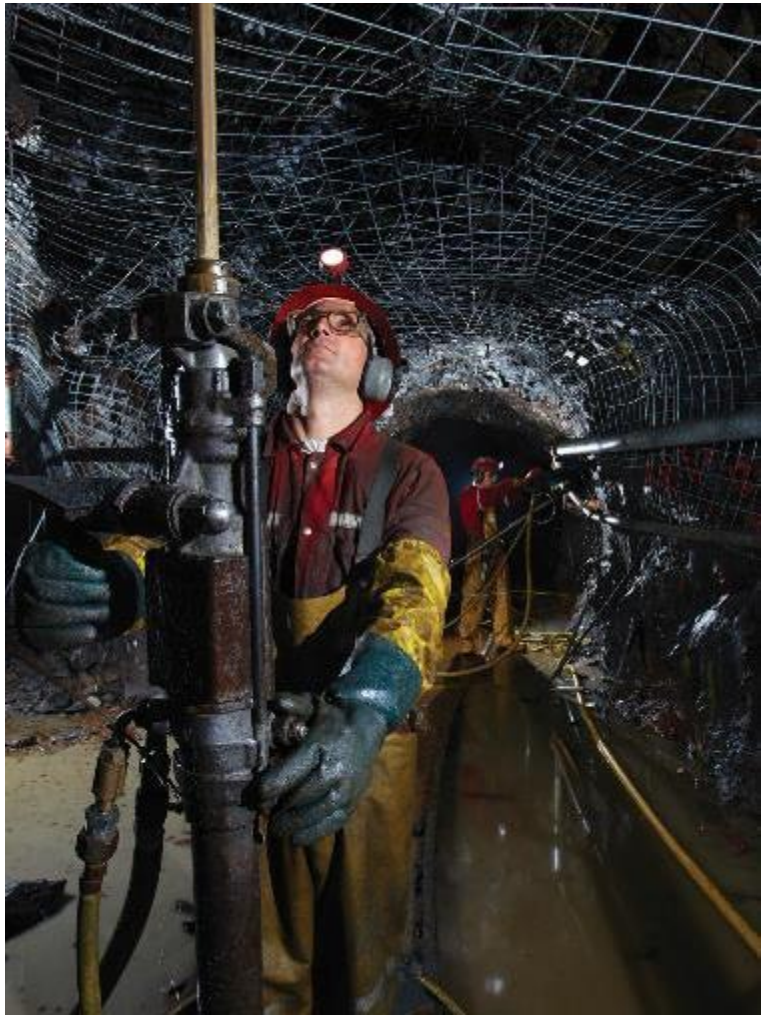
The sector has one of the highest occupational illness fatality rates in the province.

Most organizations struggle with hazard identification due to limited resources or skills.

There is a significant gap in accessible, practical training—especially in industrial hygiene.

This project will aim to deliver field-level training to build competency where specialists are unavailable.

The goal: reduce exposure, prevent illness, and meet stricter compliance standards.



Scope of the Issue and Importance

- Occupational illnesses cause serious harm, financial loss, and regulatory risk.
- Many workplaces lack the knowledge and skills to manage health hazards effectively.
- **This project aims to:**
  - Reduce exposure to workplace health hazards
  - Prevent occupational illnesses and diseases
  - Improve compliance with regulatory standards
- **Closing this gap will:**
  - Improve worker health and safety
  - Lower fatalities, injuries, and compensation claims
  - Support a scalable, right-fit framework based on workplace maturity
  - Enable long-term, sustainable occupational health management

Primary Objectives

By filling critical gaps in skills and knowledge, this project will create scalable, practical solutions for improving worker health and safety in Ontario's natural resources sector and beyond, achieving the following objectives:

1) Competency: Develop a scalable and repeatable maturity-based competency framework that equips workplaces with skilled resources to identify, assess, and control occupational health hazards.

2) Impact: Demonstrate reductions in exposure to harmful occupational health hazards by implementing control measures.

3) Context: Identify factors that influence the successful implementation of occupational hazard controls.

4) Reach & Capacity: Increase the number of competent resources across the province to support long-term occupational illness prevention efforts.

