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ADB Health, Safety and Security (HSS)

Awareness Training Course

ADB

Welcome and Introductions

- See Workshop Agenda

Presented by:

- Felix Nii Tetty Oku
- Stephen Sayle
- Michelle Dooley
- Earl Alcon

Occupational Health and Safety

SPEAKER

Felix Oku

Principal Safeguards Specialist OSFG

Programme Overview

1. Introduction
   HSS at ADB
2. Safety Culture and Risk Management
3. Workplace Health and Safety
4. Community Health and Safety

Programme Overview

5 Site Security

6 Health and Safety Incident Reporting and Investigation

7 Emergency Preparedness and Response

Key Objectives

- understanding health and safety responsibilities

Key Objectives

- recognize how to identify, control and monitor workplace hazards and risks

Key Objectives

- evaluate HSS risks and responsibilities associated with ADB-funded projects, and the contractors that work on them

GROUP DISCUSSION:

What is your knowledge and experience with safety programs and/or serious incidents… ?

Module 1
Introduction

UNDERSTAND THE PURPOSE, INTENT, AND SCOPE OF THE ADB:

Safeguard Policy Statement (SPS)

OBJECTIVES

Understand the SPS occupational health and safety (H&S) requirements

Appreciate potentially significant occupational health and safety risks /impacts associated with ADB projects

Occupational H&S quiz to reinforce understanding

OCCUPATIONAL H&S

According to the ILO, globally almost **two million workers** still die **every year** due to exposure to 19 occupational risk factors alone. It is estimated in Asia and the Pacific, work-related diseases and injuries are responsible for **at least 1.2 million deaths**, and the loss of 55 million healthy years. Occupational accidents and diseases **are all preventable**.

https://www.ilo.org/asia/areas/safety-and-health-at-work/lang--en/index.htm#:~:text=It%20is%20estimated%20in%20Asia,and%20diseases%20are%20all%20preventable

https://www.youtube.com/watch?v=FI1XrdBJIUI

Leading cause of Fatal incidents in the Construction Industry

OSHA's "Fatal Four" - The leading causes of death in the construction industry

The Bureau of Labor Statistics reported 5,190 fatal work injuries in the U.S. in 2021. Of those deaths, nearly 20% occurred in construction, second only to transportation and materials handling. Fortunately, the "Fatal Four" leading causes of construction deaths – falls, stuck-by, electrocutions, and caught-in or -between -- are preventable by using these tips.

1. Use fall protection.

Falls caused 37% of construction deaths in 2021. OSHA standards require fall protection any time a construction worker is 6 feet or more above the ground.

2. Ground or double-insulate all electrical equipment.

Electrocution accounted for about 8% of construction worker deaths in 2021. Among the electrocution risks on construction sites are exposed wiring and wet conditions near outlets; contact with overhead power lines; energized conductors or circuit parts; poorly maintained power tools and cords; and lightning strikes. Strictly following OSHA electrical standards can prevent these accidents.

3. Know the greatest risk of being struck by an object on a job site.

Another 8% of construction deaths in 2021 were due to workers who were struck-by objects that were swinging, falling, or misplaced. These included falling objects due to rigging failure; loose or shifting materials; equipment malfunctions; and vehicle or equipment strikes. Be aware of all possible struck-by hazards including dropped tools and flying objects, and review these tips and resources.

4. Use strict safety precautions when surrounded by moving vehicles, unguarded heavy equipment, or cave-in hazards.

About 5% of construction worker deaths in 2021 were from employees getting caught in or between machines, devices, tools, or trenches including workers caught between moving or rotating equipment or collapsing structures or materials. Ensure control measures are in place and workers are trained to prevent the most common caught-in and caught-between hazards including getting pulled into unguarded machinery; caught between equipment and a fixed object; or trapped in a masonry wall, trench, or excavation collapse.

Occupational Health and Safety

Policy Provisions Requirements

- The **borrower/client** will provide **workers** with a safe and healthy working environment, taking into account risks inherent to the particular sector and specific classes of hazards in the borrower's/client's work areas, including physical, chemical, biological, and radiological hazards.
- Prevent accidents, injuries, and disease arising from associated with or occurring during the course of work.
- Emergency preparedness and response arrangements at the workplace.
- Recognizes the Hierarchy of Risk Control – *avoid, minimize, manage*
- Refers to internationally recognized standards such as WBG EHS.
- Document and report OHS accidents, diseases and incidents

H&S Risk Assessment

		Consequence		
		Slightly Harmful	Harmful	Extremely Harmful
Likelihood	Likely	Medium Risk	High Risk	Extreme Risk
	Unlikely	Low Risk	Medium Risk	High Risk
	Highly Unlikely	Negligible Risk	Low Risk	Medium Risk

A risk matrix is used during a risk assessment.

A risk matrix takes the likelihood of the risk and the consequence severity to assign a level to the risk.

H&S Management Planning

Mitigation Hierarchy

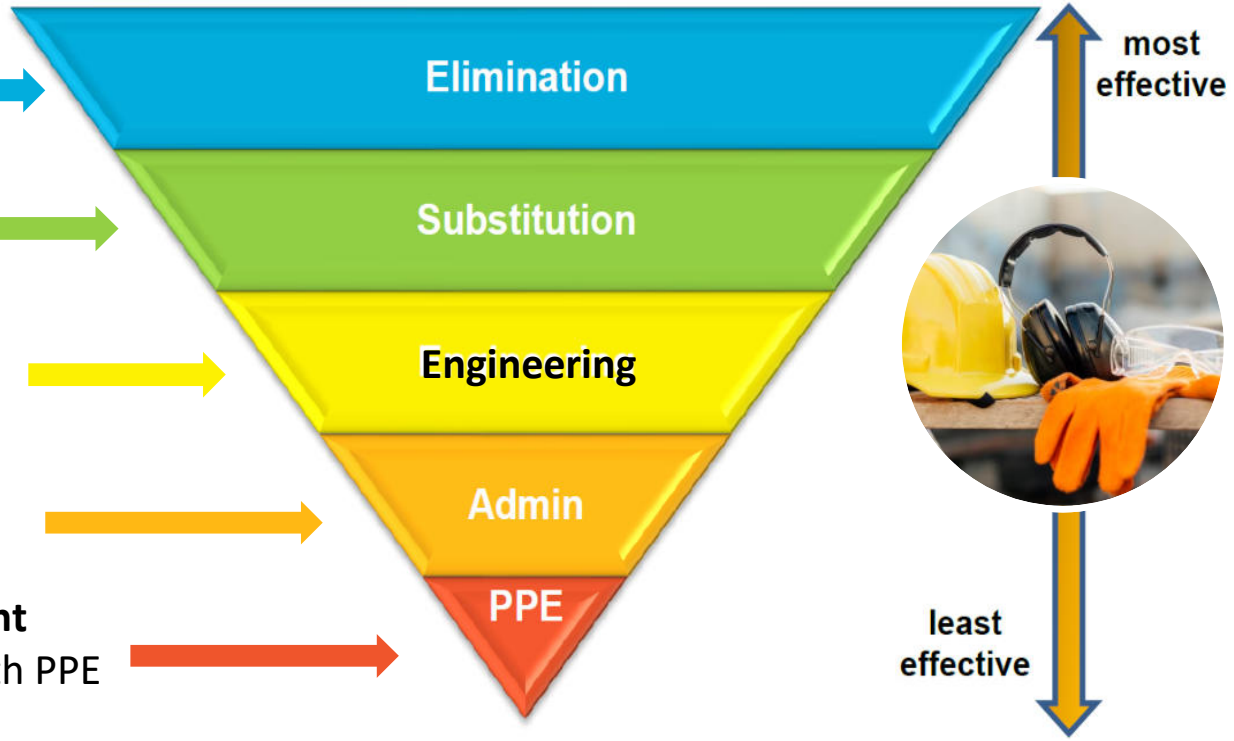
Elimination—physically remove the hazard

Substitution—replace the hazard

Engineering controls—isolate people from the hazard

Administrative controls—change the way people work

Personal protective equipment (PPE)—protect the worker with PPE



H&S Management Planning – Mitigation Hierarchy

Environment Impact Assessment [EIA]
Initial Environmental Assessment [IEE]

Environment Management Plan [EMP]

Construction EMP

Operations EMP

ADB Borrower/Client
Legal agreement
with ADB

Health and Safety Management Plans
(including Emergency Response Plan)

Site Specific H&S Plan

Work Specific H&S Plan

Operations/ Maintenance and Decommissioning H&S Plan

Borrower/
Contractor
Requirements &
Supervision
Consultant/
engineer

H&S Monitoring

- Regular H&S inspections to ensure measures employed and effective
- Regular testing of H&S equipment
- Surveillance work area and workers health
- Document all training and emergency drills
- Set up a worker's GRM (not just for local community)
- **Report and record** all occupational accidents and diseases (fatal, non fatal, days lost)
- **Report, record, and investigate** all incidents or dangerous occurrences (near miss)

Lagging and Leading Health and Safety Indicators

Lagging Indicators	Leading Indicators
Total lost work days	Safety/health meetings
Restricted work days	Supervisor training
Number of fatalities	Employee training
Injuries/illness rate	Number of inspections
Asset/property damage	No. of audits/surveys
Vehicle mishaps	No. of self-inspections
Near-miss incidents	Reward/recognition
Chemical releases	Employee turnover rate
WC trends and amount	Observations/accidents
Experience modification	Risk/hazard assessment

Performance Target

Zero Accidents, Zero Incidents, Zero Tolerance!

Worker's Accommodation

Workers' Accommodation: Processes and Standards

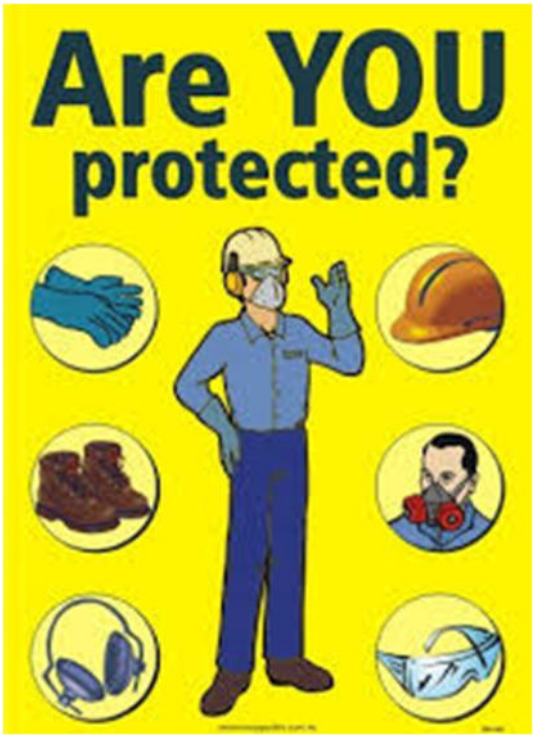
A Guidance Note by IFC and the EBRD

https://www.ebrd.com/downloads/about/sustainability/Workers_accomodation.pdf

Figure 1: Workers' Accommodation, Assessment, and Management Process

Need Assessment	Is there a need for workers' accommodation?	» Assess the availability of the local workshop » Assess the availability of existing housing
Impact Assessment	What are the expected impacts (positive and negative) on the communities?	» Determine specific impacts of the workers' accommodation construction phase (including security and involuntary resettlement) » Assess existing community infrastructures, services, and facilities » Understand the local business and employment context » Give special attention to community health and safety issues and social cohesion » Think about the consequences of dismantling and reinstatement
Construction	Which accommodation standards are needed?	» Identify and review the international, national, regional, and sectoral regulations which address workers' accommodation » Apply mandatory provisions and use non-binding provisions as guidance » Apply at least the minimum requirements set out in this guidance note
Management	What management systems are required?	» Design management plans covering health and safety, security, workers' and communities' rights » Appoint the right staff or contract the right companies » Implement management plans » Set up complaint/grievance and conflict resolution mechanisms (for both workers and communities) » Review policies

Occupational Health and Safety Quiz



Questions

Which labor issue is not related to occupational H&S?

1. Worker's salaries
2. Construction camp living conditions
3. Hours of work
4. Underage workers

0%	0%	0%
2.	3.	4.

In what order should preventative & protective measures be applied?

1. Provide PPE, control, minimize, eliminate
2. Eliminate, control, minimize, provide PPE
3. Control, minimize, provide PPE, eliminate
4. Provide PPE, eliminate, control, minimize

0%	0%	0%
2.	3.	4.

What are the top three causes of construction accidents?

1. Fire, explosions, floods
2. Injuries from machinery, collapse of excavations, exposure to noise
3. Falls from height, struck by falling objects, collisions with vehicles
4. Confined spaces, electrocution, exposure to hazardous substances

0%	0%	0%
2.	3.	4.

Which of the following is not needed in toilet and washing facilities?

1. Air freshener
2. Segregated facilities
3. Hot and cold running water
4. Soap and hand drying facilities

0% 0% 0%

2. 3. 4.

What hazards are these workers exposed to?

1. Standing on debris, sharp objects penetrating feet.
2. Dust or flying objects entering eyes, risk of abrasion or bruises to hands
3. Struck by falling object from above
4. All of the above

0%	0%	0%
2.	3.	4.

What other PPE should be worn by these workers?

1. Enclosed shoes with steel toe cap and sole
2. Eye protection and gloves
3. Hard hat
4. All of the above

0% 0% 0%

2. 3. 4.

What is the level of risk to this worker?

1. None
2. Low
3. Moderate
4. High/Extreme

0% 0% 0%

2. 3. 4.

What is most appropriate way to address hazard?

1. Design to avoid expansion gap
2. Provide workers with a safety harnesses
3. Install guardrails on edge of gap
4. Develop a response plan for falls

0% 0% 0%

2. 3. 4.

What hazards is this worker exposed to?

1. Severe cuts and lacerations
2. Fragments of shattered disc lodge in eyes or other body part
3. Fire
4. All of the above

0%	0%	0%
2.	3.	4.

What measures can address the hazards?

1. Correct PPE
2. Guard, automatic cut-off in handgrip and training on use
3. Fire extinguisher
4. All of the above

0% 0% 0%

2. 3. 4.

For a large construction camp what communicable disease prevention measures can be taken?

1. Screening of construction workers
2. Health awareness initiatives
3. Provision of free health services
4. All of the above

0% 2.

0% 3.

0% 4.

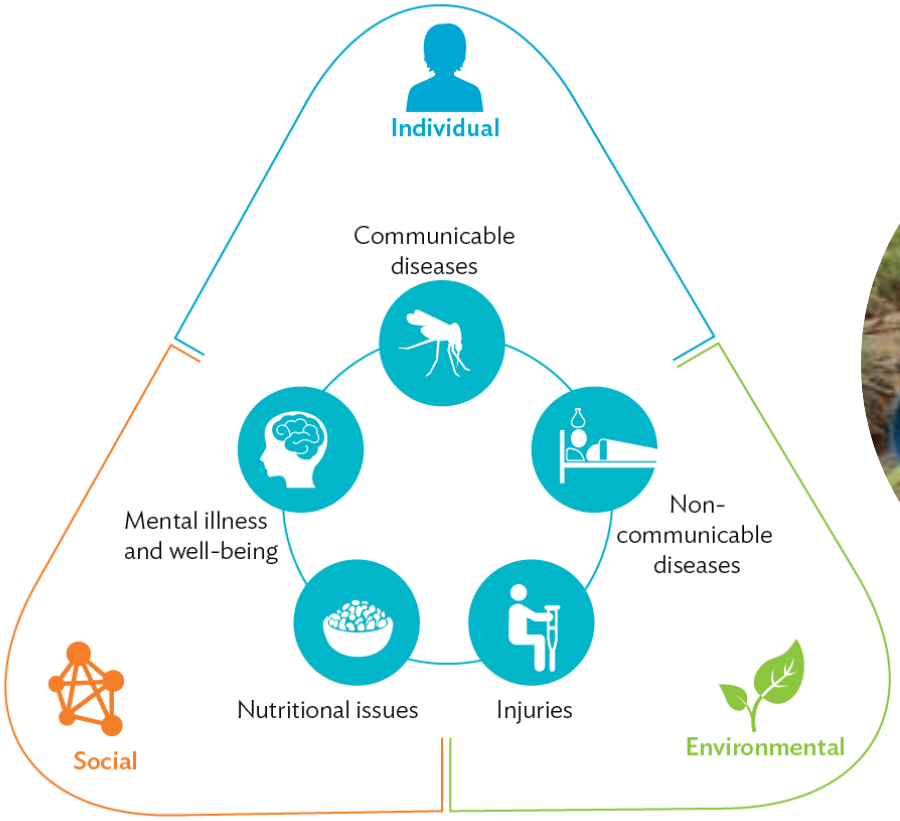
Objectives

Understand the SPS community health and safety requirements

Appreciate potentially significant community health and safety impacts/risks associated with ADB projects

Community H&S quiz to reinforce theory

Community Risks/Impacts



SPS Requirements (community)

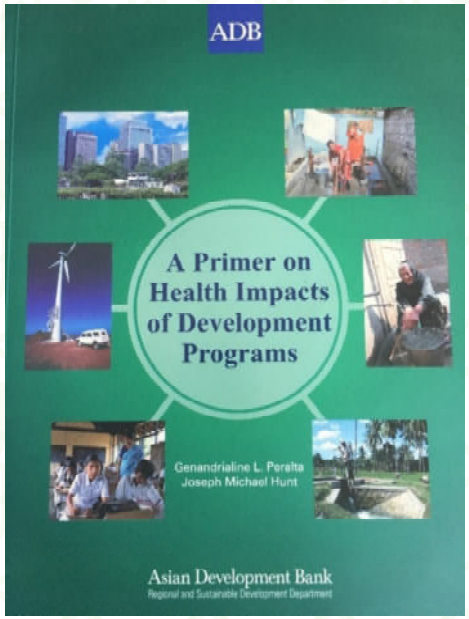
- Identify and assess risks/impacts on the safety of affected communities
- Establish preventative measures to address them
- Favor the prevention or avoidance of risks over minimization and reduction (management hierarchy)
- Consider accidental and natural hazards with particular attention to publicly accessible components and where structural failure could result in injury to the community
- Avoid or minimize exacerbation of impacts caused by natural hazards as a result of project land use change

SPS Requirements (community)

- Inform affected communities of significant hazards
- Prepare accident and emergency response plans to respond to hazards, including response procedures, responsibilities, communications, training, resources required
- Disclosure appropriate information about preparedness and response activities, responsibilities and resources to affected communities
- Major structural components, in areas of high risk that threaten safety of communities, must be independently reviewed by qualified and experienced experts throughout project

Health Impact Assessment

Follows similar process to EIA and informed by it, but focused on health impacts and benefits of the development project



Health Impact Assessment

Bangladesh: Rupsha 800-Megawatt Combined Cycle Power Plant Project

Ms. Hridi and her family live in Rupsha near the proposed site for the gas fired power plant.

In her community, power outage is frequent, health clinics in the area don't have continuous access to energy needed to refrigerate medicines, vaccines or sterilize material.

PROJECT WELL MANAGED WITH HIA

Ms.Hridi doesn't worry about construction site, workers and traffic. They are clean, organized, and healthy.

Her two children and other 400 schoolchildren benefit from the new project clinic in the area.

Ms. Hridi and her children will benefit from social investment on efficient use of electricity, livelihood and employment, a new solar system, better school materials.

Upon completion of plant with pollution control and shifting from diesel to natural gas on existing plant, they enjoy cleaner air and no noise pollution.

HIA

Infrastructure and economic development affect human health. Solid policy and legal frameworks for health impact assessment, effective institutional arrangements between key sectors, sound public health management plan, and effective monitoring and mitigation systems are critical to realizing positive health impacts from infrastructure development.

What does HIA require?


Practical HIA Guidelines


Capacity Development Training


Policy and Regulatory Framework


Clear Institutional Arrangement between Relevant Sectors

In Bangladesh

4 in 10 people don't have access to electricity.

96% of the population use solid fuels as the main source of energy for cooking in Khulna division.

108,000

Number of people die from poor outdoor air quality every year, including 7,000 children under 5 years of age.

PROJECT POORLY MANAGED

Ms. Hridi worries safety of her children for traffic accident by trucks passing near school. Dengue is increased due to mosquitoes from construction site.

Ms. Hridi worries about HIV commercial sex for construction workers, and TB from workers overcrowded housing.

Clinic is crowded with construction workers. No space for her children to receive service.

Air pollution and noise from the power plant cause annoyance, high blood pressure, respiratory symptoms in Ms. Hridi, and delayed cognitive development in the children.

Questions

What community health and safety measures should the design of a school consider?

1. Life and fire safety
2. Structural integrity
3. Potable water supply
4. All of the above

0% 2.

0% 3.

0% 4.

For a LPG facility what should EIA include?

1. Quantification of potential fire and explosion hazards
2. Affected persons informed of potential fire and explosion hazard
3. Emergency planning with proposed response activities communicated to affected people
4. All of the above

0% 2.

0% 3.

0% 4.

How is this community hazard best addressed?

1. Community education on risks associated with construction sites
2. Provide a manned crossing and fence other parts of construction site
3. Provide a sign to warn public of construction site
4. Fence entire construction site so public cannot cross

0%	0%	0%
2.	3.	4.

How is this community hazard best addressed?

1. Inform residents to keep children away from the wall
2. Provide a waist height post and rail fence
3. Increase the height of solid wall
4. Resettle residents so they are not exposed to the hazard

0%	0%	0%
2.	3.	4.

How is this community hazard best addressed?

1. Reduce the speed limit for vehicles using the road
2. Provide a zebra crossing for pedestrians
3. Provide a pedestrian footbridge over highway
4. Provide alternative water supply so no need for pedestrians to crossroad

Water well ← → Village

0%	0%	0%
2.	3.	4.

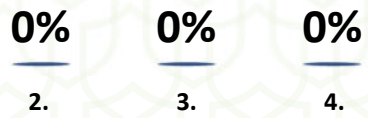
How is this community hazard best addressed?

1. Provide a sign on the gate to indicate electrical hazard present
2. Community education to keep away from electrical installation
3. Ensure security gates are kept locked at all times
4. All of the above

0%	0%	0%
2.	3.	4.

Two community women were sexually harassed by construction workers out of hours, is this…?

1. Normal behaviour for construction workers
2. Not a matter of concern for the project as out of hours
3. Gender matter, not relevant to safeguards
4. SPS community H&S issue



How are risks to women in the community best addressed?

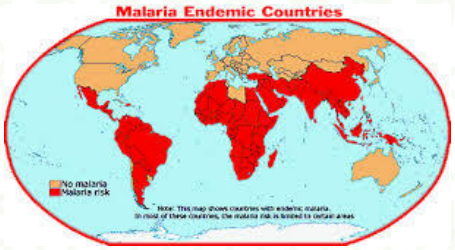
1. Provide construction workers with contraception
2. Education of construction workers/code of conduct
3. Gender responsive GRM
4. Enforcement of disciplinary measures

World Bank cancels funding for Uganda road amid sexual assault claims

Bank pulls plug on $265m transport scheme after allegations that construction workers targeted schoolgirls and reports of poor treatment of workers

What community hazard could a large HEP project increase?

1. Drowning
2. Malaria and other vector borne disease
3. HIV
4. All of the above



0% 2.

0% 3.

0% 4.

For a new dam what should EIA include?

1. Review by independent, qualified and experienced expert throughout project cycle
2. Affected persons informed of potential dam burst hazard
3. Emergency planning with proposed response activities communicated to affected people
4. All of the above

0%	0%	0%
2.	3.	4.

Policy Update
ESS4

Requirements

- Occupational Health and Safety (OHS)
  - General and Sector Specific OHS risk assessment and management planning.
  - Health and Safety Management Plan – **HSMP + ESCP.**
- Community Health and Safety (CHS)
  - General and Sector Specific CHS risk assessment and management planning.
  - Health and Safety Management Plan – **HSMP +ESCP**.
- Common Requirements
  - Designate a person responsible to implement the HSMP.
  - Monitor and Report on Performance – **HSMP +ESCP**.
  - Worker Right to refuse to work in unsafe environments.