Primary Objectives

5) Accessibility:

- Modular design supports accessibility for firms at different OHS maturity levels
- Avoids a “one-size-fits-all” model that can overwhelm or disengage some firms
- Tailors support to each firm’s needs, encouraging meaningful participation
- Ensures every firm can see themselves in the framework
- Provides a clear, inclusive path with sequenced steps for long-term success

Expected Outcomes and Benefits: Short Term

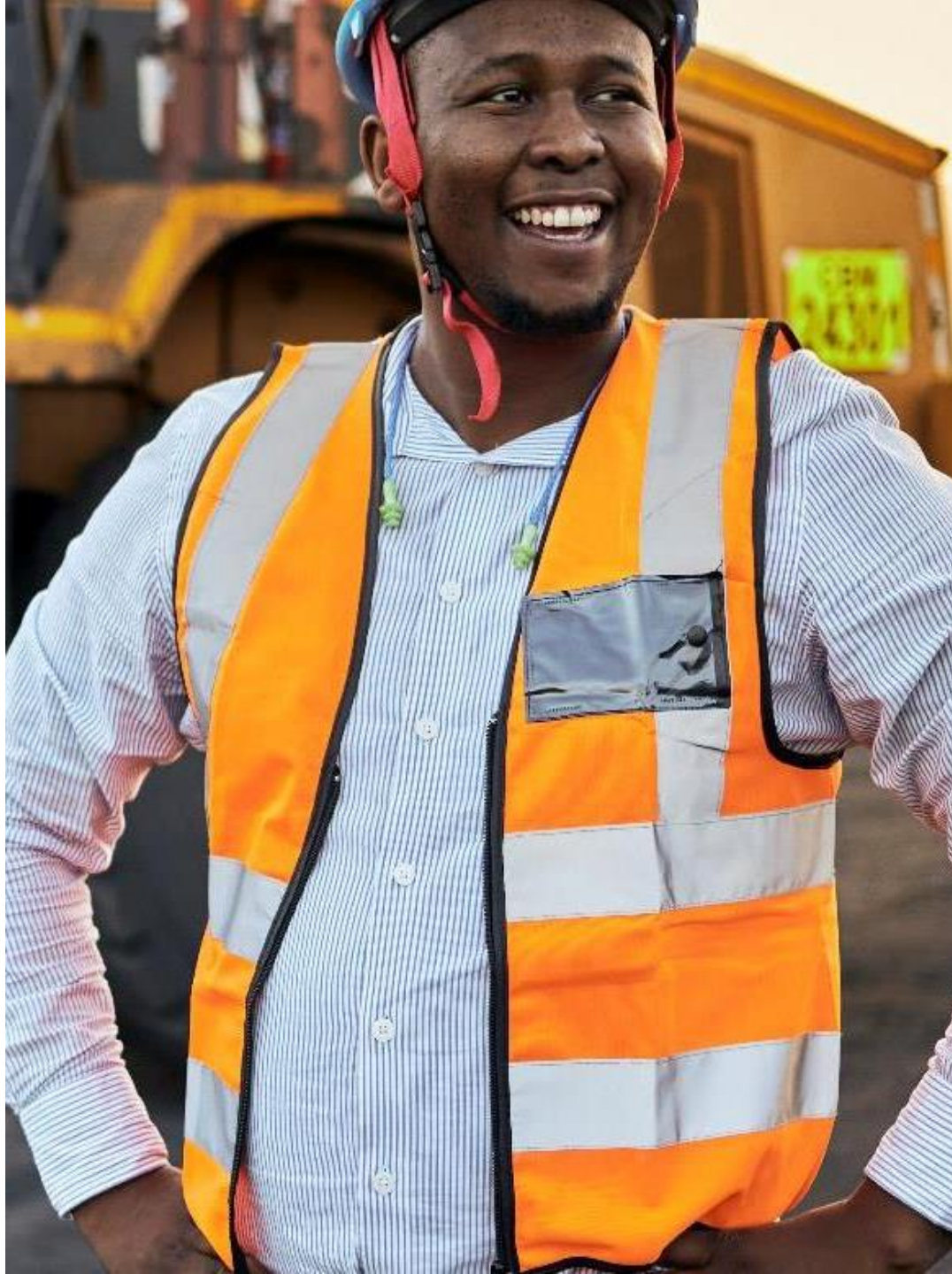
- Reduction in worker exposure to harmful occupational health hazards in Ontario's natural resources sector through 'right-fit' training and consulting support and hazard control practices.
- Enhanced capacity among workplace personnel to identify, assess, and implement controls for occupational health hazards, supported by hands-on learning and coaching.
- Improvements in compliance with the focus on occupational health hazards awareness, assessment and control training.

Expected Outcomes and Benefits: Long Term

- Development of a tiered, repeatable, scalable competency framework for occupational illness prevention applicable across multiple sectors in Ontario.
- Sustainability opportunity through the support of the Ontario health and safety system (prevention, enforcement, insurance).
- Reduction in occupational illness lost-time injury and fatality claims through competent risk management including the application of control measures.
- Increased workplace competency, equipped to manage occupational hazards in compliance with regulatory standards.
- Safer and healthier Ontario workforce, minimize impact on workers and their families.

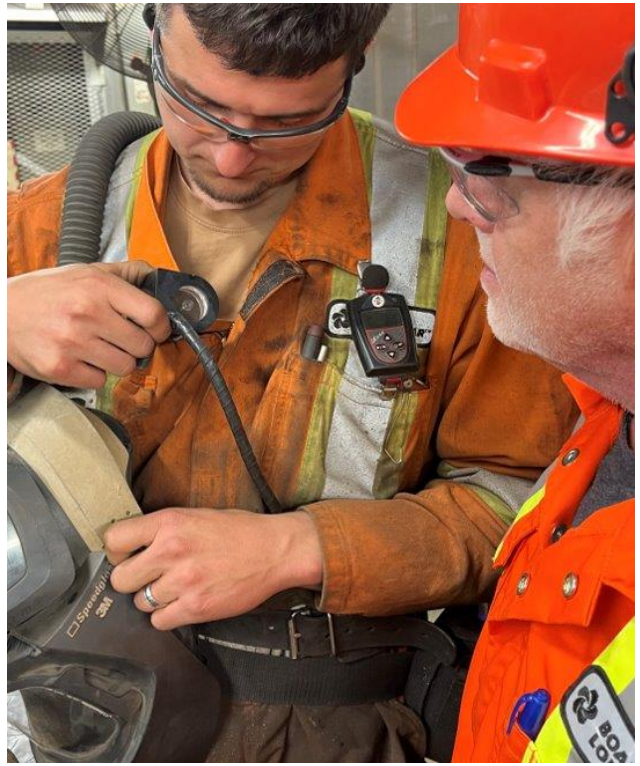
Practical Applications and Impact

- Supports WSIB’s efforts to reduce occupational illness occurrence and claims, leading to less harm, lower costs and improved worker health outcomes.
- Provides a structured approach to occupational health hazard management, ensuring workplaces can proactively identify and mitigate risks.
- Addresses skill gaps in occupational health hazard management, empowering non-specialist personnel to contribute effectively to hazard control – ensuring every worker goes home safe and healthy.



Measures of Progress and Success

- This work will improve workplace health and safety outcomes, support the achievement of WSNs, MLITSD/CPO and the WSIB's prevention goals, and establish a model for managing occupational health hazards province-wide (and beyond).
- Quantitative: knowledge assessments, number of trained personnel, number of firms moving through maturity model, and control implementation impacts.
- Qualitative: Surveys on self-efficacy, workplace health and safety impacts, feedback on the competency framework's practicality and usability (used to inform Year Three scope of work (2027)).
- Based on maturity/experience level of the firm participating:
    - Select assessment and/or monitoring data to determine/confirm hazard and degree of exposure/risk.
    - Hazard control recommendations and implementation to reduce exposure to health harm.
    - Periodic assessment and/monitoring data to confirm control effectiveness and long-term reductions in hazard exposure levels.