Policy Update
ESS4

Requirements

» Community and Workers' Risk Assessment and Management Planning,* with coverage based on screening:

- Security risk for workers and communities.
- Sexual abuse and harassment risks to workers and affected communities.
- Climate change and disaster risk assessment for projects in sensitive locations
- Life and Fire safety audits for new and refurbished facilities prior to use.
- Reporting on major incidents such as fatalities and accidents.
- Emergency preparedness and Response
- Safety of Services
- Dam Safety (New and DUC)

****Note, assessment needed only for projects based on screening of relevant issues, with scale of assessment and management needs commensurate issues and risks.***

Key Takeways

- Project health and safety risk management requires strong partnership between ADB and their borrowers/clients.
- Risk Assessment is critical to a risk management planning and PPE is the last resort in the Mitigation Hierarchy.
- Safety is everyone's responsibility, but Your safety is your responsibility

Detailed Health, Safety and Security Training Developed

» ADB Health, Safety & Security Course

» Mental Health and Wellbeing in the Workplace

» Mental Health and Wellbeing in the Workplace (for Managers)

» Good Practice Guide for Management and Control of Asbestos: Protecting workplaces and communities from Asbestos Exposure Risks https://www.adb.org/publications/good-practice-management-control-asbestos

» Asbestos Awareness eLearning Course

SayleGroup Inc.
THE TRUSTED NAME

Stephen Sayle

- > 25 years of international health, safety & environmental (HSE) risk management
- Former Commercial Diver
- B.Sc., Masters, Canadian Registered Safety Professional
- Worked on all Continents – except Antarctica…yet
- Indigenous Safety Culture JV
- ADB HSE Risk Management Consultant

ADB

"Digitizing HSE subject matter expertise for the next generation…"

HSS WORKSHOP FOCUS:

- ADB - HSS
- Safety Culture
- Hazard Identification
- Life Saving Rules
- Risk Management
- HSS Good Practice Guide
- Safe Work Practices
- Incident Reporting & Investigation
- Emergency Preparedness

Fiji,
10-13 June 2024

ADB

The International Labour Organization (ILO)

The main aims of the ILO are to promote rights at work, enhance social protection and strengthen dialogue on work-related issues.

Occupational Injury and Disease Statistics

The ILO estimates:

Every year over 2.3 million women and men die at work from an occupational injury or disease.

Over 313 million workers are involved in non-fatal occupational accidents causing serious injuries and absences from work.

Worksite Safety

Every ADB-supported project is unique and has a different range of hazards and risks.

Activity

Serious Incidents

Imagine the Headlines

An incident at work has wide-ranging impacts.

Tragic domino / ripple effect…

Imagine the Headlines…

Official Media Partner Team Fiji to Tokyo 2020 Olympic Games 125 DAYS TO GO

The Fiji Times YOUR VOICE Since 1869

SATURDAY, MARCH 21, 2020 www.fijitimes.com 80 PAGES $1.10 VIP OUTSIDE VITI LEVU $1.40 VIP

Buried alive

FULL report

One of the deceased, 38-year-old Aporosa Raluba. Picture: SUPPLIED

Nawua firefighter Ro Seru Tikoruboa assesses the damage on the vehicle buried in a landslide at a quarry in Mau, Namosi. Picture: JONESA NAISUA

2 DEAD, 1 MISSING IN QUARRY TRAGEDY

By ARIETA VAKABUKAWAQA

Mau, Namosi yesterday.

Their bodies were retrieved by police and firefighters but the search for their supervisor had to be called off because of adverse weather.

A fourth employee is understood to have survived the disaster.

The quarry, located on a 25-hectare site, is involved in the extraction and supply of rock materials for the building and construction industry.

National Disaster Management Office director Vasiti Soko advised companies to refrain from operating quarries when the weather was not favourable.

The Fiji Times

HOME NEWS SPORT LIFESTYLE KAILA PEOPLE LOCAL TRAVEL DINING & ENTERTAINMENT FIJIAN DRU

Ministry cautions public on forest fires

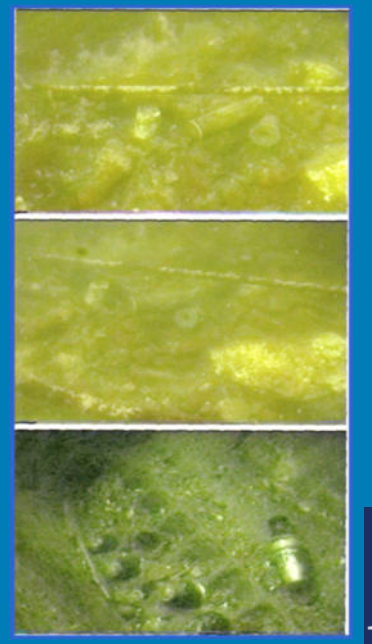
Local News, News | Published: October 25, 2023 | Last Updated: January 26, 2024 | By ANISH CHAND

Listen to this article:

Amount

Receive

Imagine the Headlines…



Group Discussion:

What are your top 3-5 H&S risk scenarios… ?

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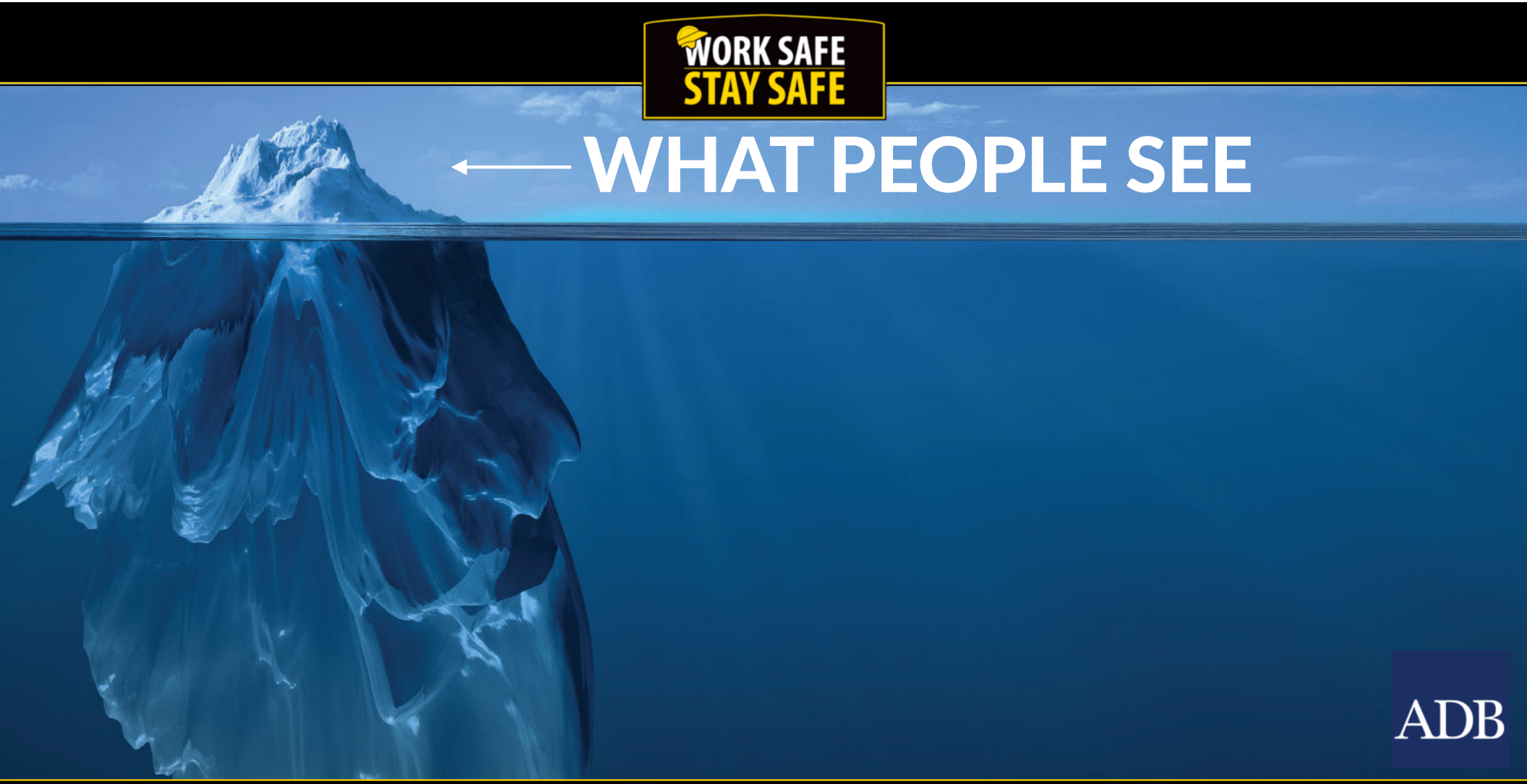
RISK MANAGEMENT
OPERATIONAL EXCELLENCE

WORK SAFE
STAY SAFE



ADB

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RISK MANAGEMENT
OPERATIONAL EXCELLENCE

WORK SAFE
STAY SAFE

BEHAVIOUR
KEY PERFORMANCE INDICATORS

WHAT LIES BENEATH

ADB

SayleGroup
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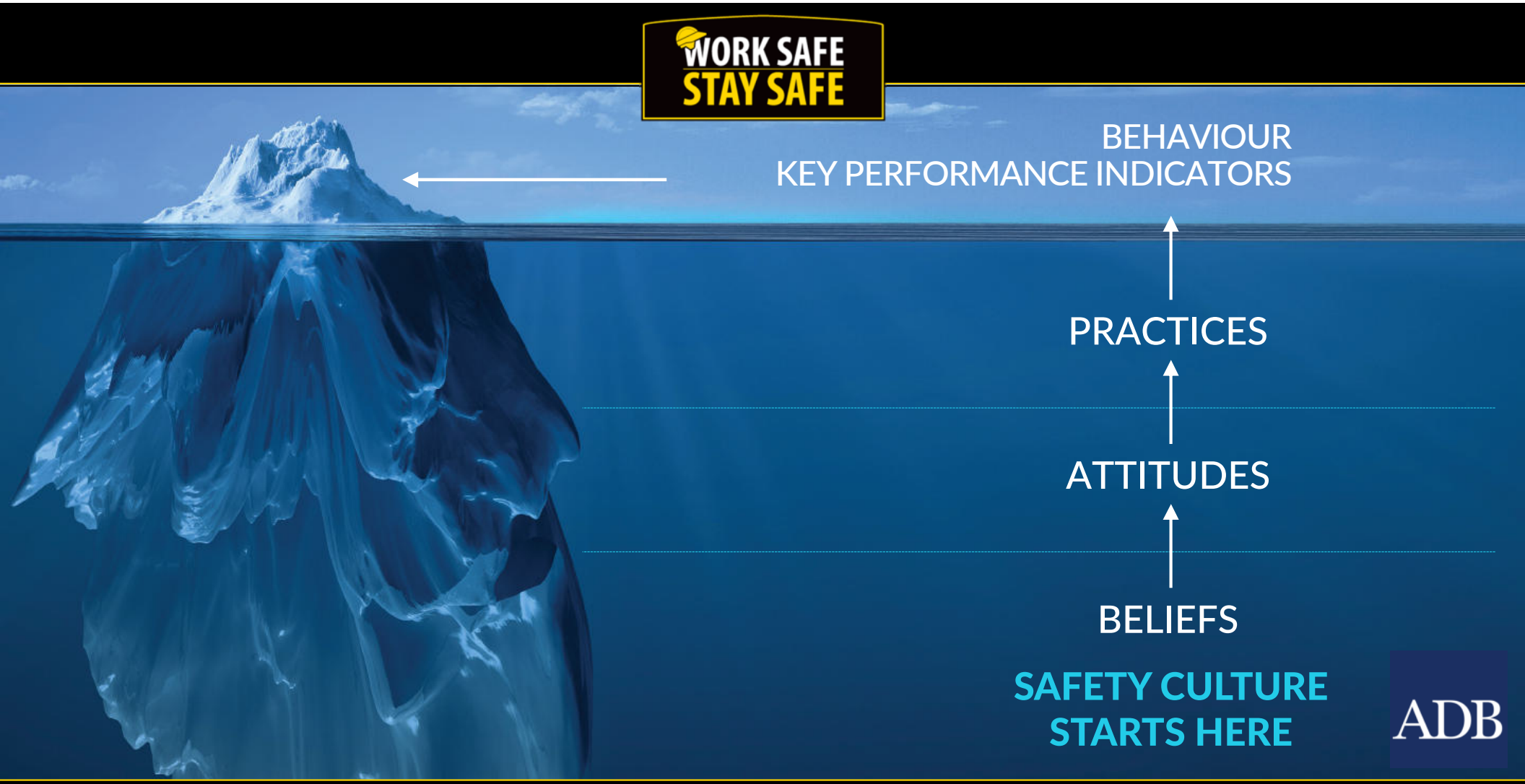
RISK MANAGEMENT
OPERATIONAL EXCELLENCE


WORK SAFE
STAY SAFE
BEHAVIOUR
KEY PERFORMANCE INDICATORS
PRACTICES
ATTITUDES
BELIEFS
SAFETY CULTURE
STARTS HERE
ADB


WORK SAFE
STAY SAFE
BEHAVIOUR
KEY PERFORMANCE INDICATORS
SAFE WORK PRACTICES
LIFE SAVING RULES
SAFETY POLICY
PRACTICES
ATTITUDES
BELIEFS
SAFETY CULTURE
STARTS HERE
ADB

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Steps to a strong safety program...

ADB

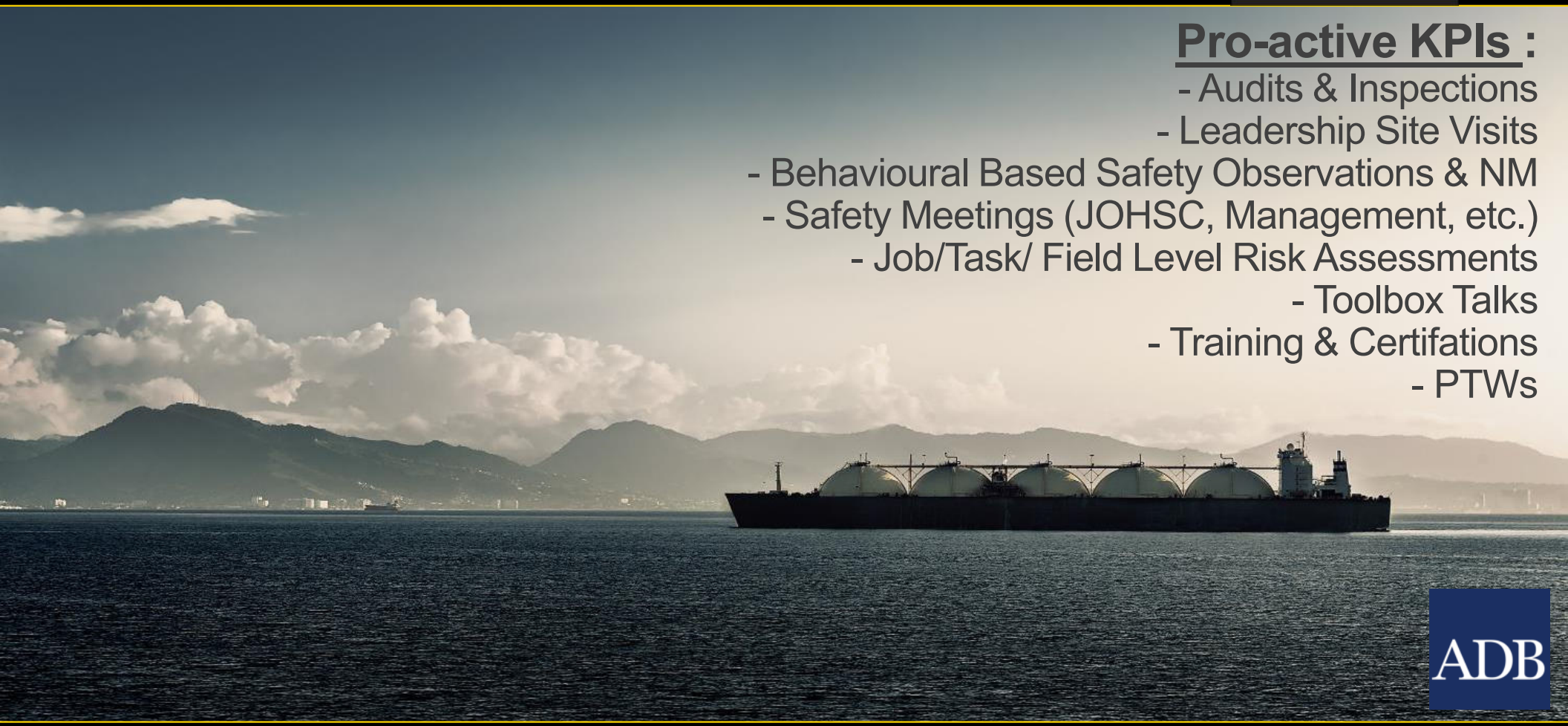
RISK MANAGEMENT
OPERATIONAL EXCELLENCE

Examples of LAGGING KPIs

Reactive KPIs :

- Fatalities
- Lost Time Incidents (LTI)
- Restricted Work Case (RWC)
- Medical Treatment Case (MTC)
- First Aid Case (FAC)
- Environmental Spill
- High Potential Near Miss
- Non-conformances

Examples of LEADING KPIs



Pro-active KPIs :

- Audits & Inspections
- Leadership Site Visits
- Behavioural Based Safety Observations & NM
- Safety Meetings (JOHSC, Management, etc.)
- Job/Task/ Field Level Risk Assessments
- Toolbox Talks
- Training & Certifations
- PTWs

Activity

Benefits of a Strong Safety Culture

WORK SAFE
STAY SAFE

BENEFITS
OF A POSITIVE
SAFETY CULTURE

ADB

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RISK MANAGEMENT
OPERATIONAL EXCELLENCE

WORK SAFE
STAY SAFE

1. Reduction of Incidents
2. Fewer Injuries
3. Cost Savings
4. Lower Insurance Rates
5. Increased Productivity
6. Improved Public Relations
7. Improved Morale
8. Great Reputation

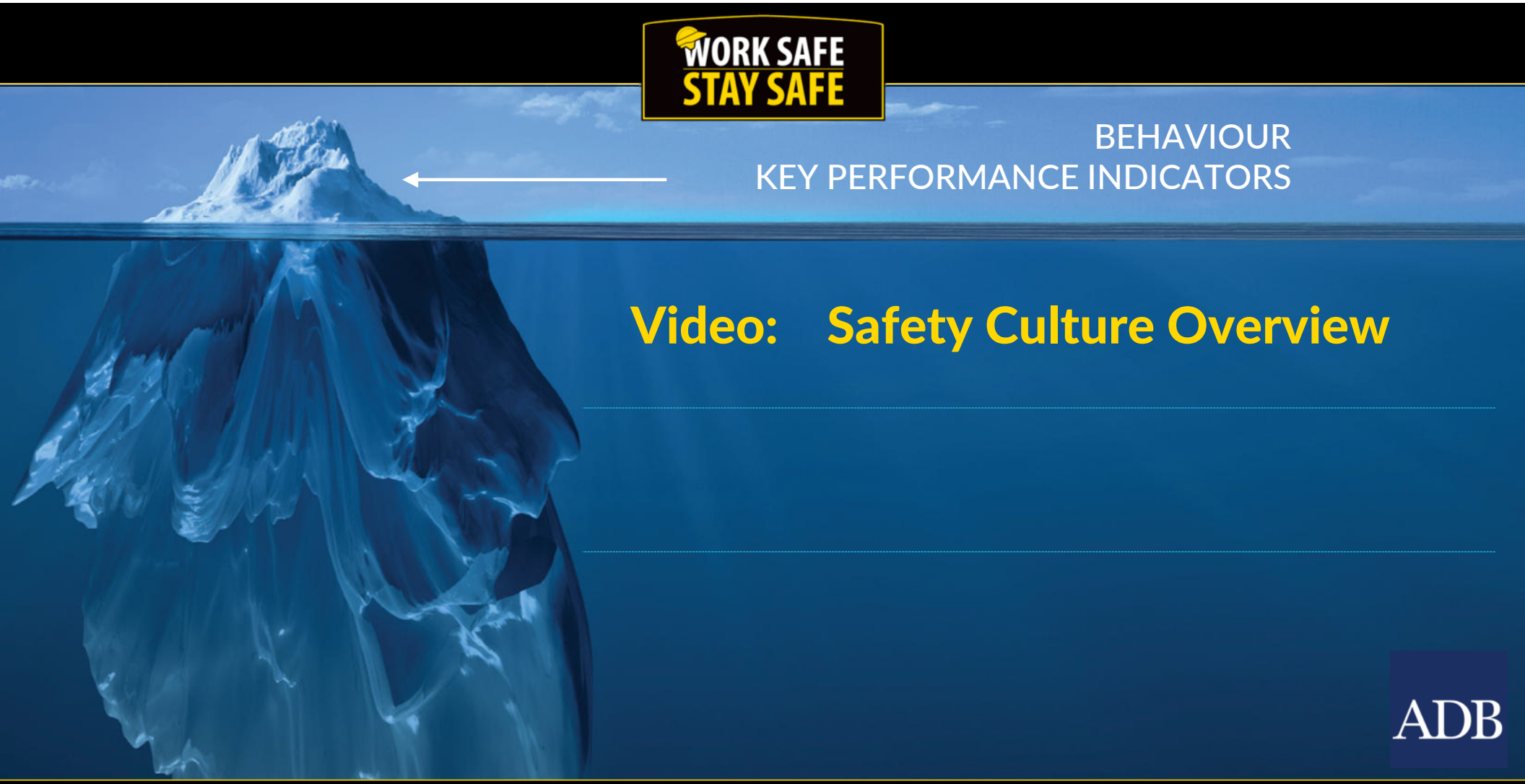
ADB

Safety Culture is an Investment !

Businesses see an **average return of *$4 to $6 for every $1*** *invested* into their workplace safety programs.

In the U.S. nearly $2 billion is lost each year as a result of worker injury and harm to health.

https://www.osha.gov


WORK SAFE
STAY SAFE
BEHAVIOUR
KEY PERFORMANCE INDICATORS
Video: Safety Culture Overview
ADB

Activity

Life-Saving Rules

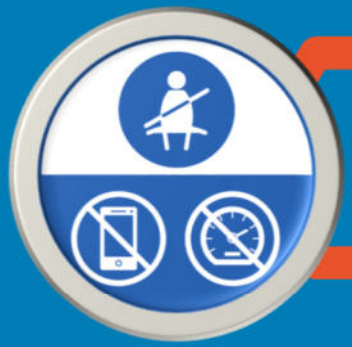
Life-Saving Rules

LSR online video summary:

https://www.youtube.com/watch?v=oK_p0Bogi6A

Bypassing Safety Controls

Confined Space



Driving

Energy Isolation

Hot Work

Line of Fire

Safe Mechanical Lifting

Work Authorization

Working at Height

Life-Saving Rules

Bypassing Safety Controls

Obtain authorisation before overriding or disabling safety controls

- I understand and use safety-critical equipment and procedures which apply to my task
- I obtain authorisation before:
  - disabling or overriding safety equipment
  - deviating from procedures
  - crossing a barrier

Confined Space

Obtain authorisation before entering a confined space

- I confirm energy sources are isolated
- I confirm the atmosphere has been tested and is monitored
- I check and use my breathing apparatus when required
- I confirm there is an attendant standing by
- I confirm a rescue plan is in place
- I obtain authorisation to enter

Driving

Follow safe driving rules

- I always wear a seatbelt
- I do not exceed the speed limit, and reduce my speed for road conditions
- I do not use phones or operate devices while driving
- I am fit, rested and fully alert while driving
- I follow journey management requirements

Energy Isolation

Verify isolation and zero energy before work begins

- I have identified all energy sources
- I confirm that hazardous energy sources have been isolated, locked, and tagged
- I have checked there is zero energy and tested for residual or stored energy

Hot Work

Control flammables and ignition sources

- I identify and control ignition sources
- Before starting any hot work:
  - I confirm flammable material has been removed or isolated
  - I obtain authorisation
- Before starting hot work in a hazardous area I confirm:
  - a gas test has been completed
  - gas will be monitored continually

Line of Fire

Keep yourself and others out of the line of fire

- I position myself to avoid:
  - moving objects
  - vehicles
  - pressure releases
  - dropped objects
- I establish and obey barriers and exclusion zones
- I take action to secure loose objects and report potential dropped objects

Safe Mechanical Lifting

Plan lifting operations and control the area

- I confirm that the equipment and load have been inspected and are fit for purpose
- I only operate equipment that I am qualified to use
- I establish and obey barriers and exclusion zones
- I never walk under a suspended load

Work Authorisation

Work with a valid permit when required

- I have confirmed if a permit is required
- I am authorised to perform the work
- I understand the permit
- I have confirmed that hazards are controlled and it is safe to start
- I stop and reassess if conditions change

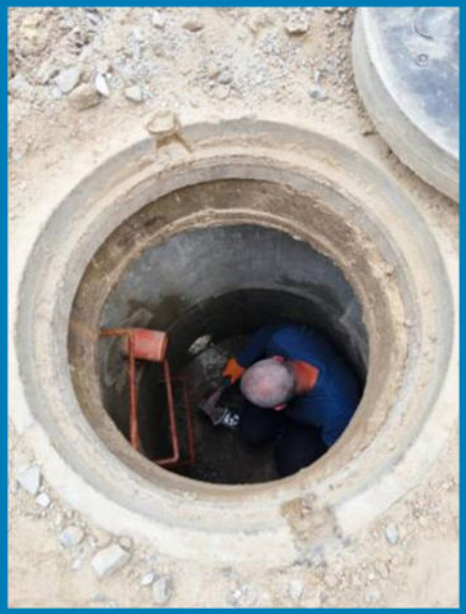
Working at Height

Protect yourself against a fall when working at height

- I inspect my fall protection equipment before use
- I secure tools and work materials to prevent dropped objects
- I tie off 100% to approved anchor points while outside a protected area

ADB

HAZID Discussion…



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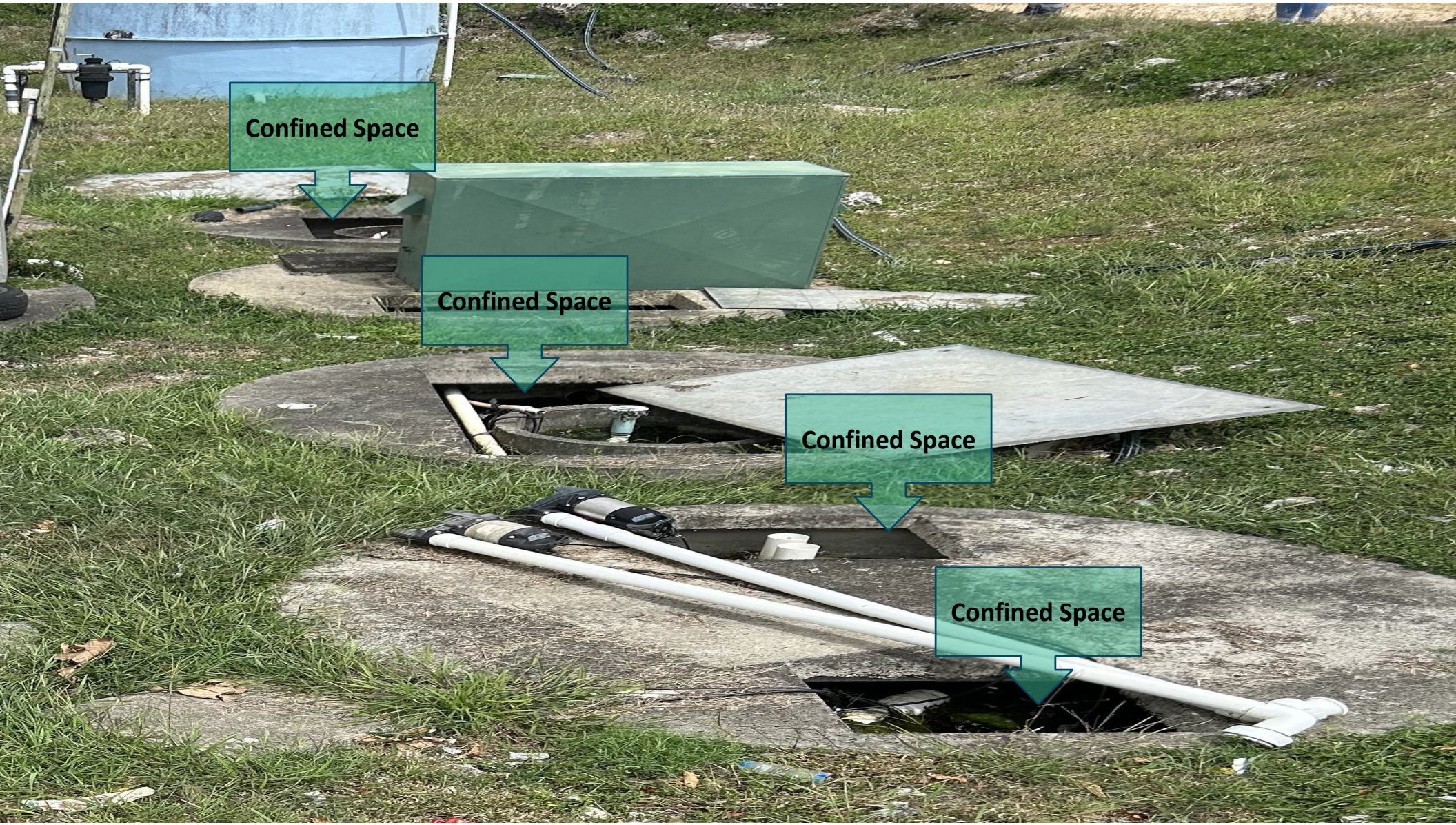
Confined Space
Confined Space
Confined Space
Confined Space

Controls Discussion…

- Vimeo: Show CSE
  - https://vimeo.com/showcase/5939420

HAZID Discussion…

Life-Saving Rules

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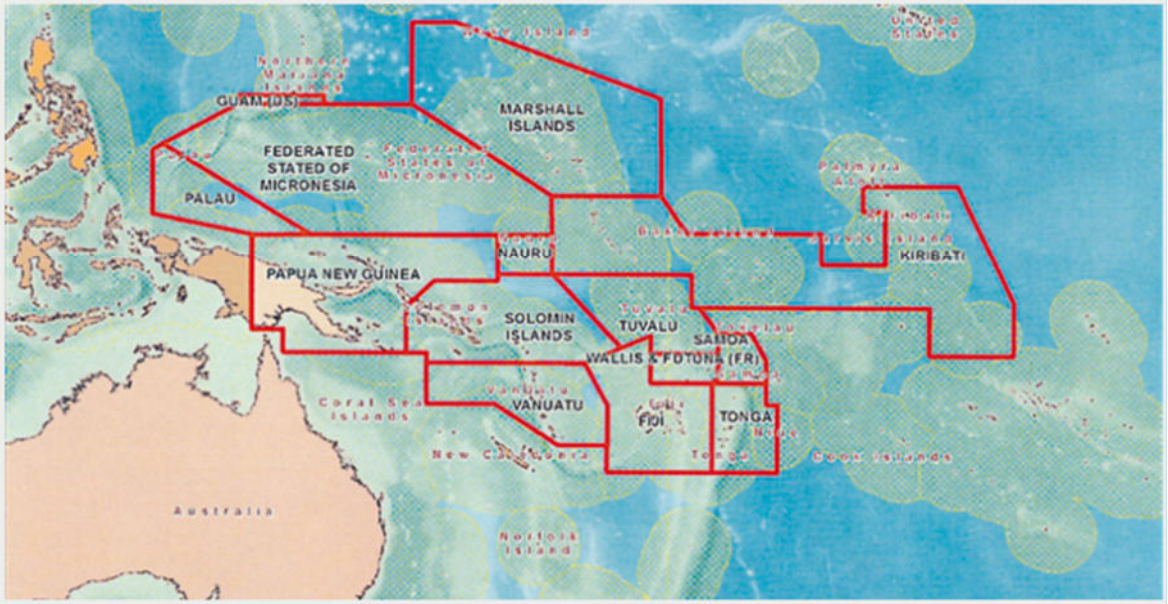
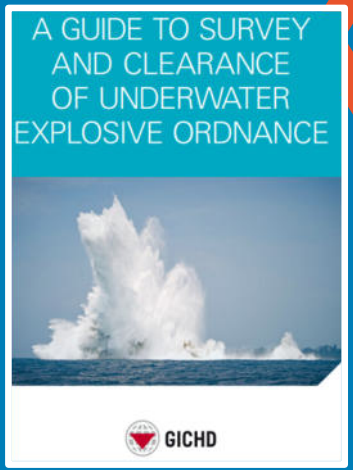
Controls Discussion…

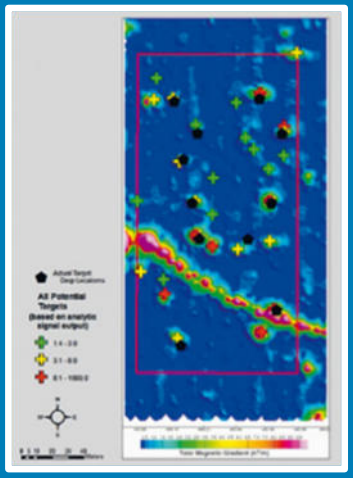
HAZID Discussion…

Controls Discussion… UXO

CASE STUDY: OPERATION RENDER SAFE[4]







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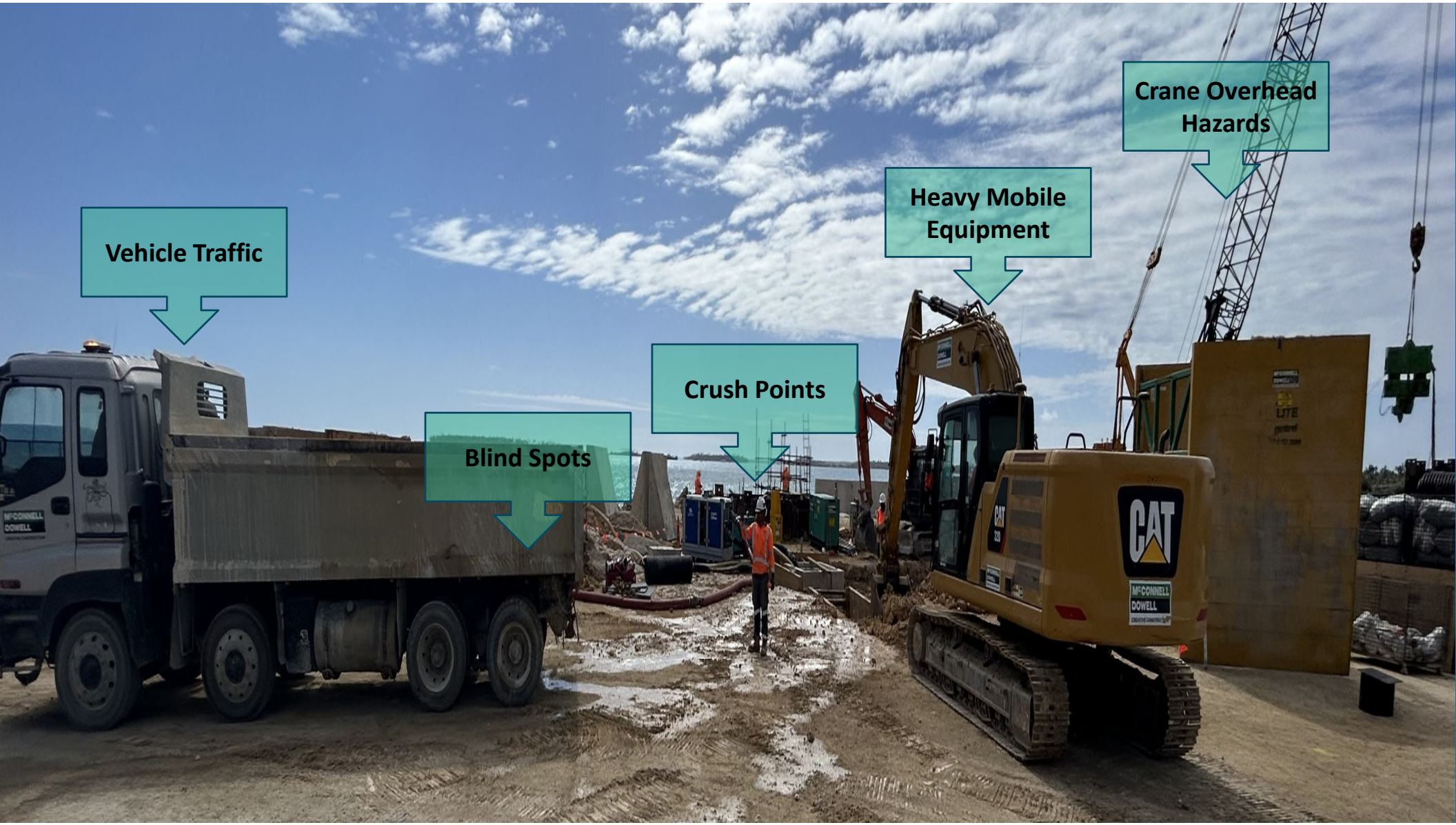
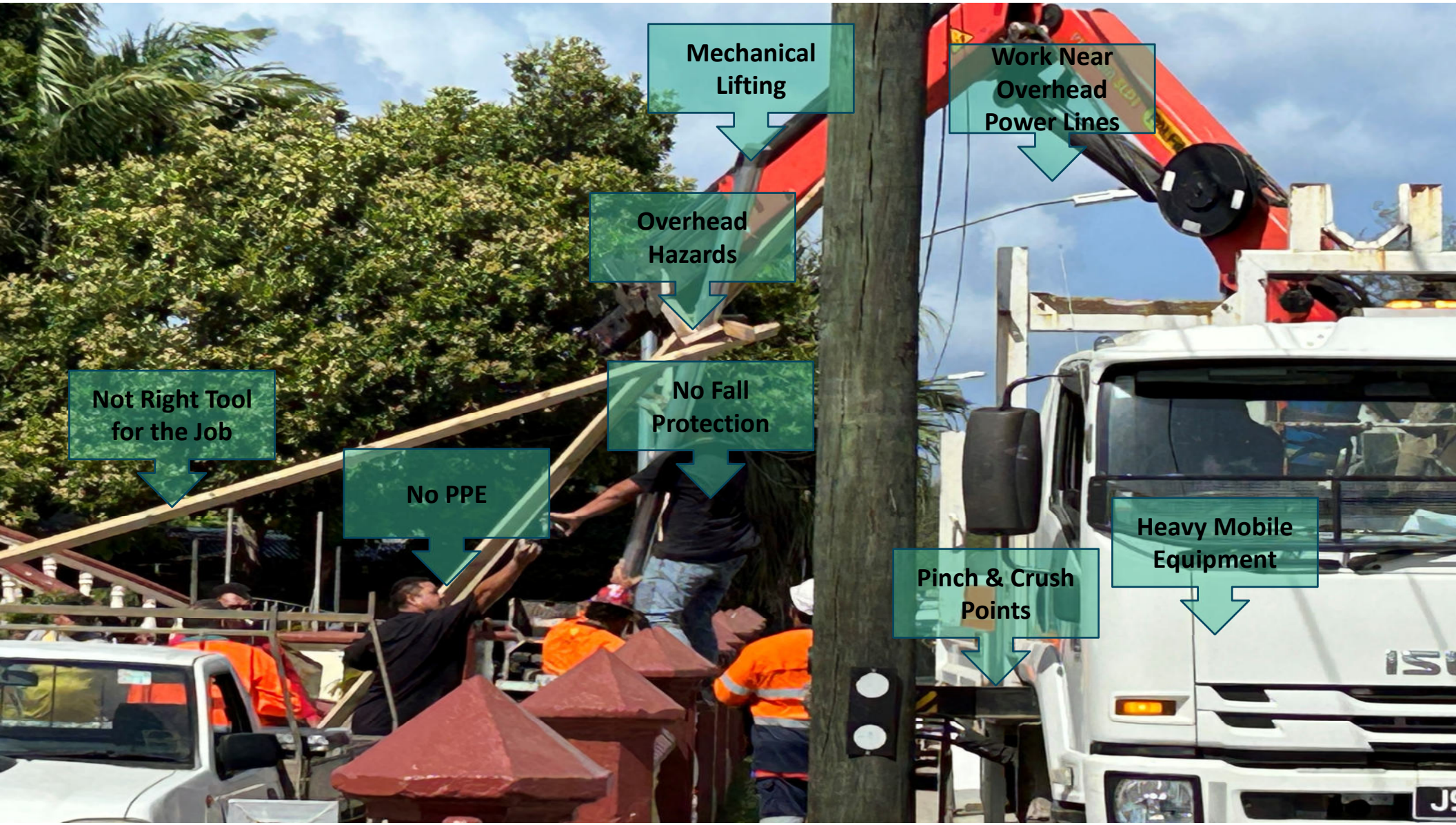

Vehicle Traffic
Blind Spots
Crush Points
Heavy Mobile Equipment
Crane Overhead Hazards


Mechanical Lifting
Work Near Overhead Power Lines
Overhead Hazards
Not Right Tool for the Job
No Fall Protection
No PPE
Heavy Mobile Equipment
Pinch & Crush Points

Typical Life-Saving Rules

Other LSR online video summaries from IOGP

Links to all LSR videos (1-2 minutes each)

- Youtube:
  - https://www.youtube.com/playlist?list=PLt0-qTVCvEp1Dxe7j7SDbbiLrYIkUqYov
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Mental Health and Wellbeing

"A state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community." WHO

Fatigue Management, Fitness for Work & Mental Health

Fatigue, drug and alcohol abuse, harassment, stress, psychosocial impacts…

Many workers will experience these types of impacts !

Worker support mechanisms should be in place…

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- WHO

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Many workers will experience these types of impacts !

Worker support mechanisms should be in place…

Summary

- '*provide workers with a safe and healthy working environment'… ADB*
- safety culture consists of shared values and beliefs
- life-saving rules are intended to prevent incidents from common hazards

MODULE 2
HSS Risk Management

Identify hazards and risks, assess their impact and how to control them

Hazard

A **hazard** is anything that has the ***potential*** to cause harm.


WORK SAFE
STAY SAFE
BEHAVIOUR
KEY PERFORMANCE INDICATORS
Video: Safety Culture HAZID
ADB

Hazard Wheel

A hazard wheel can help to identify hazards when performing an operation or task.

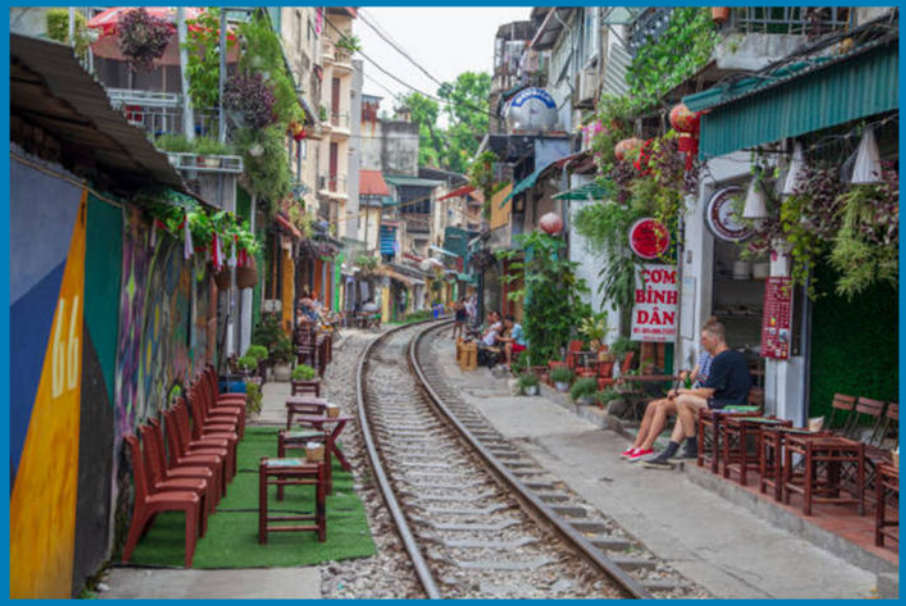
Hazardous Event

For a hazard to cause harm, a hazardous **event** must happen.

Assessing Risks

We need to understand the ***definition*** of **risk** and be able to evaluate and reduce it.

Perception of Risk



Limited "Receptors" = Limited Risk

Add "Receptors" = Higher Risk

Risk

Risk is the combination of the ***likelihood*** of a hazardous event occurring, and the ***consequence***.

Risk = Likelihood x Consequence

Defining “Hazard” vs “Risk”

HAZARD

RISK

Defining “Hazard” vs “Risk”

What is an obvious “Hazard”?

What is the “Risk”?

Defining “Hazard” vs “Risk”

Same “Hazard”…

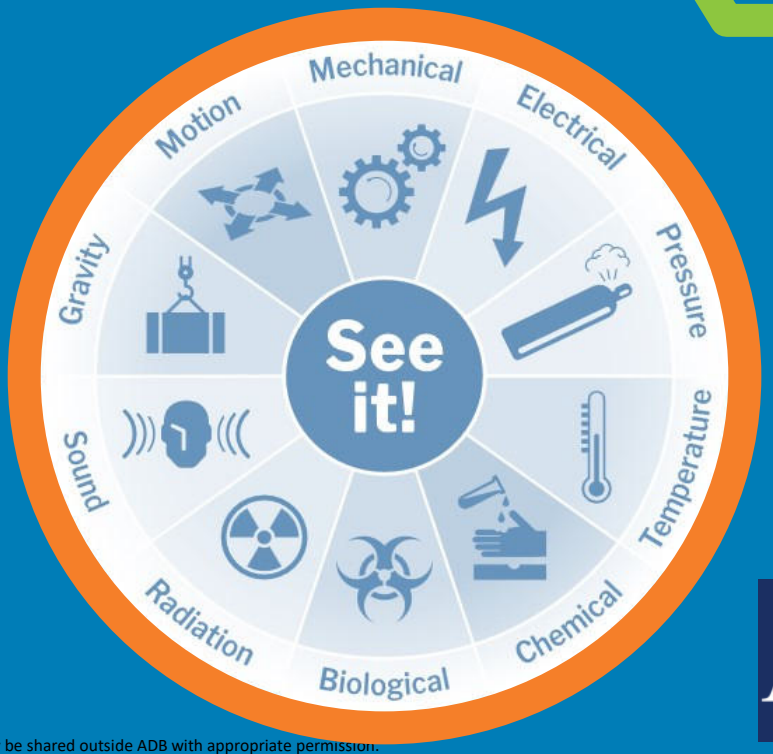
Now what is the “Risk”?

ADB

Hazard Event Consequences

Exercise

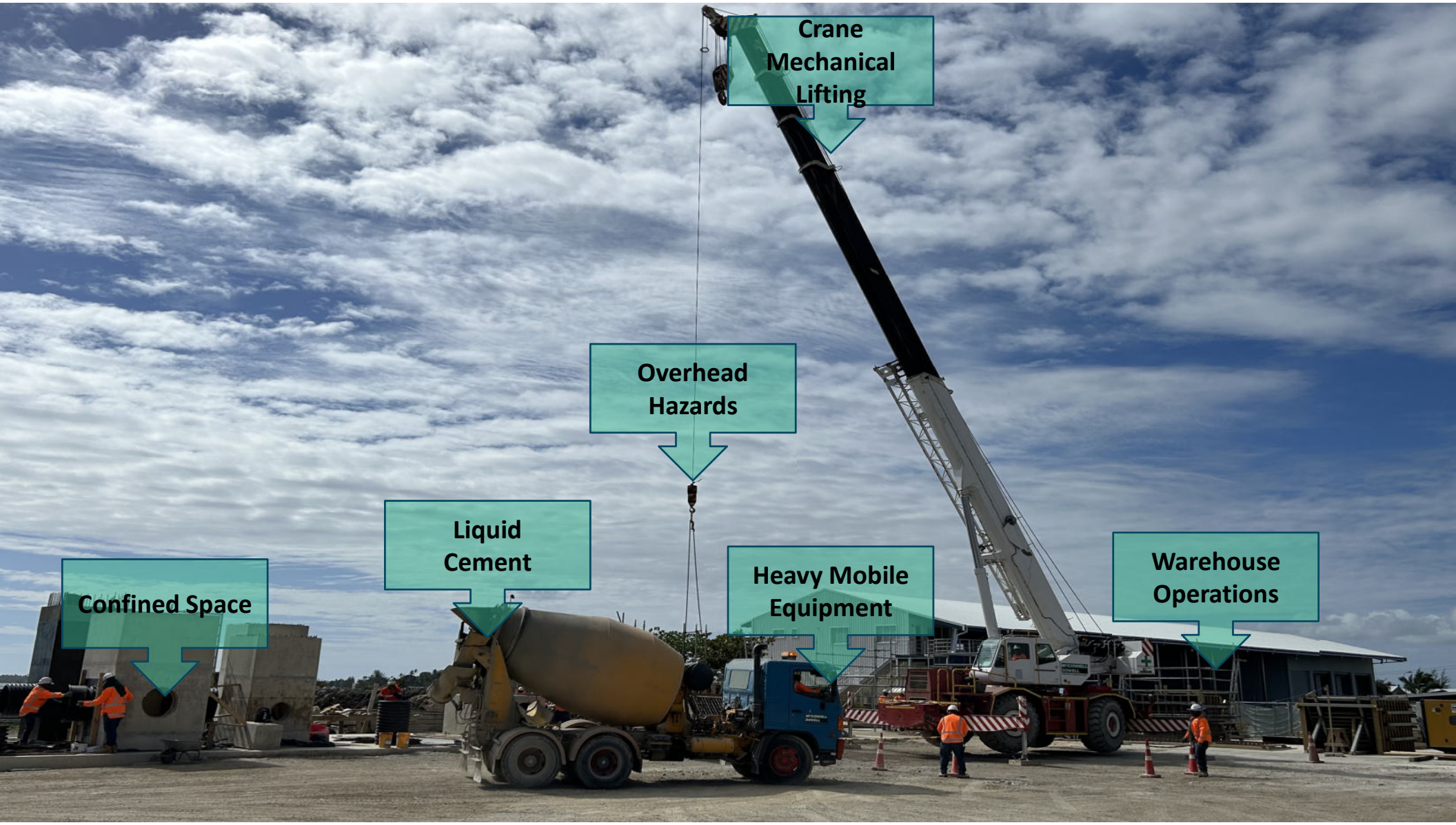
Provide an example of how a person could be harmed for each hazard group.