Key Activities Proposed

Project Implementation & Research Plan

- Ongoing partnership with IWH to:
  - Define research plan
  - Collect data
  - Evaluate intervention effectiveness
  - Year One (2025) competency framework refined into a maturity model
- Training delivered through:
  - eLearning modules
  - Hands-on workshops
  - In-field hazard-specific demonstrations and coaching

Institute for Work & Health | Research Excellence Safe Work Healthy Workers

Key Activities Proposed

Three-Tiered Intervention Model:

- **Tier 1:** Accessible eLearning (in-person delivery for remote areas)
- **Tier 2:** Regional workshops with hands-on guidance from WSN specialists
- **Tier 3:** Fieldwork with WSN and client shadowing for advanced skill development

Goals and Outcomes:

- Meet clients where they are through an inclusive, scalable model
- Equip workplaces with tailored OHS competencies
- Collect data on effectiveness and impact of each tier
- Expand reach across Ontario’s natural resources sector
- Support long-term, sustainable occupational illness prevention

Measure of Success

- The project's success will be demonstrated by the implementation of a tiered scalable framework that equips workplace resources with the skills needed to identify, assess, and control occupational hazards at varying levels.
- Success will also be measured by an increase in our reach, resulting in more firms involved in interventions at varying levels resulting in an increase in hazard awareness and action.
- Lastly, an increase in competent personnel across the province will signify enhanced capacity for proactive occupational hazard management and prevention, signifying that this is a sustainable approach.

Importance to the WSIB

- Builds on WSIB's existing Year 1 investment (2025)
- Targets high occupational illness fatality rates in Ontario's natural resources sector
- Aims to reduce worker risk and related compensation costs from lost-time injuries
- Advances research on a scalable framework for workplace health hazard control
- Equips workplaces with skilled personnel to assess and manage health hazards
- Lays the groundwork for a potential future standard within Ontario's health and safety system
- Supports a consistent, tiered path:
    - Education → Risk Assessment → Controls → Practical Application
    - Aligns training to firm maturity levels for lasting prevention practices
    - Reduces workplace exposures, long-term claims, and liabilities
    - Contributes to a healthier workforce in high-risk sectors
    - Lowers harm and loss for Ontario families
    - Strengthens the long-term resilience of the workers' compensation system

Firms

…goal of capturing the challenges that <u>all</u> firms face…a realistic “snapshot”

- Representation from all industries, geographies, and sizes with firms that:
  - Have IH issues that have not been properly assessed
  - Can’t afford our services but have a great culture
  - Aren’t just looking for a “freebie”
  - Have individuals who want to become competent
  - Have workers who are at a known risk
  - You feel will be committed to implementing change

Qualitative IH Review and Risk Assessment

- Interviews
- Injuries and incidents review
- Review of SDS and processes
- Review of existing controls, including PPE
- Job task observations
- Review of roles
- Identify occupational health hazards requiring quantitative assessment (sampling or monitoring)
- Development of anticipated Similar Exposure Groups (SEGs) for sampling/monitoring

Quantitative Assessment

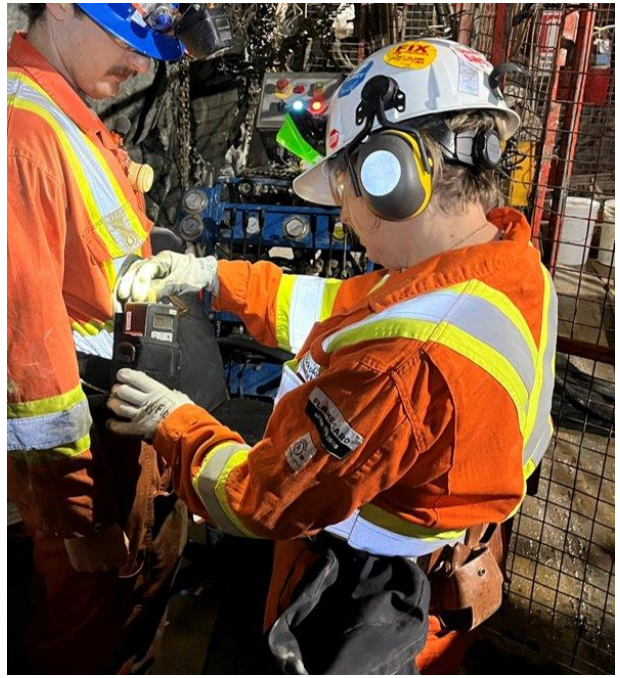
- Based on findings from Qualitative IH Review and Risk Assessment (including equipment, sampling/monitoring plan)
- Number of samples per SEG depends on size of SEG (following AIHA / NIOSH approach)