No PPE
No Fall Protection
No Fall Protection
Power Lines
Chemical Storage
Scaffold Lacks Toe Boards
Dropped Objects
Poor Housekeeping


High Voltage
Hi Pressure Vessel
Poor Condition Scaffolding
No PPE (hardhat, fall protection)
Poor Condition Ladder
Poor Condition Ladder
No PPE
Worker Under Dropped Object Hazards
Unmarked / Unlabelled Drum
Loose Cables / Trip Hazards
Chemicals
ADB

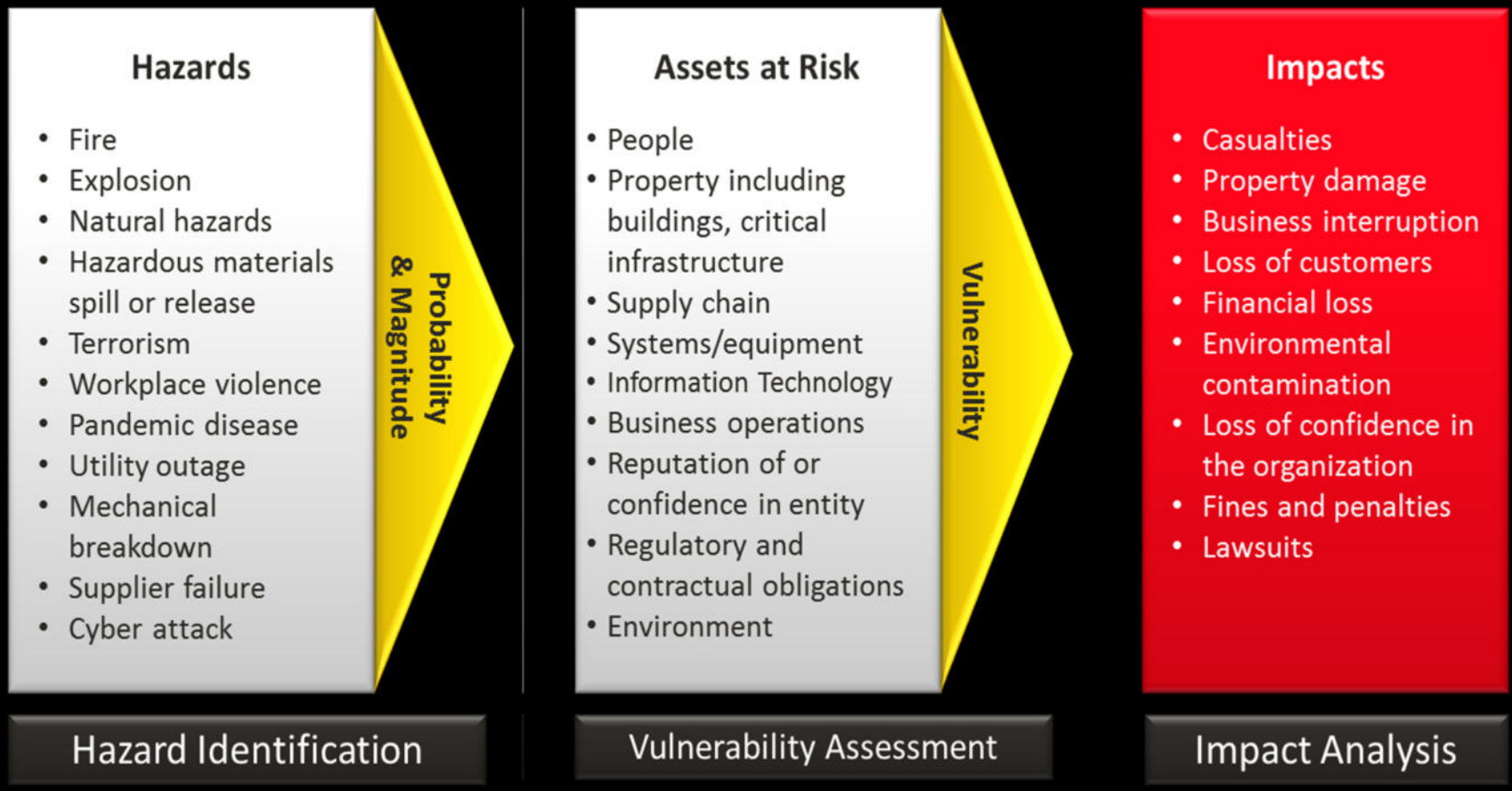

Overhead Powerline
Work at Height
Heavy Mobile Equipment
Fuel Storage
Security Breach
Restricted Space
Chemical Totes
Site Drainage / Runoff


Crane Mechanical Lifting
Overhead Hazards
Liquid Cement
Confined Space
Heavy Mobile Equipment
Warehouse Operations

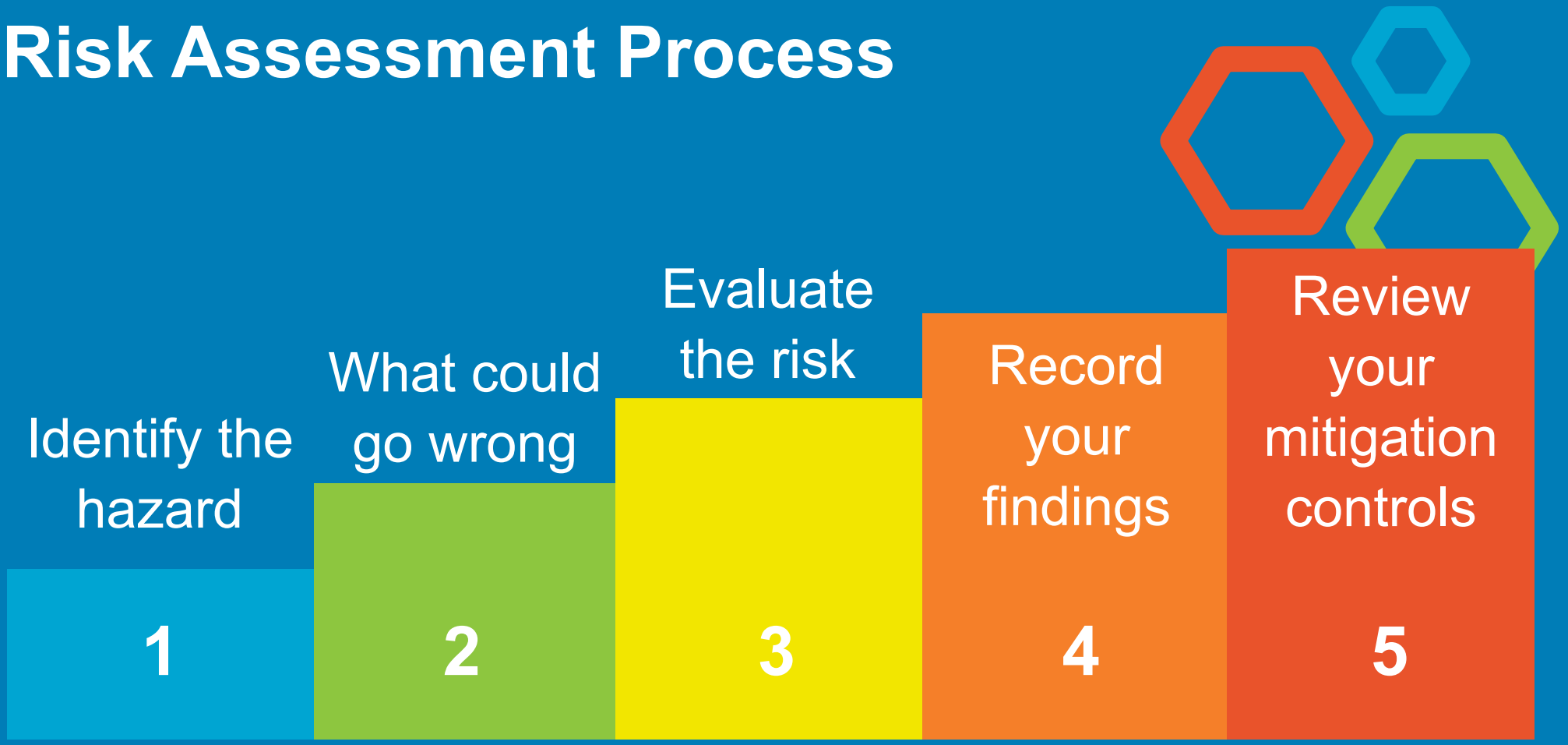
Risk Management

Identifying and evaluating risks, and identifying mitigation measures, to reduce risk to "**as low as reasonably practicable**" (**ALARP**).

High Level Hazards



Risk Assessment Process



Using a Risk Matrix (Basic 3x3)

		Consequence		
		Slightly Harmful	Harmful	Extremely Harmful
Likelihood	Likely	Medium Risk	High Risk	Extreme Risk
	Unlikely	Low Risk	Medium Risk	High Risk
	Highly Unlikely	Negligible Risk	Low Risk	Medium Risk

Risk Matrix (many styles = same principles – e.g., 5x5)

Consequence

Likelihood

	Insignificant	**Minor**	**Moderate**	**Major**	**Catastrophic**
Very Likely	Low-Medium	Medium	Medium-High	High	High
Likely	Low-Medium	Low-Medium	Medium	Medium-High	High
Possible	Low	Low-Medium	Medium	Medium-High	Medium-Heigh
Unlikely	Low	Low-Medium	Low-Medium	Medium	Medium-High
Very Unlikely	Low	Low	Low-Medium	Medium	Medium

SAMPLE Corporate Risk Matrix

People	Environment	Assets	Reputation

"PEAR" Principle

Consequence Severity	Health&Safety	Environment	Financial	Reputation	Probability / Likelihood			
					A - Remote	B - Unlikely	C - Likely	D - Frequent
1- Minor	-Minor Injury or illness -First Aid	-Minimal cleanup needed -Fully contained on site -Negligible impacts	Less than $10,000	-No public disruption -No media attention	A1	B1	C1	D1
2- Moderate	-Medical Treatment -Restricted Work	-Some clean-up offsite -Localized impacts	$10,000 to $100,000	-Regulatory attention/letters -Minimal public disruption - Briefly in local media	A2	B2	C2	D2
3- Major	-Lost Time Incident (LTI) -Multiple injuries	-Widespread but recoverable -Short term impacts	$ 100,000 to $ 500,000	-Regulatory action/fines -Local public disruption -Prolonged local media attention	A3	B3	C3	D3
4- Critical	-Fatality -Permanent health impact -Long term disability	-Widespread and irreversible -Long term impacts	Over $ 500,000	-Regulatory shutdown -Wide public disruption -Prolonged wide media attention	A4	B4	C4	D4

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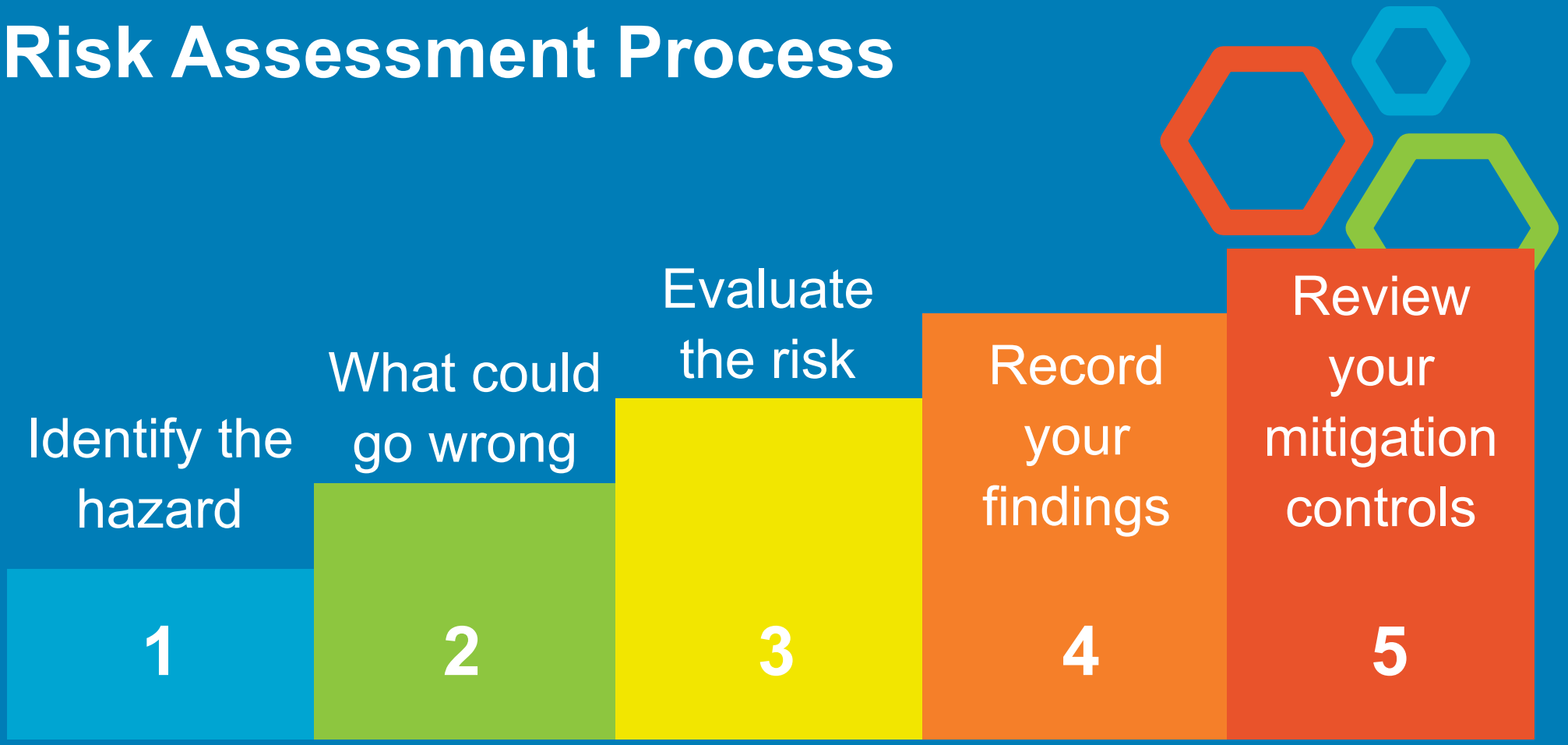

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ADB

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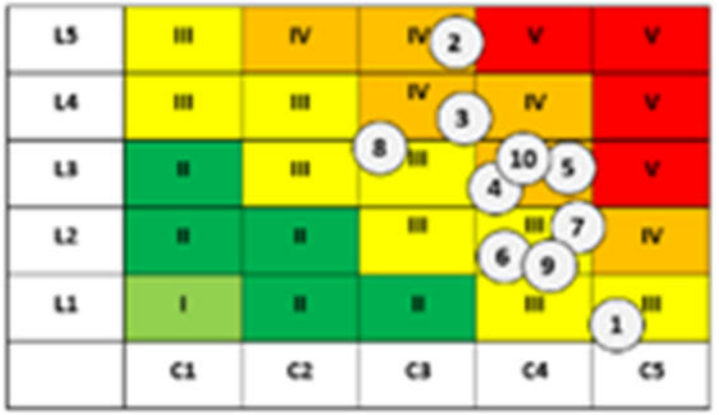
Corporate Risk Worksheet - Sample

DRAFT			Consequence	Probability	Inherent Risk = before Mitigation	Mitigation (currently in place) that reduces the risk rating.	Note: The residual risk ratings below DO NOT APPLY unless all current mitigation and control measures are in place.			Recommendation: Mitigation which is required, to further reduce the risk to an acceptable level.	Company and/or individual responsible to ensure mitigation is in place prior to activity	Additional Notes
ID	"What If" Risk Scenario	Hazards & Impacts (without mitigation)	Consequence	Probability	Inherent Risk	Current Mitigation/Controls	Consequence	Probability	Residual Risk	Additional Mitigation/Controls	Responsibility	Comments
	* What if personnel executing COVE work do not comply with Health & Safety (H&S) requirements, resulting in a serious incident or fatality? (regardless of specific cause for purposes of this assessment) Litigation, Fines/Penalties	People:	1 - Critical	B - Likely		1. COVE Safety and Environmental Expectations 2. Marine Access Permits and Onshore Access Permits (incl SIMOPS considerations) 3. Operational Safety Plans for all marine and onshore operations that outline HSE requirements and identify PICs who are responsible to ensure HSE requiements are satisfied - Pre-operation planning sessions - Same-day toolbox meetings - Post operation review meetings for continuous improvement - Emergency Response Plans 4. Liability and Environmental Impairment Insurance coverage 5. JRCC	1 - Critical	D - Remote		1. Consider SIMOPS Risk Assessment 2. Conduct detailed Risk Assessment for subsea cable damage for future mooring operations and other subsea activities. 3. Liability Insurance coverage 4. Crisis communications planning 5. Consider specific OHS - Safety Culture training for key COVE personnel 6. Consider raising the bar for H&S standards as part of the "Fundy Standard" above minimum regulatory compliance (i.e., similar to say CNSOPB).		* Site/task-specific risks should be addressed through separate Task/Job Safety Analysis processes with specific Berth holders, including the various specific potential fatality scenario risks and control measures.
		Environment:	5 - N/A	E - N/A			5 - N/A	E - N/A				
		Assets:	1 - Critical	B - Likely			1 - Critical	D - Remote				
		Reputation:	1 - Critical	B - Likely			1 - Critical	D - Remote				



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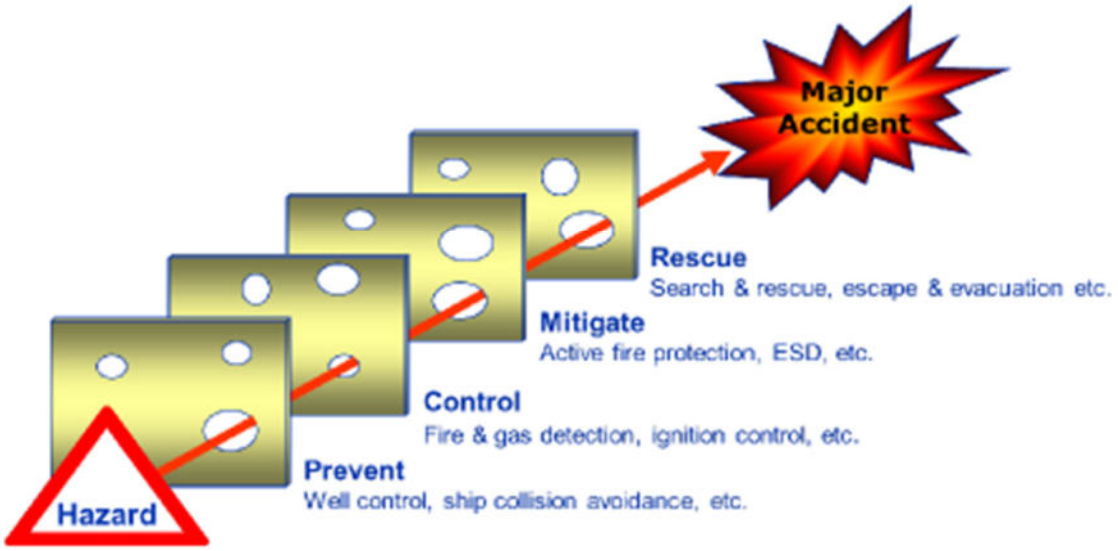
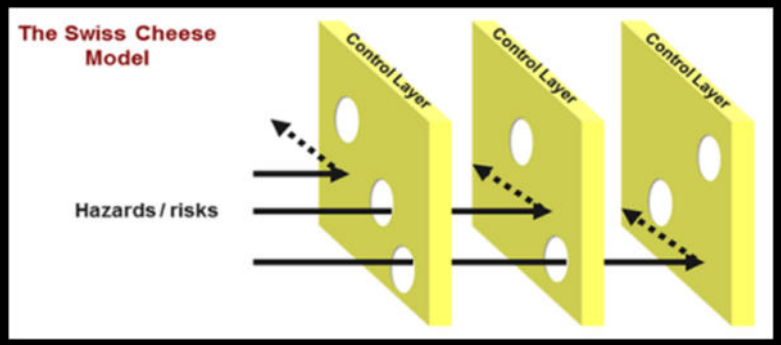
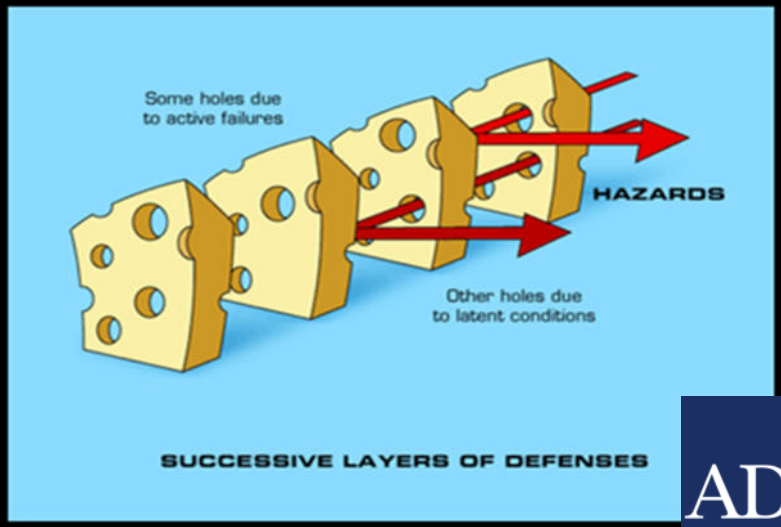
Risk Management – LAYERS of Protection

Swiss Cheese Risk Model

- Layers of protection needed for Emergency Prevention & Response







ADB

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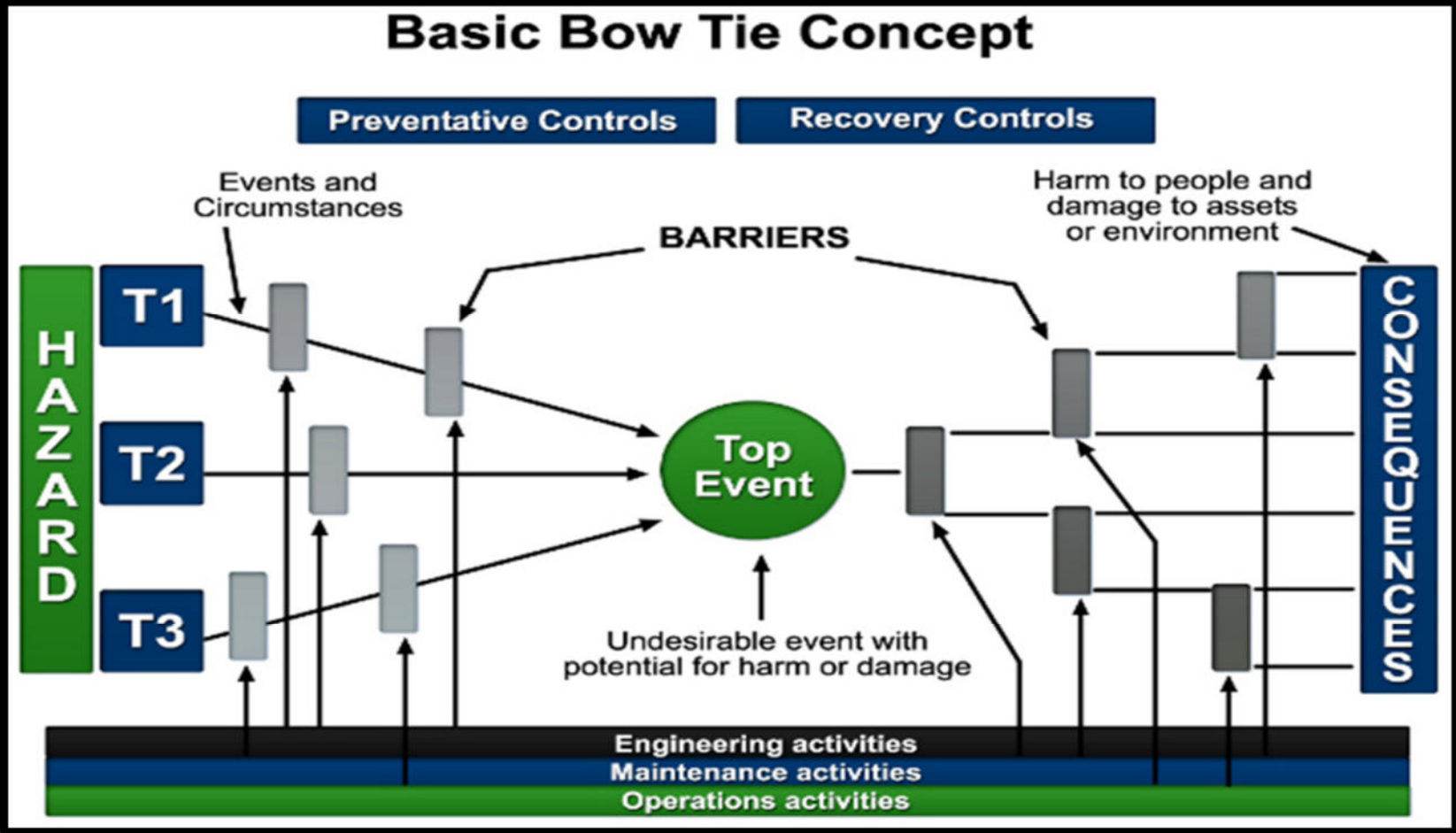

Discussion – House Fire
- List out examples for "Prevention & Response"

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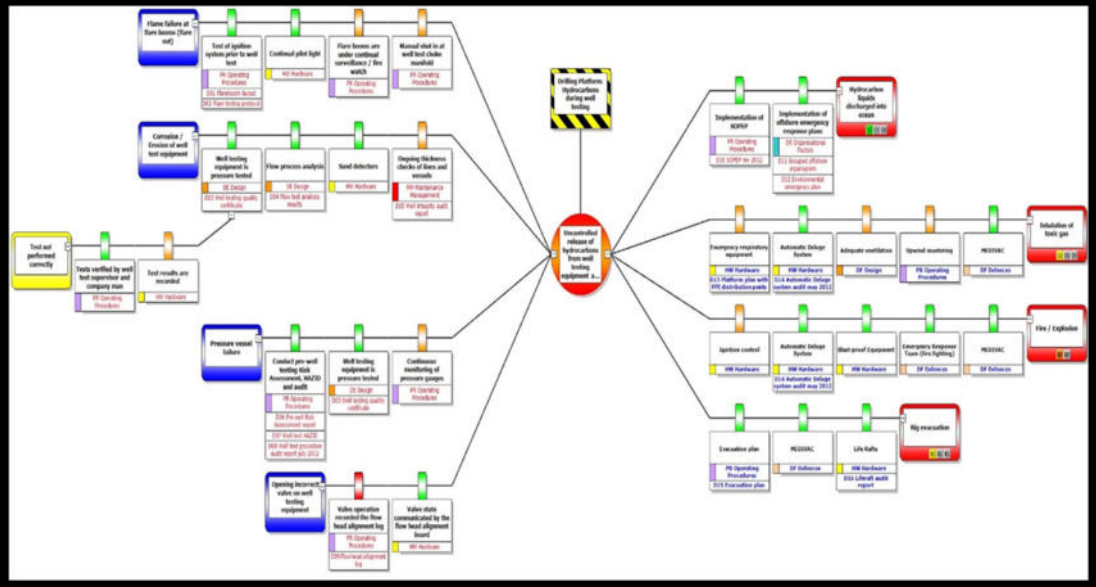

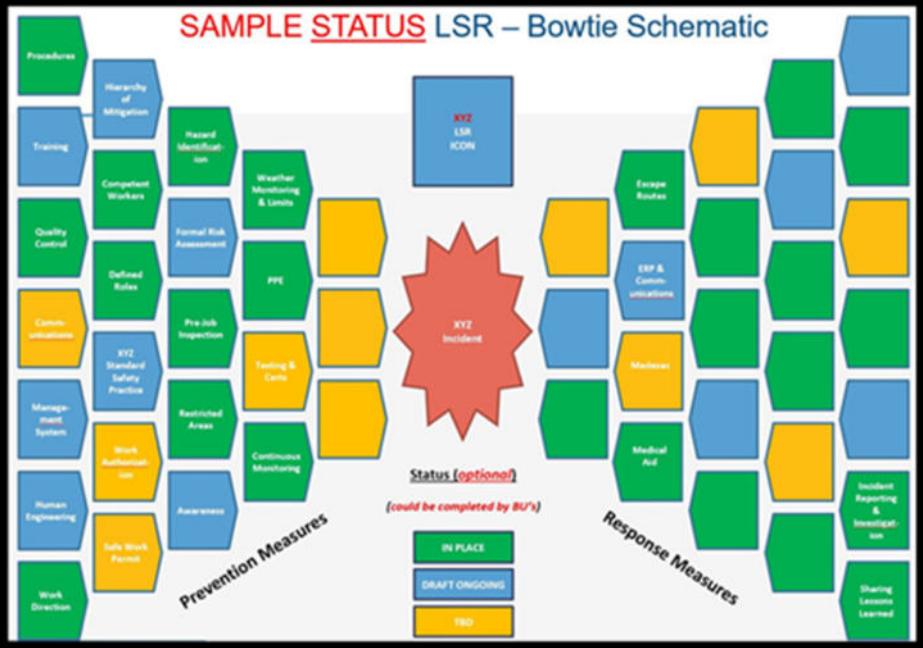

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ADB

Hierarchy of Controls

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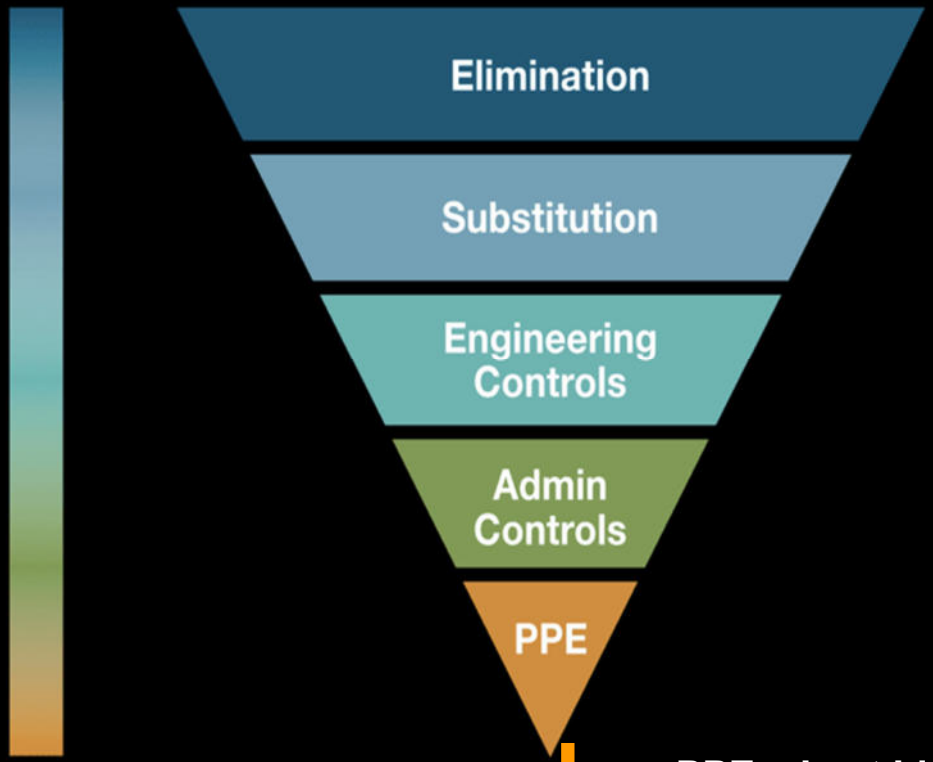

PPE = Last Line of Defense !

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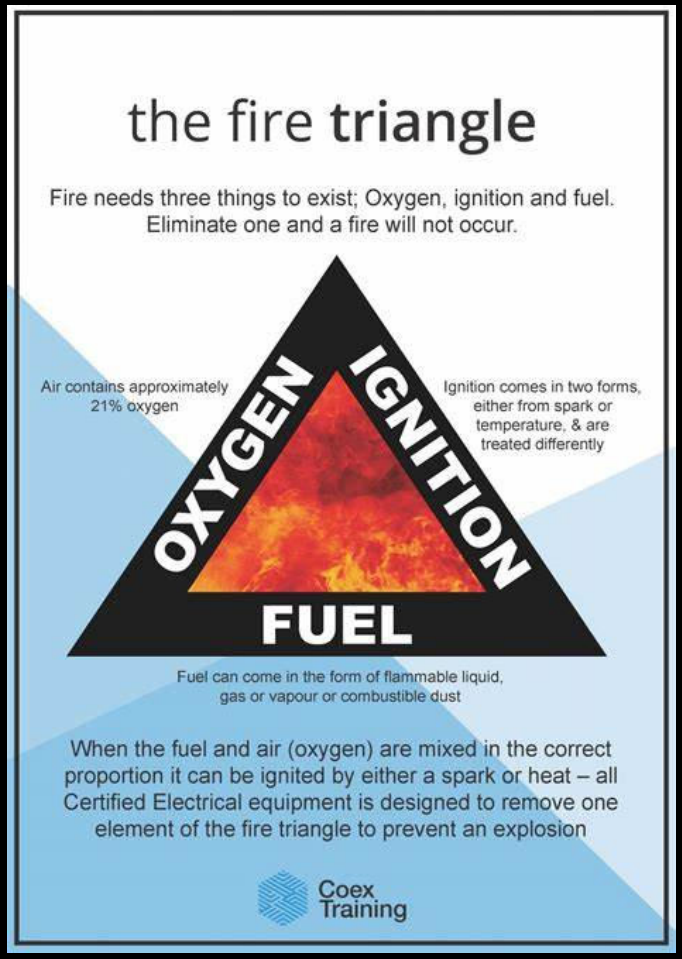
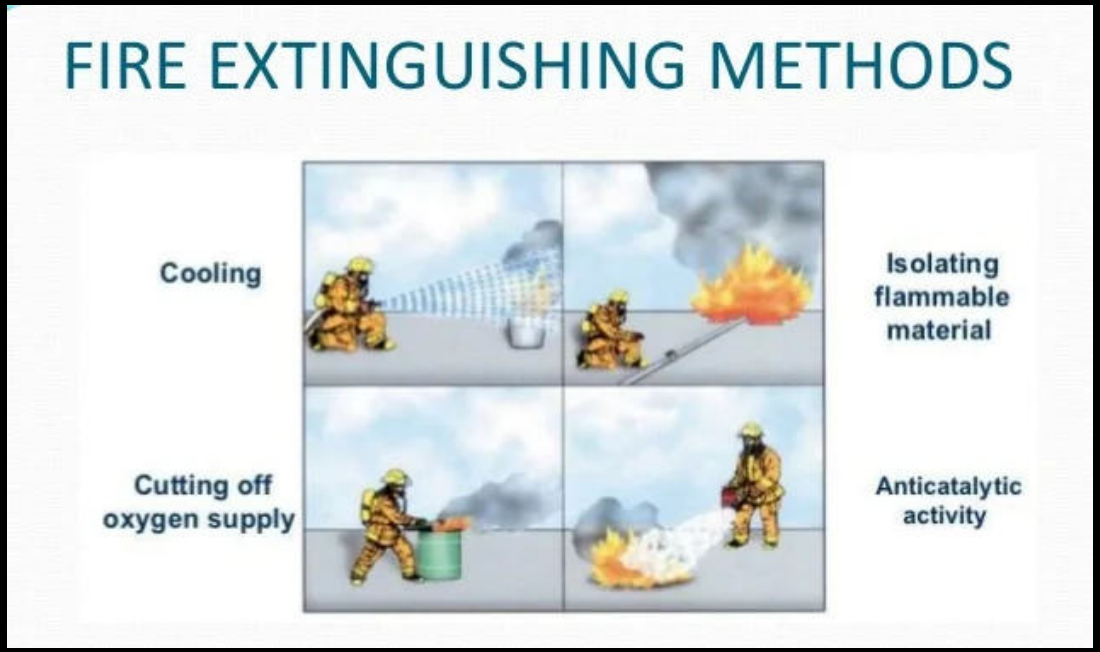
Office Safety - Controls

Office Safety - Controls

Example of Controls for Fire Protection





https://www.youtube.com/watch?v=yodLMfOZNvA

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Example of Controls for Fire Protection

Symbols found on fire extinguishers and what they mean. FireArrest	Water	Foam Spray	ABC Powder	Carbon Dioxide	Wet Chemical
Class A Wood, Textiles & Paper	✓	✓	✓	✗	✓
Class B Flammable Liquids	✗	✓	✓	✓	✗
Class C Flammable Gases	✗	✗	✓	✗	✗
Class D Electrical Contact	✗	✗	✓	✓	✗
Class F Cooking Oils and Fats	✗	✗	✗	✗	✓