Risk-based Decision Making using AIHA's Exposure Rating and Control Categories Model (Mulhausen, 2023)

Exposure Control Category		Recommended Actions
	0 (<1% of OEL)	No action
	1 (<10% of OEL)	general HazCom
	2 (10-50% of OEL)	+ chemical specific HazCom
	3 (50-100% of OEL)	+ exposure surveillance, medical surveillance, work practice analysis
	4 (>100% of OEL)	+ respirators & engineering controls, work practice controls, validate respirator selection
	Multiples of OEL (e.g., based on respirator APFs)	+ immediate engineering controls or process shutdown, validate respirator selection

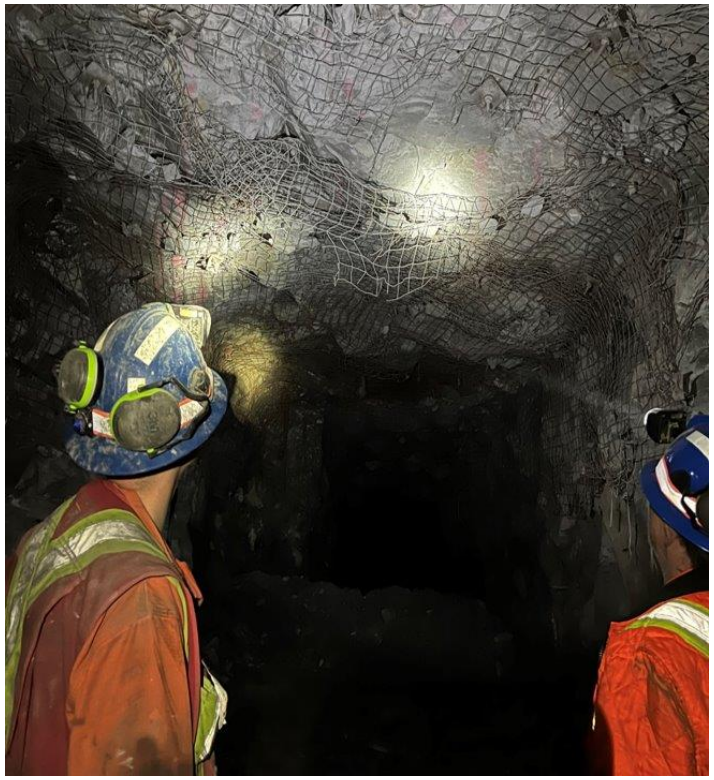
Internal Upskilling

- Opportunity for non-OH/IH staff to participate and contribute to the:
  - Qualitative IH Review and Risk Assessment
  - Online, Instructor-Led Training
  - Hands-On Training
  - Quantitative Assessments (Methodology, Instrumentation, Data Analysis and Interpretation
  - Control measure implementation



Upskilling Programs

- Diesel Particulate Matter
- Respirable Crystalline Silica as Quartz
- Noise
- Wood Dust (Hardwood and Softwood)
- Welding Fumes / Metal Dust
- Volatile Organic Compounds
- Isocyanates
- Ionizing Radiation
- Others?



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- Leidel, N. A., Busch, K. A., & Lynch, J. R. (1977). *Occupational exposure sampling strategy manual*. U.S. Department of Health.
- Strengthening Health and Safety in Ontario's Natural Resources Sector Funding Announced to Protect Workers from Invisible Health Hazards | Workplace Safety North. May 6, 2025.

Thank you for helping to make workplaces safer

For additional information, please contact:

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