https://www.youtube.com/watch?v=yodLMfOZNvA

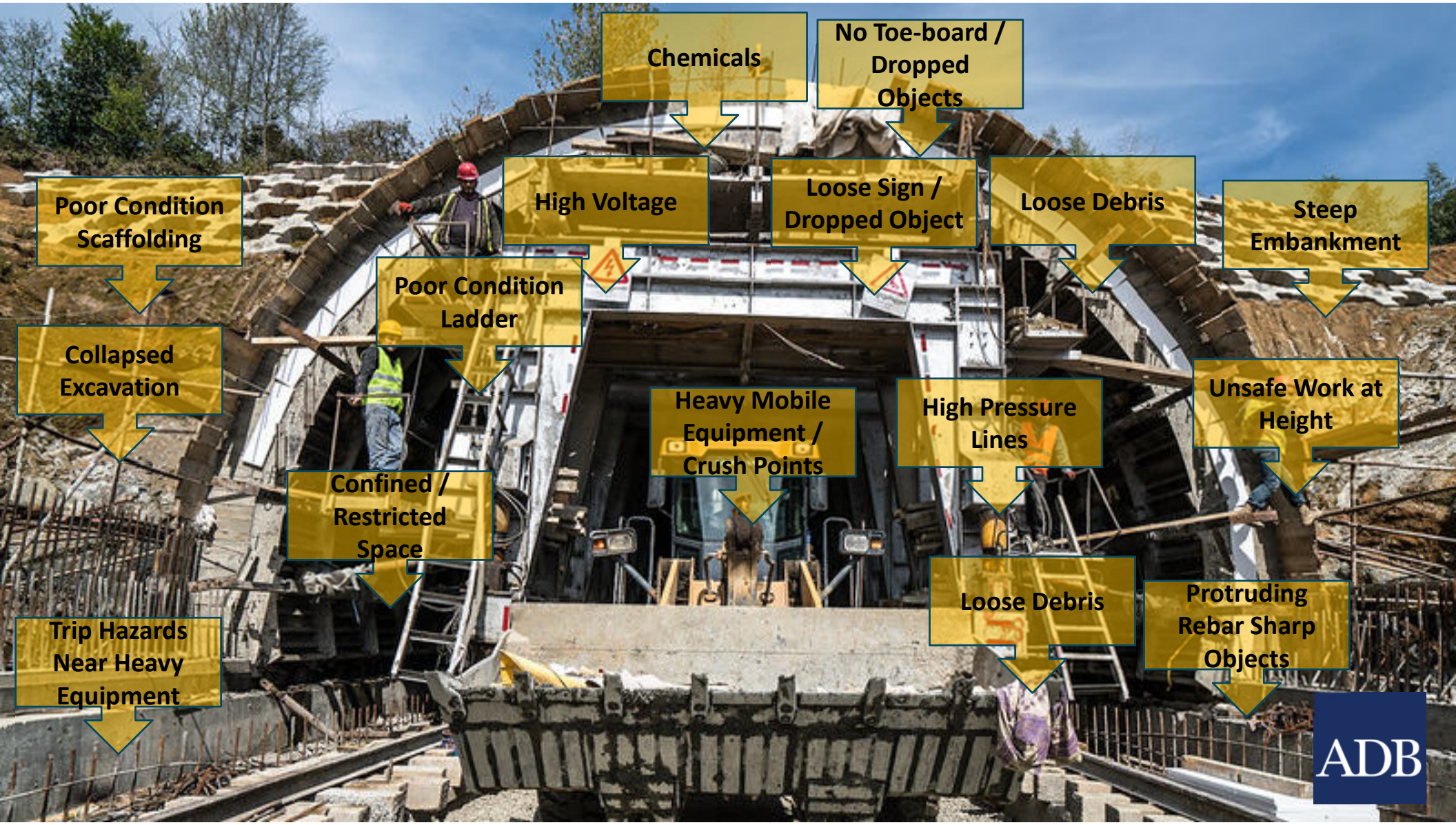
RISK MANAGEMENT
OPERATIONAL EXCELLENCE

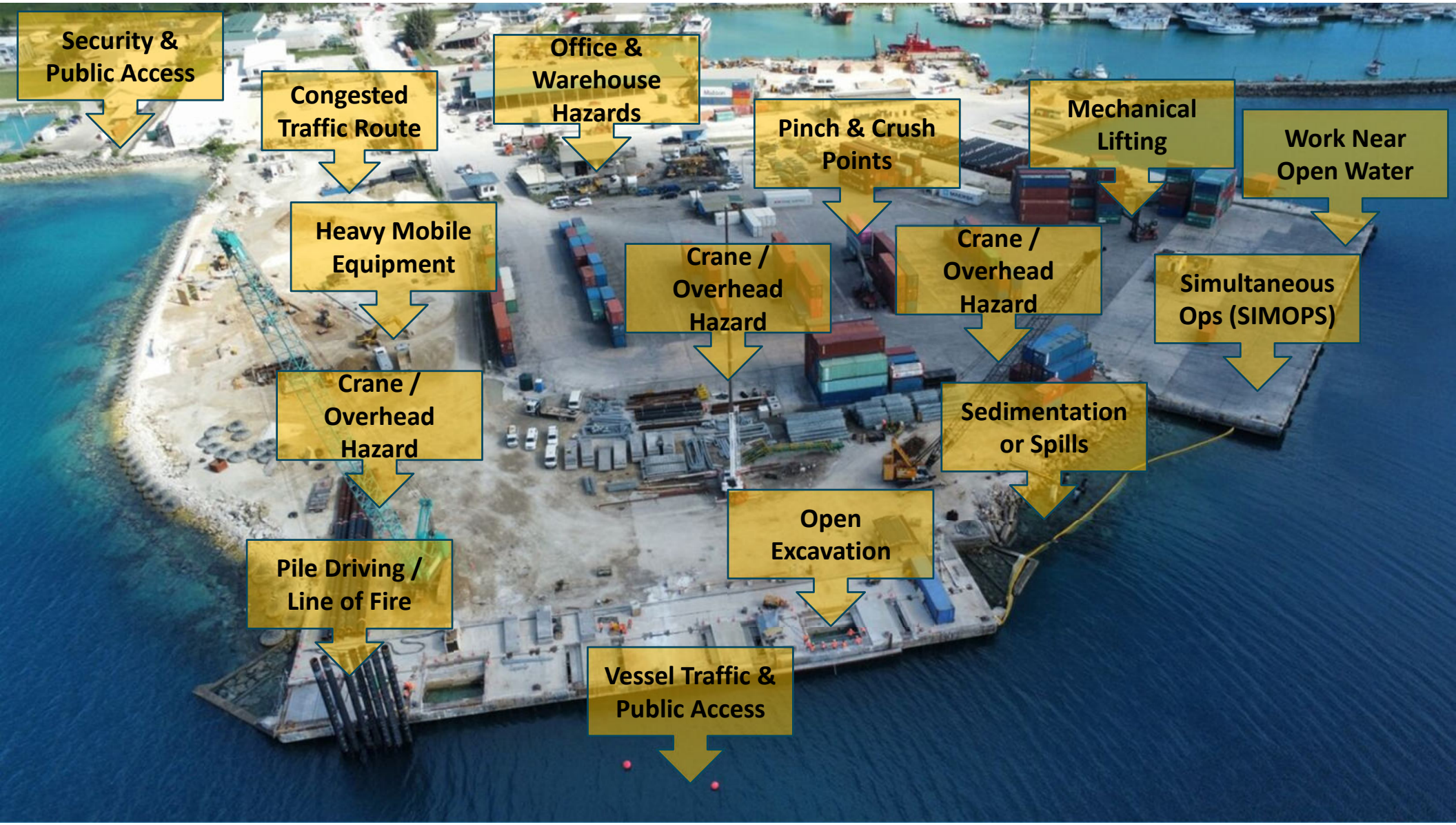
Signage & Barricades

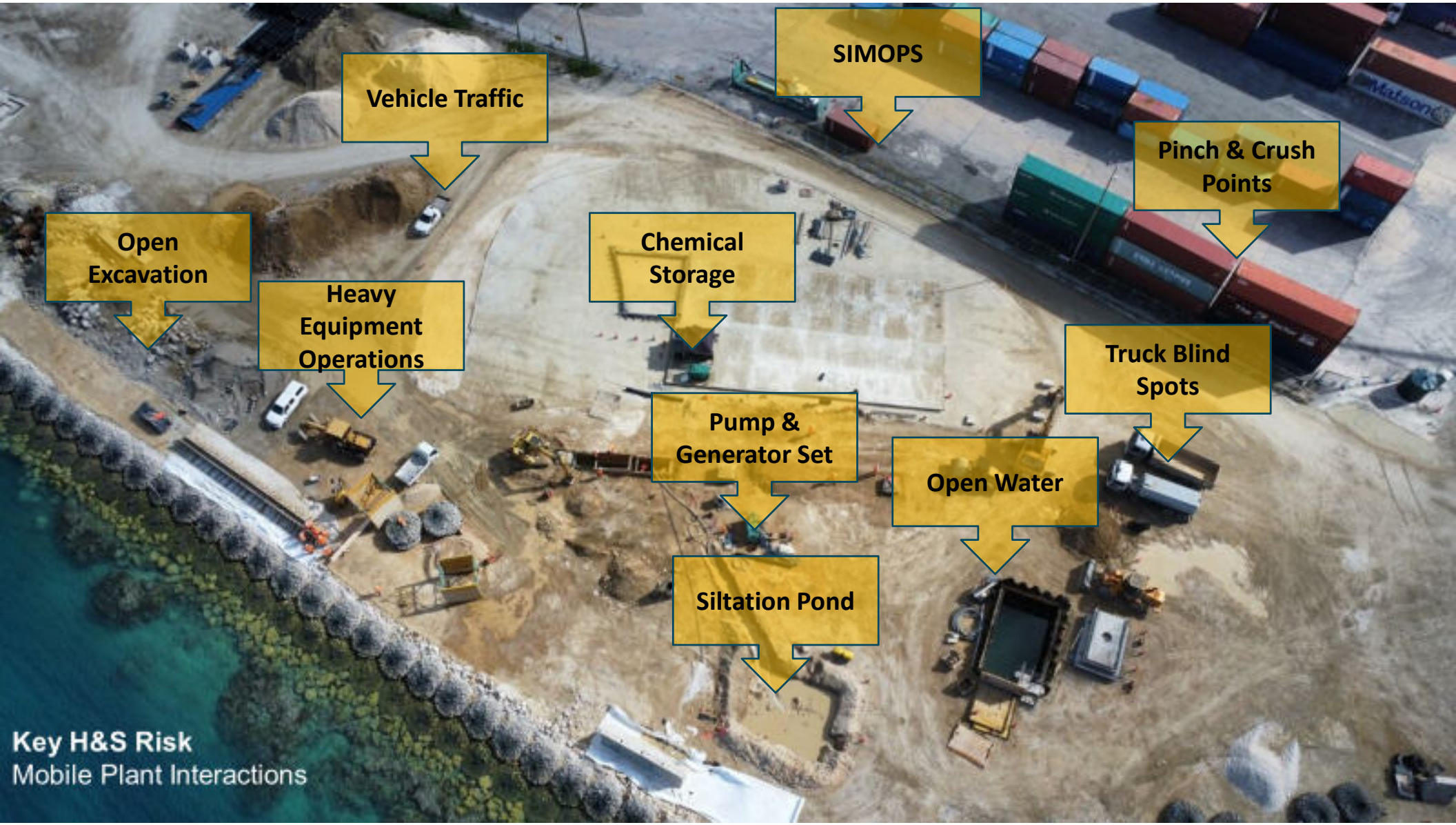
Engineering Design Hazards / Failures

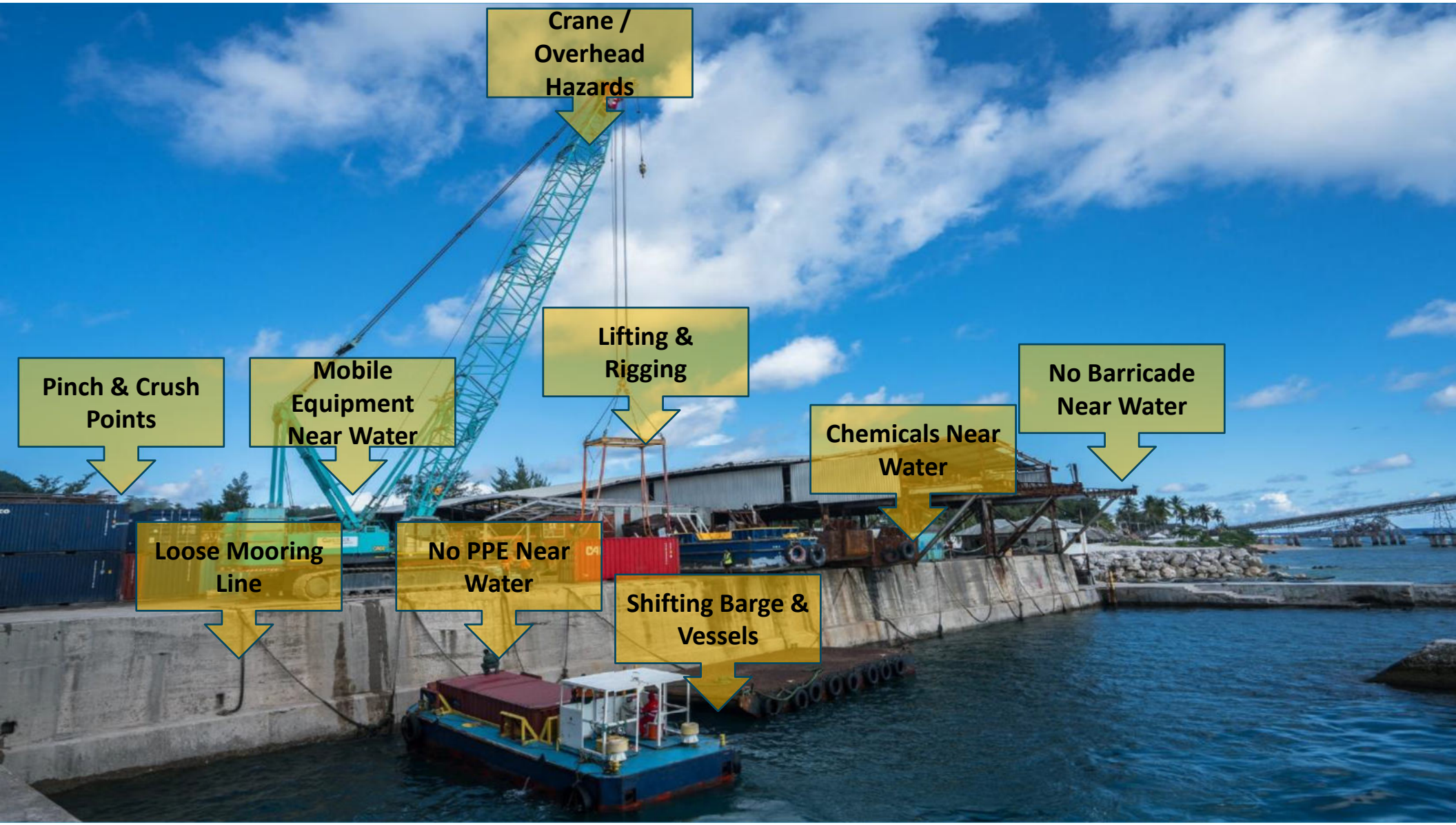
Engineering Controls

Signage & Barricades


Chemicals
No Toe-board / Dropped Objects
Poor Condition Scaffolding
High Voltage
Loose Sign / Dropped Object
Loose Debris
Steep Embankment
Poor Condition Ladder
Collapsed Excavation
Heavy Mobile Equipment / Crush Points
High Pressure Lines
Unsafe Work at Height
Confined / Restricted Space
Loose Debris
Protruding Rebar Sharp Objects
Trip Hazards Near Heavy Equipment
ADB


Security & Public Access
Congested Traffic Route
Office & Warehouse Hazards
Pinch & Crush Points
Mechanical Lifting
Work Near Open Water
Heavy Mobile Equipment
Crane / Overhead Hazard
Crane / Overhead Hazard
Simultaneous Ops (SIMOPS)
Crane / Overhead Hazard
Sedimentation or Spills
Open Excavation
Pile Driving / Line of Fire
Vessel Traffic & Public Access


SIMOPS
Vehicle Traffic
Pinch & Crush Points
Open Excavation
Chemical Storage
Heavy Equipment Operations
Truck Blind Spots
Pump & Generator Set
Open Water
Siltation Pond
Key H&S Risk
Mobile Plant Interactions


Crane / Overhead Hazards
Pinch & Crush Points
Mobile Equipment Near Water
Lifting & Rigging
Chemicals Near Water
No Barricade Near Water
Loose Mooring Line
No PPE Near Water
Shifting Barge & Vessels

Summary

- risk management applies across all sectors
- hierarchy of controls to minimize or eliminate a hazard
- all personnel are responsible for assessing and addressing risks
- this includes the Contractor supply chain !

MODULE 3
Workplace Health and Safety

Understand your responsibility to keep yourself and others safe at work.

Identify safe working practices.

Roles and Responsibilities of Health and Safety Risk Management

Employers' Responsibilities

- worker safety
- machinery, work areas, and equipment kept in a safe condition
- provide training
- provide a safe workplace & PPE
- incident reporting, investigation & Corrective Actions

Employees' Responsibilities

- Everyone is responsible for their own safety and the safety of others...
- Follow OHS programs
- Identify and control hazards

Stop Work Authority

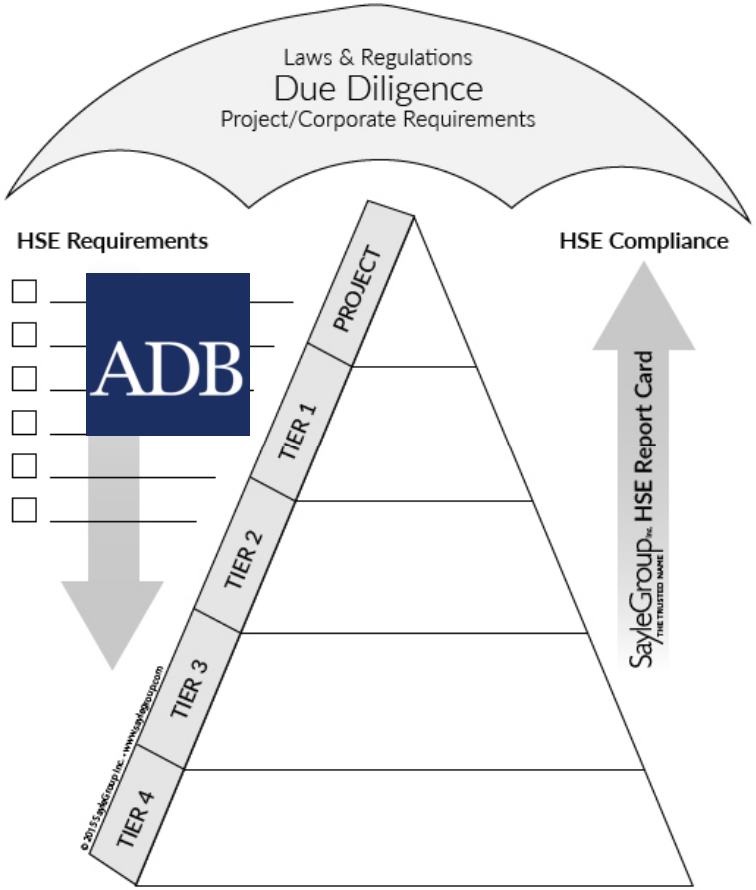
Every worker has the right to stop work where there is an unreasonable / unmitigated HSS risk – without fear of reprisal !

Contractor Supervisor

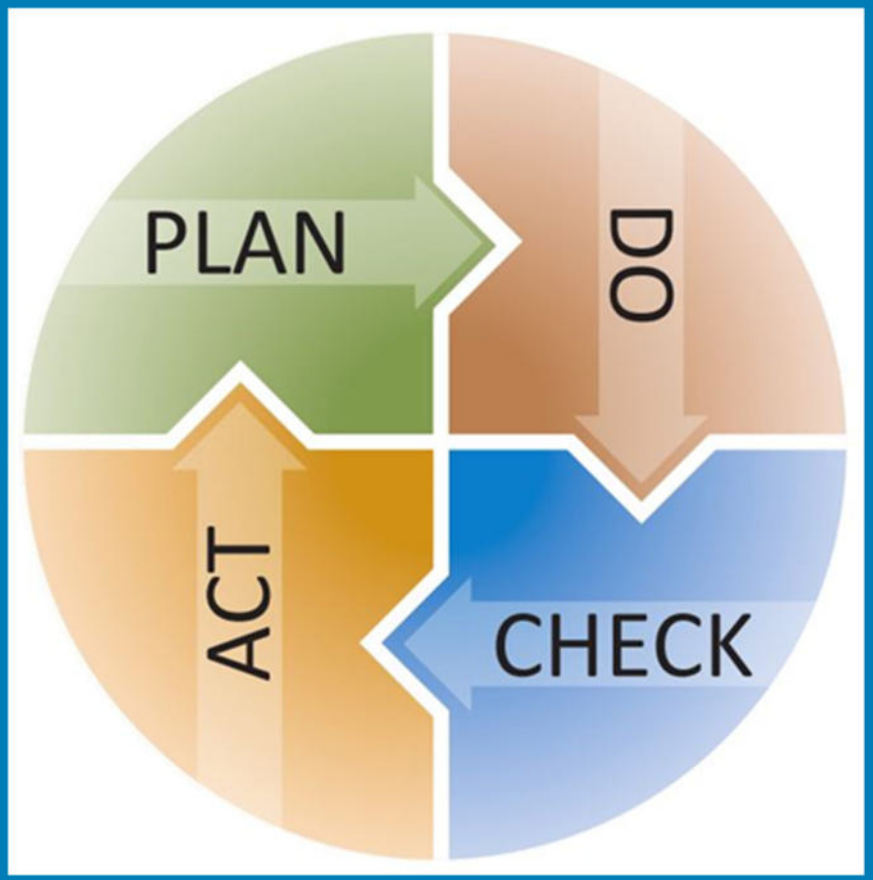
Understanding risk management principles and ensuring workers follow practices that minimize hazards and risks.

Compliance:

Lender
Client / Borrower (EA/IA)
Contractors
Subcontractors
Vendors
Entire Supply Chain



Project HSS Plans



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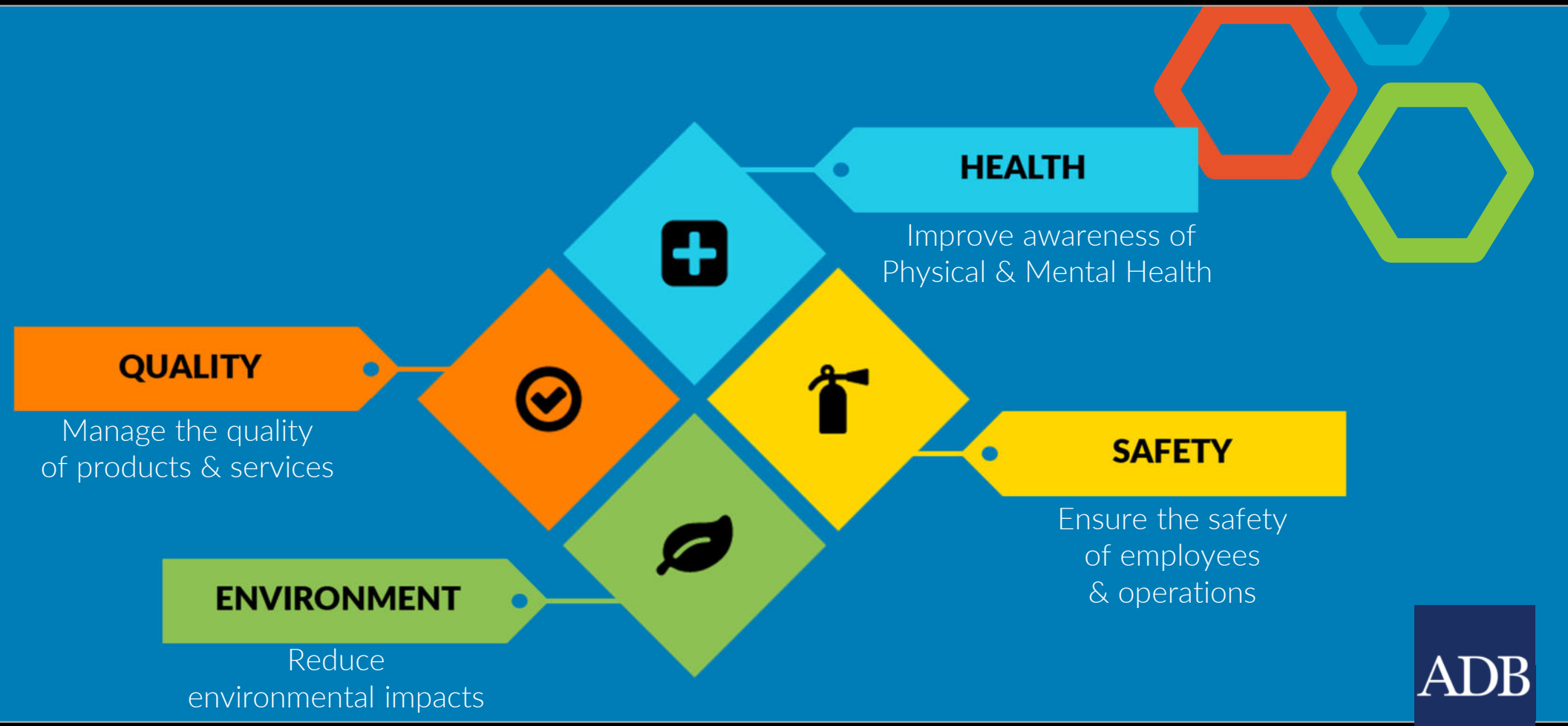
Integration of QHSE...



ADB

Integrated QHSE Management System Framework

QHSE Management System Components

1.0 Introduction
2.0 Regulatory Compliance
3.0 Risk Management
4.0 Quality
5.0 Occupational Health & Safety (OHS)
6.0 Environmental Management
7.0 HR & Training
8.0 Incident Reporting & Investigation
9.0 Emergency Response
10.0 Monitoring & Improvement

Policies, Processes & Procedures

Safe Work Practices

Templates

ADB HSS Good Practice Guide (GPG)

Safeguard Policy Statement

Peer reviewed by the UK based: "**Institution of Occupational Safety & Health" - IOSH**

Chapter No.	Chapter Title	Topics Covered
1	Introduction	• describes the ADB commitment to occupational and community health and safety (OCHS) • identifies OCHS receptors • introduces the concepts of safety culture and life-saving rules • outlines OCHS roles and responsibilities • addresses OCHS monitoring and improvement
2	OCHS Risk Management	• outlines a comprehensive approach to OHS Risk Management, lending its application to the full scope of activities to be carried out by borrowers, clients, and contractors • clarifies the differences between hazards and risks • education and awareness for general application of risk management principles applicable to the management of risk in any form it may present itself • introduces the plan-do-check-act cycle for risk management • introduces the concept of using a risk matrix to rank risks • common risk management techniques at various levels • risk mitigation and the hierarchy of controls
3	Workplace Safety	• OCHS rights and responsibilities of employers, employees and contractors, and the workplace safety responsibility system • common occupational hazards, worksite safety, health and industrial hygiene, OCHS training and awareness, personal protective equipment, and proactive HSSE promotion • contractor management with audits and inspections to ensure compliance verification • safety protocols which are not sector specific and can be found useful for workers (employees/contractors) in many sectors
4	Community Health and Safety (CHS)	• interactions between the workforce and local population with a discussion of CHS application through the various project phases • review of CHS risk assessment through mitigating accidental and natural hazards • infrastructure and community service safety • community disaster and emergency preparedness and response
5	Site Security	• security standards • security planning and risk assessment for project sites • assessing and managing security risks and impacts • project security measures • fragile conflict affected states
6	OCHS Incident Reporting and Investigation	• borrower reporting requirements under loan agreements • common incident classifications • initial response to injuries and incident notification • necessity of incident investigations and reporting • recordkeeping practices
7	Emergency Preparedness and Response	• Incident Command System (ICS) and emergency response principles • emergency classification • roles and responsibilities • emergency preparedness and emergency response plans and bridging documents • communication and response activation, exercises, and drills • public health risks and pandemics

Outline of Draft HSS GPG

ADB

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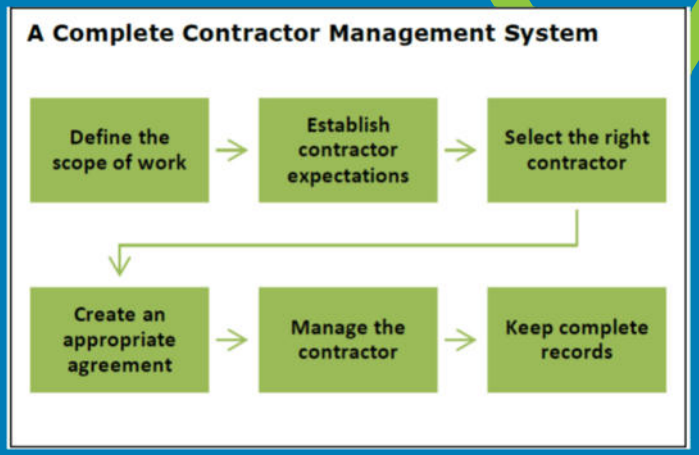
Procurement Considerations



IA/EA, Contractor, Subcontractor, Supply Chain & Vendor Management:

- Terms & Conditions
- Compliance, Verification

Sample format of HSS GPG Manual

More information on ICS roles and responsibilities is found in section 7.6 of this chapter.

7.4 Emergency Response Principles

In an emergency, allocate resources to maximize the effectiveness of the response and minimize the negative effects. ADB borrowers should, at a minimum, be committed to the following measures:

- providing first aid access to the injured, and initiating third party medical aid when needed;
- promptly contacting outside agencies for assistance when needed;
- ensuring regular worksite emergency drills occur to continuously improve the on-site ability to respond to incidents;
- following an effective ICS to ensure all workers are aware of their role in the event of an emergency;
- minimizing damage to communities, equipment, assets, public and private property;
- supporting and bridging to contractor emergency management systems as necessary;
- preserving records and evidence for use in post-incident investigations;
- effectively using the combined resources of contractors, the government and other external services; and
- providing factual information to news media and other stakeholders on a timely basis.

7.5 Classification of Emergencies

This chapter uses a simple outline to define three levels of emergencies. Other emergency classification systems can be used if they are suitable for the project.

Level 1 – Any unplanned event that does not escalate into a serious hazard to life, property or the environment and that can be managed with onsite resources.

The response to Level 1 emergencies is described in Chapter 6 on Incident Reporting & Investigation.

Level 2 – Any unplanned and uncontrolled event that can escalate into serious hazard to life, property or the environment and is contained on-site, but which requires external assistance to manage.

Level 2 emergencies may escalate to Level 3 if control of the emergency is not imminent.

Level 3 – This is a crisis level event, that has serious effects on and outside the site, as well as the external resources typically utilized in a large scale emergency.

7.6 Emergency Roles and Responsibilities

The following table outlines the emergency preparedness and response planning roles and responsibilities of the key stakeholders in ADB-financed projects.

Role	Responsibility
ADB Project Director	• Responsible for ensuring that the project leadership understand the importance of emergency preparedness and have an ERP in place.
Borrower Implementing Agency (IA)	• Ensuring that an up-to-date ERP is in place and made available to all workers.

The first aid equipment on site should be suitable for the number of personnel, type of operation, and the degree of treatment likely to be required prior to transportation to medical facilities.

3.9.3 Competency Assurance

Competency assurance is the process of training, coaching, tracking, monitoring and assessing the competency of workers. Competent workers are more likely to perform their tasks successfully and to have fewer incidents. Competency assurance programs help to identify when workers need further training to do their jobs safely. Competency includes the health and safety aspects of a role as well as the operational aspects of a role.

Supervisors are responsible for coaching workers who are new to their positions or who are given new assignments.

Supervisors may notice that urgent training is required to ensure continued safety of a worker. In such cases, workers should be stopped from continuing in their tasks until they are trained and experienced enough to safely complete the task without direct supervision.

Training provision can be internal or external.

Internal training can be provided by experienced personnel within the organization, skilled in the area of responsibility. Internal OHS training can be in the form of job shadowing, on-the-job-training (OJT), demonstrations, written work instructions, or other form of instruction as deemed appropriate by a Safety Advisor.

External training can be provided by an outside subject matter expert. External training may be selected by the Safety Advisor on the basis of experience with the provider, references to the provider by others, consultation with Supervisors, provider certifications, price, and other factors.

Training should be scheduled and delivered in a timely manner that fits with the operation. Training may be scheduled off-site or on-site. At the end of any training process, the Supervisor forwards copies of any certificates, diplomas, training cards, or attendance sheets to the Safety Advisor and/or HR for record keeping.

All records related to worker training should be retained on file for a period of not less than five years unless otherwise specified by contract or applicable jurisdiction.

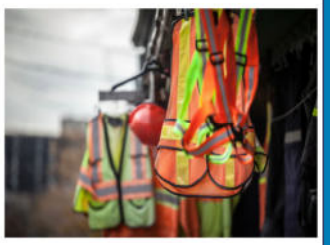
3.9.4 Training Matrix

A training matrix keeps track of worker training experience and qualifications. Each member of the workforce is listed on the training matrix along with a record of the training they have received, and whether the qualification is still valid, expiring, or past expiration. The matrix allows for quick identification of training gaps or required refresher training.

3.10 Personal Protective Equipment

PPE is equipment that protects workers exposed to workplace hazards. PPE should always be used in conjunction with other facility controls and safety systems. Examples of PPE items include gloves, helmets (hard hats), goggles, high-visibility clothing, harnesses, and other gear. PPE is the last resort after all other forms of protection in the hierarchy of control have been implemented (PPE is the last line of defence).

Detailed guidance on PPE is provided in Appendix 2.



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Examples of Safe Work Practices...

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- Job Safety Analysis (JSA)
- Lock-out Tag-out (LOTO)
- Hot Work & Electrical
- Working at Height
- Work Over Water
- Scaffolding
- Confined Space Entry
- Lifting & Rigging
- Chemicals & HazMat
- Waste Management
- Vessel Safety
- Training, Toolbox Talks
- Field Tools, Checklists & Forms

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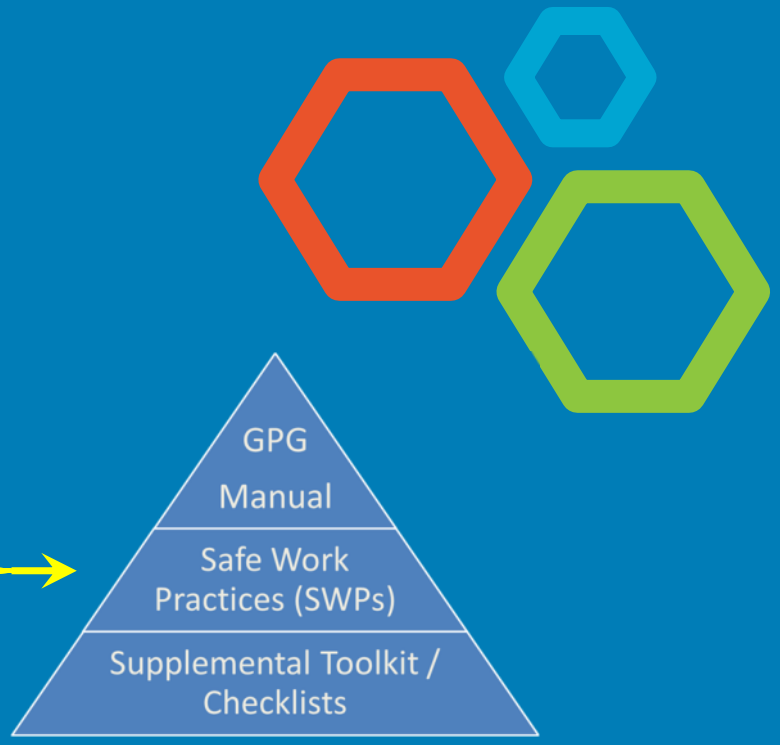
SAFETY SYSTEMS
OPERATIONAL EXCELLENCE

- Industrial Hygiene
- Work at Height
- Chemical and Hazardous Materials
- Confined Spaces
- Hotwork
- Excavation, Trenching and Backfilling
- Mechanical Lifting and Rigging
- Scaffolding
- Energy Isolation/Lockout-Tagout
- Permit to Work
- Housekeeping / Worksite Sanitation
- Hand and Power Tool Use
- Working Alone
- Heavy Equipment Operations
- Manual Lifting
- Vehicle Safety and Traffic Control

List of ADB Draft Safe Work Practices

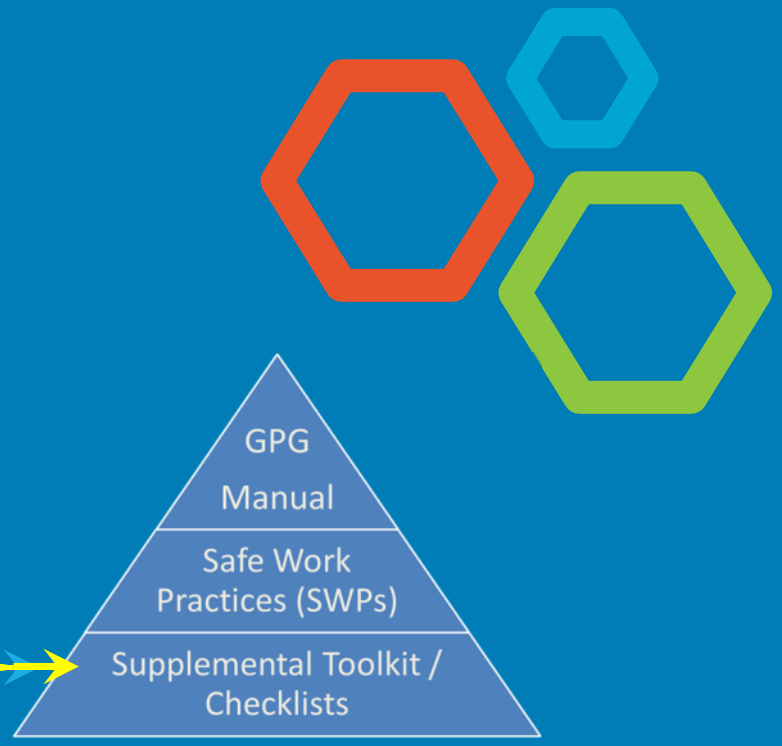


- Emergency Response
- Security Measures
- Fire Plan Guidance
- Waste Management
- Disease Prevention
- Indoor Air Quality
- Coldwork
- Office Safety
- Working in the Warehouse/Yard
- Wildlife Encounters and Avoidance
- Marine Work Operations
- Compressed Gas Cylinders
- Working Around Open Holes
- Use of Portable Fire Extinguishers
- Abrasive Blasting
- Industrial Painting

List of ADB Draft Safe Work Practices

- Site Safety Inspection
- Work at Height
- Hot Work
- Cold Work
- Permit to Work
- Lifting and Rigging
- Scaffolding
- Lockout-Tagout
- JSA/TRA/FLHA
- Confined Space Entry
- Incident Notification
- Incident Root Cause Analysis
- Corrective Action Template

List of ADB Draft Checklists



Safe Work Practice

General site safety checklist

GENERAL SITE SAFETY CHECKLIST

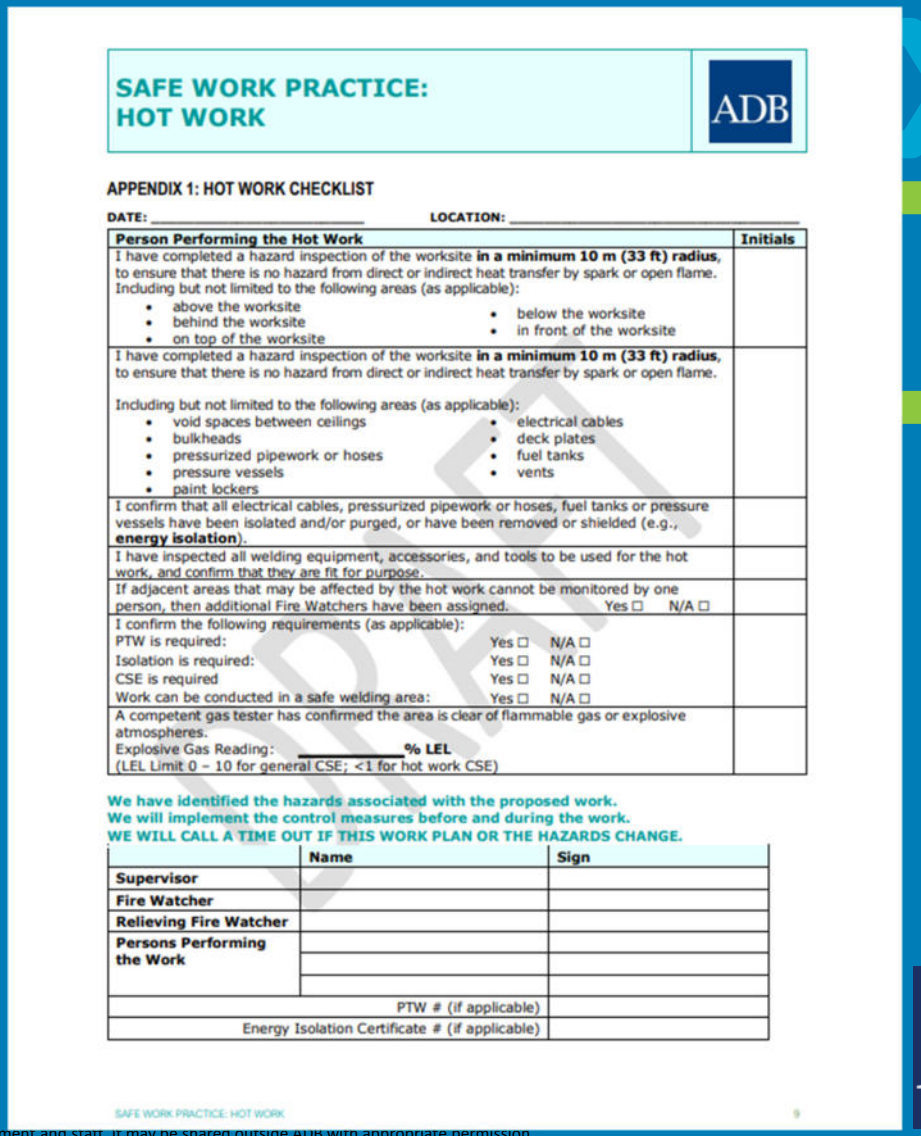
For detailed guidance on safety requirements, refer to the relevant ADB safe work practices (SWPs).
Mark "N/A" in the YES column for any line items that are Not Applicable for the area being inspected.

Project:		**Location:**	
Date:		**Inspector:**	

GENERAL SAFETY	YES	NO	WORK AT HEIGHT	YES	NO
Is the site health and safety plan available to workers?			Are ladders safe and inspected as appropriate?		
Is the site properly secured at all times of the day and the night?			Do extension and straight ladders extend >1 metre beyond the landing area?		
Is the work site tidy and orderly?			Are workers using three points of contact when climbing ladders?		
Is there enough light for workers to perform work safely?			Are appropriate fall protection devices being used where required?		
Is an emergency response plan available to workers?			Is scaffolding safe and inspected as appropriate?		
Are there clearly indicated muster points on the site?			Is scaffolding designed by a qualified person?		
Is a site traffic safety plan in place?			Is scaffolding tagged?		
Is adequate potable drinking water available on site?			**HAZARDOUS MATERIALS**	**YES**	**NO**
Are there sufficient, clean lavatory facilities on site?			Are safety data sheets available to all workers?		
Are worker rest and eating areas provided where workers are not exposed to hazards?			Are all hazardous materials appropriately labeled?		
Is worksite signage appropriate and sufficient?			Are all hazardous materials appropriately stored?		
Is a record of worker training available?			Are spill kits available for hazardous material spills?		
PERSONAL PROTECTIVE EQUIPMENT	**YES**	**NO**	Are compressed gas cylinders stored upright and properly secured?		
Are workers wearing high-visibility safety clothing?			**EXCAVATION**	**YES**	**NO**
Are workers wearing safety glasses or goggles?			Is a competent person on site when excavation / trenching work is occurring?		
Are workers wearing safety footwear?			Are ladders in place for excavations deeper than 1.2 metres?		
Are workers wearing hard hats?			Is protection from cave-ins in place for excavations deeper than 1.5 metres?		
Are workers wearing hearing protection where required?			Is any sloping or benching appropriate for the soil type?		
Are workers wearing appropriate gloves or other hand protection for their tasks?			Is a daily inspection carried out for all excavations on site?		
Are workers wearing respiratory protection where required?			Is ventilation in place in excavations where combustion equipment is used?		

Safe Work Practice

Hot work checklist



SAFE WORK PRACTICE: HOT WORK

APPENDIX 1: HOT WORK CHECKLIST

DATE: _____ **LOCATION:** _____

Person Performing the Hot Work	**Initials**
I have completed a hazard inspection of the worksite **in a minimum 10 m (33 ft) radius**, to ensure that there is no hazard from direct or indirect heat transfer by spark or open flame. Including but not limited to the following areas (as applicable): • above the worksite • below the worksite • behind the worksite • in front of the worksite • on top of the worksite	
I have completed a hazard inspection of the worksite **in a minimum 10 m (33 ft) radius**, to ensure that there is no hazard from direct or indirect heat transfer by spark or open flame. Including but not limited to the following areas (as applicable): • void spaces between ceilings • electrical cables • bulkheads • deck plates • pressurized pipework or hoses • fuel tanks • pressure vessels • vents • paint lockers	
I confirm that all electrical cables, pressurized pipework or hoses, fuel tanks or pressure vessels have been isolated and/or purged, or have been removed or shielded (e.g., **energy isolation**).	
I have inspected all welding equipment, accessories, and tools to be used for the hot work, and confirm that they are fit for purpose.	
If adjacent areas that may be affected by the hot work cannot be monitored by one person, then additional Fire Watchers have been assigned. Yes ☐ N/A ☐	
I confirm the following requirements (as applicable): PTW is required: Yes ☐ N/A ☐ Isolation is required: Yes ☐ N/A ☐ CSE is required Yes ☐ N/A ☐ Work can be conducted in a safe welding area: Yes ☐ N/A ☐	
A competent gas tester has confirmed the area is clear of flammable gas or explosive atmospheres. Explosive Gas Reading: _____ **% LEL** (LEL Limit 0 – 10 for general CSE; <1 for hot work CSE)	

We have identified the hazards associated with the proposed work.
We will implement the control measures before and during the work.
WE WILL CALL A TIME OUT IF THIS WORK PLAN OR THE HAZARDS CHANGE.

	Name	**Sign**
Supervisor		
Fire Watcher		
Relieving Fire Watcher		
Persons Performing the Work		
PTW # (if applicable)		
Energy Isolation Certificate # (if applicable)		

SAFE WORK PRACTICE: HOT WORK 9

Safe Work Practice

Work at height checklist

SAFE WORK PRACTICE:
WORK AT HEIGHT

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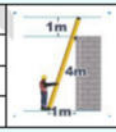
APPENDIX 1: WORK AT HEIGHT CHECKLIST

Name:	Signature:	Date:		
			YES	NO
Determine whether a permit to work is required, and if so, obtain it.				
Complete a written fall protection and rescue plan when working over 7.3 metres or 21 feet.				
Are all workers competent and trained for work at height?				
Is the equipment positioned on a level, stable surface?				
Has proper barricading been put in place?				
Is the equipment in good condition with a suitable load rating, and made from acceptable material?				
Is the work being conducted at a safe distance from high voltage cables?				
Ladders				
The ladder is tied off or a co-worker is holding the ladder.				
The top of the ladder extends 1 metre above the edge of the work.				
The ladder is at a suitable angle (3-4:1 ratio)				
There is a minimum overlap of 1 metre for extended sections.				
Power Elevated Platforms				
The platform annual inspection certificate is available and current.				
The man basket has been inspected for safety.				
A daily inspection is completed prior to use.				
In a bucket lift, workers are tied off at all times to an engineered point with a lanyard and shock absorber. In other lifts, workers are tied off with a maximum 2-metre lanyard without a shock absorber when in motion.				
Scaffolds				
Fall protection is used when erecting or dismantling scaffold at heights over 1.8m.				
Proper top guardrails, mid rails, and toe boards are installed.				
The working platform is fully decked, properly secured, and/or cleated.				
Each level is locked in place before installing the next level.				
Tie-ins are installed when the total height to base ratio exceeds 3:1.				
Scaffolds are erected by competent personnel and are tagged prior to use.				
Access to the scaffold is only made using a properly installed ladder or stairs.				
No work is permitted under the scaffold - only authorized workers in the work area.				
Equipment is lifted and lowered by rope, hoist, or worker-to-worker.				
Work Within 2.0 Metres of an Unguarded Edge				
Approved safety harnesses, lanyards, and/or lifelines are being used with suitable anchor points.				
All workers are wearing harnesses and are tied off at all times.				
The fully extended lanyard will prevent the worker from striking the ground (fall arrest).				
Lanyards are used to prevent workers from reaching the unguarded edge (fall restraint)				
Installing proper top guardrails, midrails, and toe boards has been considered.				

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PPE – the last line of defense !

Head Protection

Purpose

Safety headwear protects workers from:

1. impact from moving or falling objects
2. splashes from harmful substances
3. contact with energized objects and equipment

Recommendations

4. Use safety headwear that meets an international safety standard.
5. Use safety headwear made up of two parts:
6. the shell (light and rigid to deflect blows), and
7. the suspension (to absorb and distribute the energy of the blow).

8. Do not alter safety headwear in any way, such as drilling holes, carving, etching, or painting them, which can reduce its protection qualities.
9. Adjust and maintain the suspension system to ensure that the hat shell does not touch the head.
10. Replace safety headwear every five years, even if no damage has occurred, and replace immediately after any severe impact.
11. Use a chin strap when working in high wind conditions or any other situation that could cause the safety headwear to fall off.
12. Never use varsol or other organic solvents or degreasers on the plastic surfaces of safety headwear.

Hearing Protection

Purpose

Hearing protection prevents high levels of sound energy reaching the inner ear.

Recommendations

1. Use hearing protection that meets an international safety standard.
2. If workers cannot carry on a conversation at a normal level of voice when they are standing one metre apart, hearing protection should be used. However, any sound over 80 dB requires hearing protection, depending on the amount of time the worker is exposed.
3. Use barricades and signage to identify areas where workers must wear hearing protection.
4. Clean earplugs or muffs to prevent ear infection.
5. Do not reuse single use earplugs as this increases risk of ear infection.
6. Dry cotton batting, wax-impregnated cotton batting, and earplugs with metal inserts **do not work** to protect against hearing loss.
7. Earmuffs are more effective than earplugs.
8. Earplugs can become loose due to talking or chewing, so periodically re-insert the earplugs.
9. Hypo-allergenic earplugs are available if required.

Safety Clothing

Purpose

Safety clothing helps keep workers visible and protects their body from various kinds of exposure that can occur at the work site, such as (but not limited to):

1. exposure to fire,
2. exposure to splashing hazardous liquids,
3. exposure to temperature extremes,
4. body impacts from falling or moving objects, and
5. cuts from sharp objects or abrasive materials.

Recommendations

6. Safety clothing that should be considered based on job exposures and hazard types includes:
7. flame and chemical resistant clothing,
8. boot covers and overshoes,
9. specialty hand pads and grips,
10. leather aprons and leg protection,
11. leg, chin, arm, and belly guards, and
12. full body protective suits.

13. Workers should never wear synthetic fabrics where explosions or fires could occur.
14. Loose and dangling clothing is a safety hazard and is not permitted at work sites.
15. Safely dispose of any clothing that becomes contaminated with hazardous chemicals.
16. Wear high visibility vests at the work site.

Eye Protection

Purpose

Eye protection prevents eye injuries resulting from:

1. flying objects and particles,
2. splashing liquids, including molten metals, and
3. ultraviolet, infrared, and visible radiation.

Recommendations

4. Eye protection is available in two formats: basic eye protection and face protection.
5. Basic eye protection includes eyecup and monoframe goggles and spectacles with or without side shields.
6. Face protection includes plastic face shields that are chemical and impact resistant, metal face shields, welder's shields and filter plates and lenses.

7. Use eye protection that meets an international safety standard.
8. Eye protection should usually be worn at all times on a work site, but especially when doing any work that produces flying or falling particles.
9. Safety goggles must be worn near sandblasting operations or when moving chemicals.
10. Welders must use welding helmets with shaded lenses. Welder helpers must wear safety glasses and a full-face shield.
11. To prevent fogging of eye protection devices, use antifogging solutions on lenses.
12. Do not wear contact lenses at the work site.

PPE – the last line of defense !

Hand Protection

Purpose

Hand protection keeps workers' hands safe from hazards including:

1. exposure to chemicals,
2. exposure to temperature extremes,
3. physical injuries such as scrapes, abrasions, blisters, pinches, bruises, and punctures, and
4. electrical shocks.

Recommendations

5. Use hand protection that meets an international safety standard.
6. Wear gloves that fit properly and have tight cuffs.
7. When handling hazardous materials, wear gloves made from materials that are appropriate for the hazard. Consult the safety data sheet (SDS) for details.
8. When working with high voltage equipment, wear rubber-insulated gloves with a leather outer glove.

Foot Protection

Purpose

Foot protection keeps workers' feet safe from compression, puncture and impact injuries.

Recommendations

1. Use foot protection that meets an international safety standard.
2. Fully lace all foot protection and extend pants or coveralls over the top of the footwear.
3. Wear approved winter boots in extremely cold conditions.

Fall Protection

Purpose

Fall protection devices prevent workers from injuries when they are exposed to the hazards of the following types of falls:

1. falls of more than two metres,
2. falls into water or other liquids,
3. falls into operating machinery,
4. falls into hazardous substances, and
5. falls through openings in work surfaces.

Recommendations

6. Use fall protection devices that meet an international safety standard.
7. Use other fall protection measures on the work site, such as barricades, guardrails, and toe boards.
8. Always inspect fall protection devices before starting to work.
9. Always attach fall protection devices to sufficient anchor points.
10. Dispose of fall protection devices that have been impacted by a fall.
11. Never tie a knot in a lanyard for any reason—it weakens the lanyard.
12. Never use a full body harness and lanyard near any rotating equipment.
13. Never attach snap hooks to each other.
14. Always attach the lanyard to the D-ring on the back of the harness, which allows the body to flex forward during a fall.

Personal Flotation Devices

Purpose

Personal flotation devices (PFDs) provide buoyancy in water, helping to prevent drowning when workers are engaged in activities on or near water.

Recommendations

1. Use PFDs that meet an international safety standard.
2. Use a PFD that ensures the wearer is supported with their nose and mouth clear of the water under the expected conditions of use.
3. Carefully secure the PFD to provide positive support in the water and allow the wearer to swim or actively assist themselves and others.

List of ADB Draft Safe Work Practices

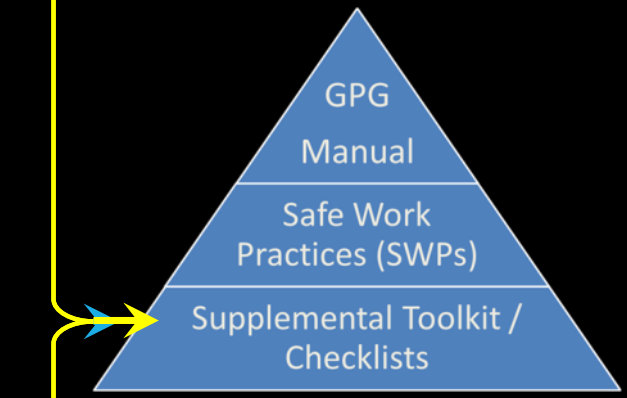
- Industrial Hygiene
- Work at Height
- Chemical and Hazardous Materials
- Confined Spaces
- Hotwork
- Excavation, Trenching and Backfilling
- Mechanical Lifting and Rigging
- Scaffolding
- Energy Isolation/Lockout-Tagout
- Permit to Work
- Housekeeping / Worksite Sanitation
- Hand and Power Tool Use
- Working Alone
- Heavy Equipment Operations
- Manual Lifting
- Vehicle Safety and Traffic Control

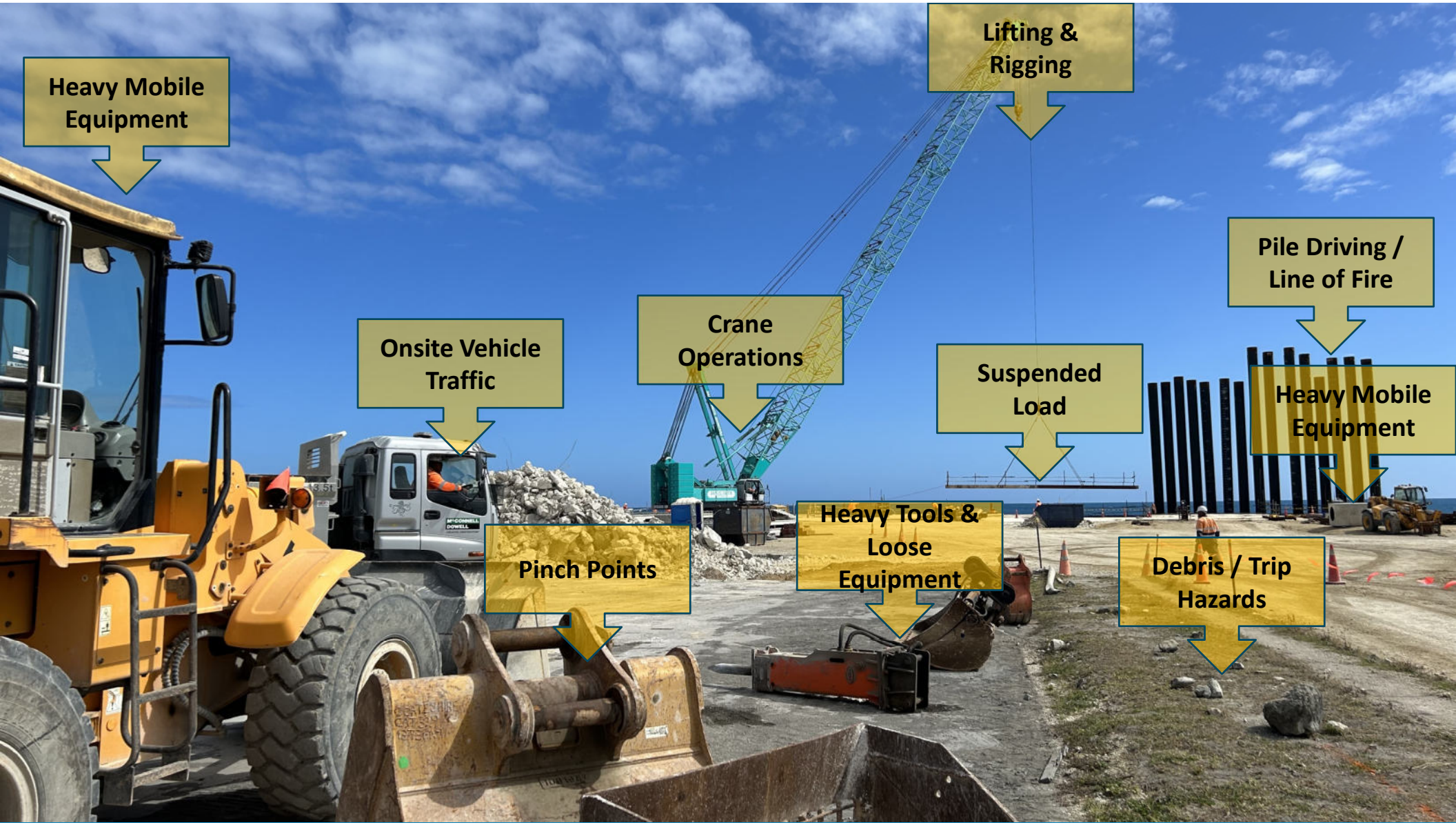
List of ADB Draft Safe Work Practices

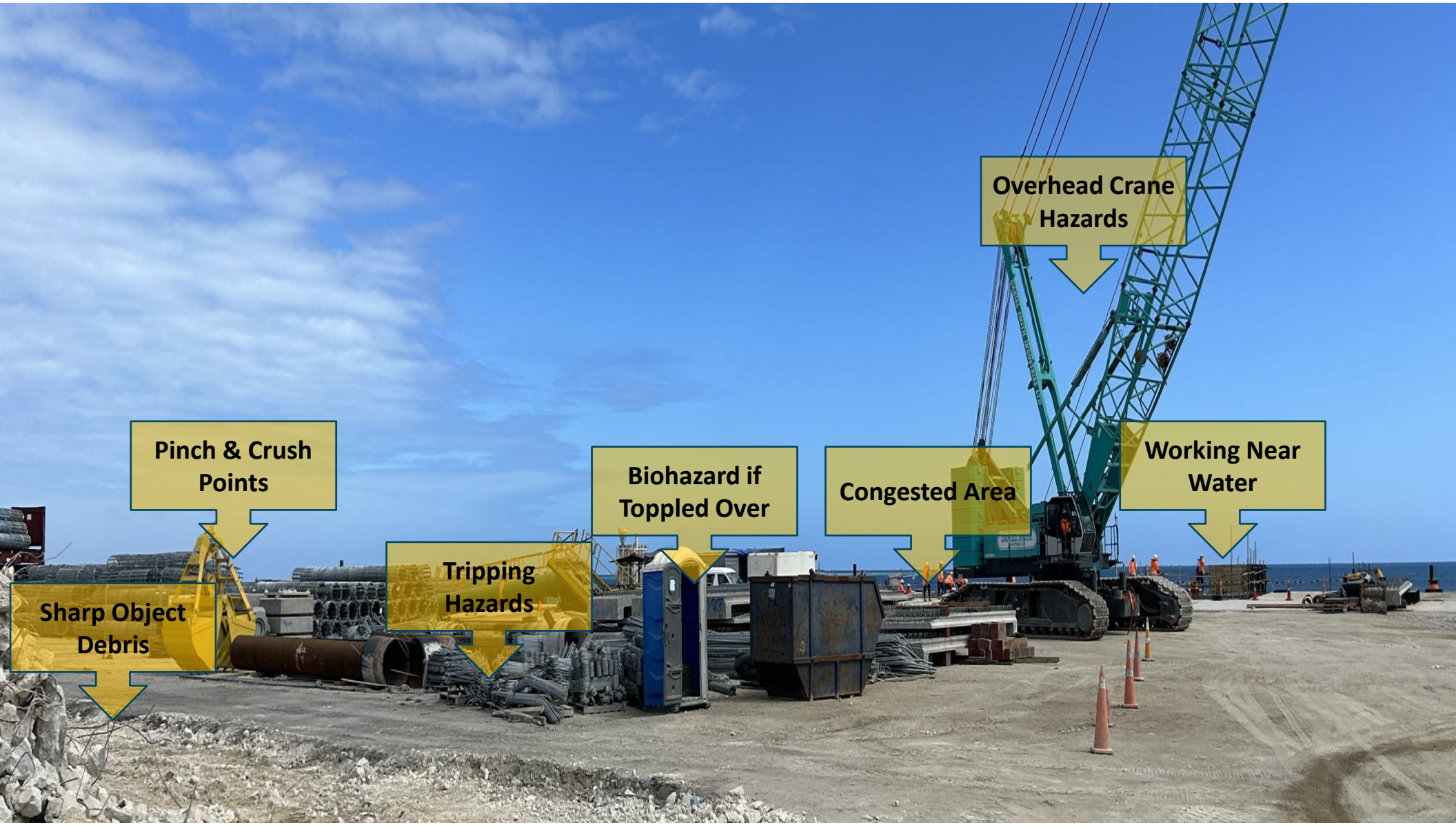
- Emergency Response
- Security Measures
- Fire Plan Guidance
- Waste Management
- Disease Prevention
- Indoor Air Quality
- Coldwork
- Office Safety
- Working in the Warehouse/Yard
- Wildlife Encounters and Avoidance
- Marine Work Operations
- Compressed Gas Cylinders
- Working Around Open Holes
- Use of Portable Fire Extinguishers
- Abrasive Blasting
- Industrial Painting

List of ADB Draft Checklists

- Site Safety Inspection
- Work at Height
- Hot Work
- Cold Work
- Permit to Work
- Lifting and Rigging
- Scaffolding
- Lockout-Tagout
- JSA/TRA/FLHA
- Confined Space Entry
- Incident Notification
- Incident Root Cause Analysis
- Corrective Action Template




Heavy Mobile Equipment
Lifting & Rigging
Pile Driving / Line of Fire
Onsite Vehicle Traffic
Crane Operations
Suspended Load
Heavy Mobile Equipment
Pinch Points
Heavy Tools & Loose Equipment
Debris / Trip Hazards


Overhead Crane Hazards
Pinch & Crush Points
Biohazard if Toppled Over
Congested Area
Working Near Water
Tripping Hazards
Sharp Object Debris


Air Quality
Potential HAZMATs
Heavy Equipment
Sharp Object Debris
Vehicle Traffic
Sharp Object Debris
Tripping Hazards
HITACHI
TOYOTA

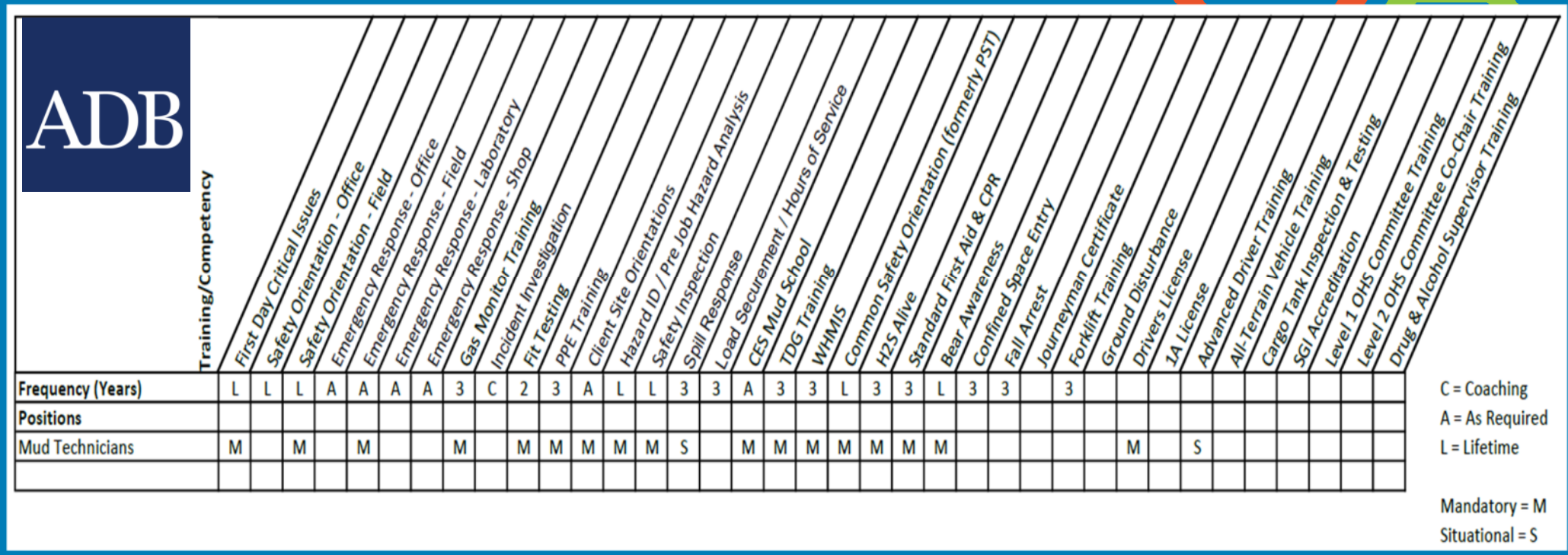

Biohazard
Potential Entrapment
Debris
Biohazard
Steep Slope Near Water
Fakatu'utāmaki
Danger
Tapu alu ki heni
NO ENTRY
Tapu kaukau
Restricted Area
Feitu'u Tapu

Training and Awareness

Training should include:

- Regulatory requirements
- Site Orientations HSS topics
- Hazards and Controls (SWPs)
- Emergency Response
- Certifications & Competency Assurance
- “OJT” & Supervision

Safety Training Matrix – by Position



Training/Competency	First Day Critical Issues	Safety Orientation - Office	Safety Orientation - Field	Emergency Response - Office	Emergency Response - Field	Emergency Response - Laboratory	Emergency Response - Shop	Gas Monitor Training	Incident Investigation	Fit Testing	PPE Training	Client Site Orientations	Hazard ID / Pre Job Hazard Analysis	Safety Inspection	Spill Response	Load Securement / Hours of Service	CES Mud School	TDG Training	WHMIS	Common Safety Orientation (formerly PST)	H2S Alive	Standard First Aid & CPR	Bear Awareness	Confined Space Entry	Fall Arrest	Journeyman Certificate	Forklift Training	Ground Disturbance	Drivers License	1A License	Advanced Driver Training	All-Terrain Vehicle Training	Cargo Tank Inspection & Testing	SGI Accreditation	Level 1 OHS Committee Training	Level 2 OHS Committee Co-Chair Training	Drug & Alcohol Supervisor Training
Frequency (Years)	L	L	L	A	A	A	A	3	C	2	3	A	L	L	3	3	A	3	3	L	3	3	L	3	3		3											
Positions																																						
Mud Technicians	M		M		M			M		M	M	M	M	M	S		M	M	M	M	M	M	M						M		S							

C = Coaching
A = As Required
L = Lifetime

Mandatory = M
Situational = S

Health and Safety Committees

- Provide a forum for discussing OHS issues
- Terms of Reference
- Management & Worker Reps
- Minutes – Action Tracking

Summary

- every worker has the authority to stop work
- anxiety, depression, and work-related stress are common mental health conditions
- training is critical for all the workforce

MODULE 4
Community Health and Safety

Identify and assess the risks and potential impacts on community H&S during the life-cycle of a project.

Projects

Communities have many benefits from ADB projects.

Projects can also benefit from a local source of workers, supplies and services.

Community H&S Risk Management

Project activities may expose the community to hazards.

Sexual Exploitation, Abuse and Harassment (SEAH)

SEAH can occur between workers at a workplace, or between workers and the local community.

Summary

- projects may benefit a community
- activities may expose the community to hazards
- H&S management can minimize risks

MODULE 5
Site Security

Identify when a borrower or contract worker would require security personnel.

Security Standards

What security risks could projects create for communities?

Fragile and Conflict-Affected States

According to the European Union, c1.5 billion people live in fragile and conflict-affected states.

Five Good Security Practice Principles

Security Risk Assessment and Planning

- Assess Security Risks
- Prevent and Mitigate Impacts
- Manage Private Security
- Manage Relationship with Public Security
- Address Security Grievances

Summary

- Security personnel should be trained, screened, and subject to background checks
- Project security risk must be assessed and managed
- Risks in fragile and conflict-affected states are more unpredictable

MODULE 6
Incident Reporting and Investigation

Identify best practices for incident reporting and investigation

Incident Reporting Requirements

In many countries there are requirements to report incidents to law enforcement and other agencies.

Often within specific timeframes.

ADB Legal Agreements

ADB expects borrowers to comply with applicable national incident reporting requirements.

Proposed ADB requirements

Initial Notification of incidents is to be provided to ADB no later than within **3 working days**

A more detailed incident investigation report is required within **21 days** of the incident.

INCIDENT NOTIFICATION FORM

Project:		**Incident Date:**	
Location:		**Incident Time:**	
Equipment Involved:		**Operation in Progress:**	

Weather: ☐ Clear ☐ Dark ☐ Rain ☐ Snow ☐ High Winds ☐ Other (describe):
Visibility: ☐ Artificial Light ☐ Dark ☐ Dawn ☐ Daylight ☐ Dusk

Reporting Level of Incident:

☐ Fatality ☐ Lost Time ☐ Restricted Work ☐ Medical Aid ☐ First Aid	☐ Near Miss ☐ Equipment Damage ☐ Property Damage ☐ Fire/Explosion	☐ Business Interruption ☐ Security/Trespass/Theft ☐ Mobile Equipment ☐ Vehicle ☐ Spill/Release	☐ Government Reportable ☐ Non-reportable ☐ Contravention ☐ Public Complaint

Contractor Incident: ☐ Yes ☐ No **Contractor name:**

Report Prepared by: Signature: Date:	**Supervisor's Name:** Tel. No. Date:

AFFECTED PERSONS (Worker Positions)

DESCRIPTION OF INCIDENT (Describe what, when, why, who and how. Use separate pages if required. Attach photos if applicable.)

WITNESSES- Provide separate witness reports

Name	Position	Contact Information

NOTIFICATIONS

What internal notifications have been made?	What external notifications have been made?

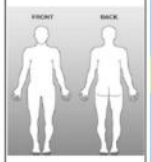
INCIDENT NOTIFICATION FORM

INJURY INFORMATION (if applicable)

Position:	Current condition:

Was injured person(s) taken to hospital? Yes ☐ No ☐
(If yes, provide name and location of the hospital)

Indicate the area of injury, if applicable, on the diagram to the right, and describe the injury in the space below:



VEHICLE INFORMATION (if applicable)

Driver's Name:	Driver's Licence No.:
Year, Make & Model:	Driver's Phone Number:
Licence Plate or Serial Number:	Insurer and Policy No.:
Was seat belt done up? ☐ Yes ☐ No	Was a cell phone being used? ☐ Yes ☐ No
Were police notified? Yes ☐ No ☐	Name of police officer:
Road conditions: ☐ Dry ☐ Gravel ☐ Wet ☐ Icy	Other Info/Attachments:

Spill/Release Information (if applicable)
Product: **Volume:** **Quantity Recovered:**

Initial Causal Analysis of Incident:

Direct Cause: (what / how)

Root Cause: (why)

Corrective Actions to Prevent Recurrence:

Note: Refer to the "ADB Root Cause Investigation & Corrective Action Form" for further detail.

Root Cause Analysis - RCA

Root cause analysis should answer:

- What happened?
- How did it happen?
- Why did it happen?
- What needs to be corrected to prevent it from happening again?

“Five Whys” Method

1) Why?

2) Why?

3) Why?

4) Why?

5) Why?

Problem: A worker slips and falls and suffers an injury

1) Why?	There was a pool of oil on the floor
2) Why?	Oil spilled from a valve
3) Why?	An oil leak from the valve was not detected
4) Why?	The valve was not inspected regularly
5) Why?	The valve was not in the maintenance system

INCIDENT ROOT CAUSE INVESTIGATION AND CORRECTIVE ACTION FORM

Project:		**Incident Date:**	
Location:		**Incident Time:**	
Incident Title:			

Has the Incident Notification Form been completed? ☐ Yes ☐ No
If not, complete the incident notification form before completing this form.

☐ Fatality ☐ Lost Time ☐ Restricted Work ☐ Medical Aid ☐ First Aid	☐ Near Miss ☐ Equipment Damage ☐ Property Damage ☐ Fire/Explosion	☐ Business Interruption ☐ Security/Trespass/Theft ☐ Mobile Equipment ☐ Vehicle ☐ Spill/Release	☐ Government Reportable ☐ Non-reportable ☐ Contravention ☐ Public Complaint

Report Prepared by: Signature: Date:	**Supervisor's Name:** Signature: Date:

This form is used to help analyze incident **root causes** and **contributing factors**. Incidents rarely arise due to one single cause, and there are often multiple contributing factors that are involved in an incident.
A **cause** is a condition that produces an effect. If a cause is eliminated, the effect is eliminated.
A **contributing factor** is a condition that influences the effect but does not cause the effect. If the contributing factor is eliminated, the effect is not necessarily eliminated but may be influenced in other ways, such as being less severe, less likely, proceeding more slowly, or other similar effects.

DESCRIPTION OF INCIDENT (Use separate pages if required. Attach photos if applicable.)

Root Cause and Contributing Factor Analysis (add more pages if necessary for any section)

LEADING EVENTS ANALYSIS (Describe the events leading up to the incident that were different to a normal sequence of events for this activity. Consider whether changes from normal sequences of events were causes or contributing factors to the incident.) (Refer to Chapter 6 of the ADB OCHS Guide for detail)

Were the proper safe work practices and procedures being used by the workers in the events leading up to the incident? If not, why not?

INCIDENT ROOT CAUSE INVESTIGATION AND CORRECTIVE ACTION FORM

Were relevant legislation and standards being followed by the workers in the events leading up to the incident? If not, why not?

Were there any mechanical failures or defects that led to the incident? If yes, describe below:

Were the proper safety devices in place and being used? Were workers using proper personal protective equipment (PPE)? If not, why not?

Did the actions or lack of actions of anyone at the worksite contribute to the incident? If yes, describe below:

Were there any unusual conditions that contributed to the incident, such as (but not limited to) weather, other activities in the area, or anything else that was not typical for the task?

INCIDENT ROOT CAUSE INVESTIGATION AND CORRECTIVE ACTION FORM

Did the workers present at the incident respond in a safe and appropriate way? Describe below:

Were the workers adequately trained to respond to the incident? If not, what training would have helped to lead to a better outcome?

Are there adequate procedures in place to respond to similar incidents? If not, what procedures need to be developed?

Check any causes and contributing factors from the following list. If necessary, add additional causes and contributing factors.

- ☐ Operating equipment without training
- ☐ Operating equipment without proper care
- ☐ Operating equipment without safety devices in place or with inoperable safety devices
- ☐ Inadequate warning to workers of a safety issue
- ☐ Inadequate barriers or barricades
- ☐ Using defective tools or equipment
- ☐ Proper equipment unavailable
- ☐ Improper loading
- ☐ Poor housekeeping practices
- ☐ Repetitive action injury
- ☐ Poor maintenance of tools/equipment
- ☐ Hazardous conditions (gas, dust, fumes)
- ☐ Inadequate site security
- ☐ Inadequate worker protection from toxic substances
- ☐ Inadequate PPE
- ☐ Improper use of PPE
- ☐ Inadequate lighting
- ☐ Inadequate ventilation
- ☐ Inadequate supervision
- ☐ Inadequate training
- ☐ Fatigue
- ☐ Worker(s) under the influence of substances such as alcohol or medications
- ☐
- ☐
- ☐

INCIDENT ROOT CAUSE INVESTIGATION AND CORRECTIVE ACTION FORM

List the contributing factors and their involvement as a cause of the incident.

Contributing Factors	Involvement

Describe the root cause (s) below:

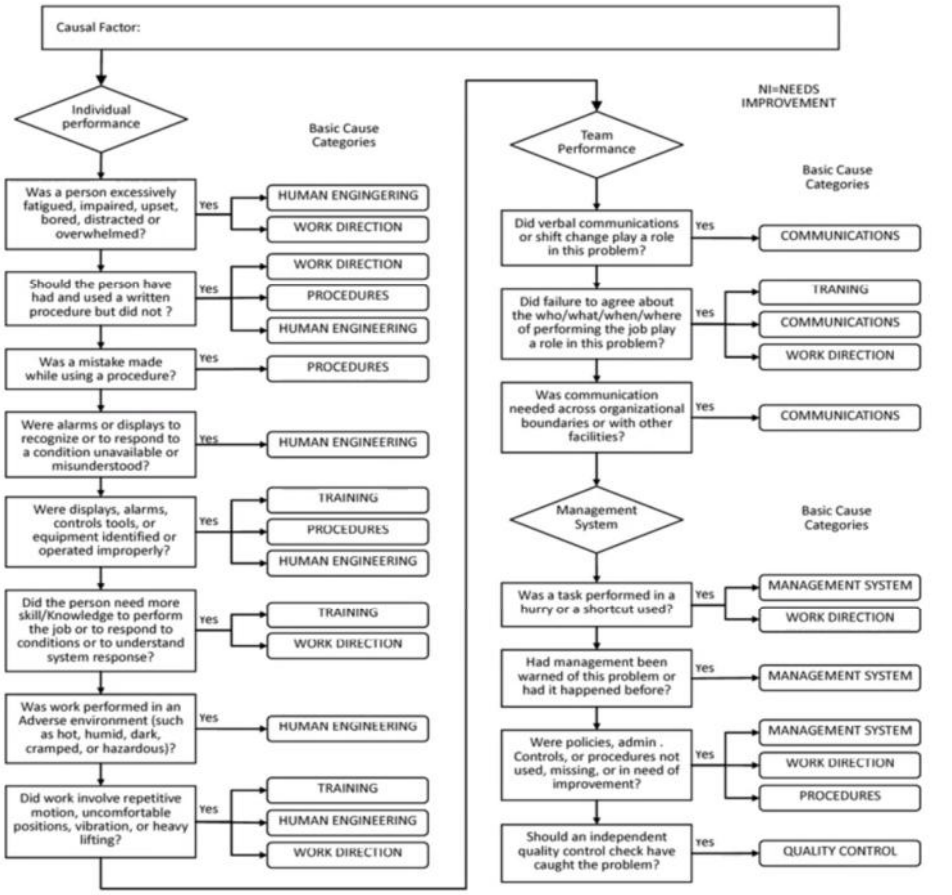
Corrective Action Analysis

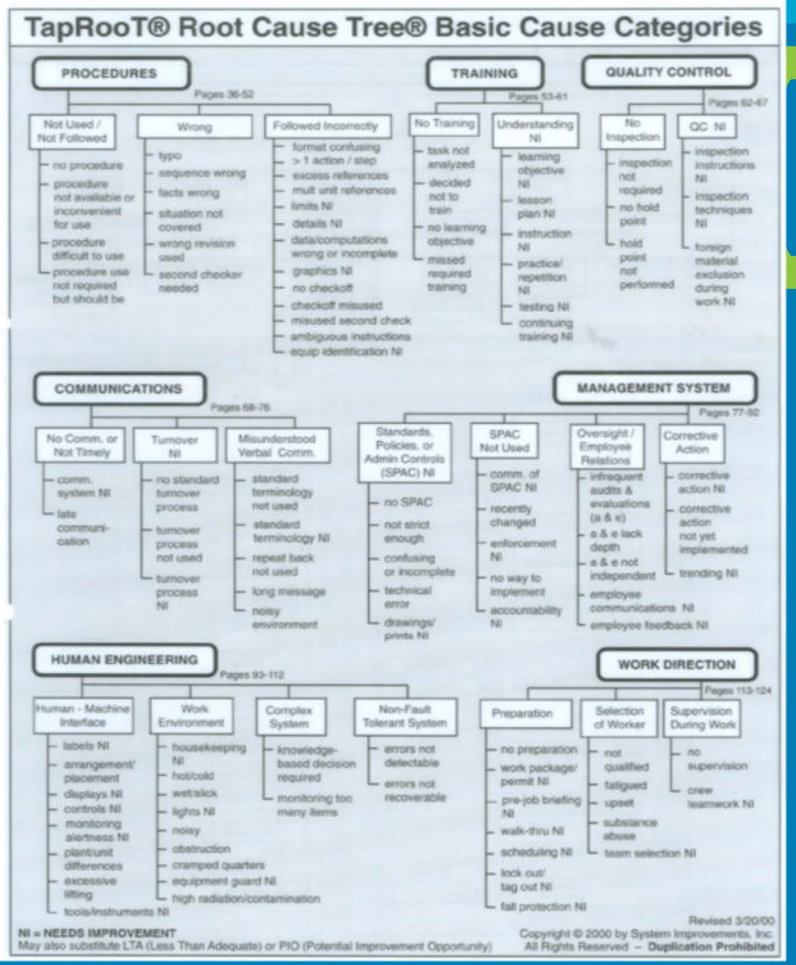
List the corrective actions already taken or planned to prevent a similar incident from occurring. Indicate whether the corrective action is already complete and who is responsible for implementing it.

Corrective Action	Person Responsible	Status?

Summarize any further information learned from this root cause and contributing factor analysis, including any information that needs to be shared with the workers or worksite management.

Tap Root Chart

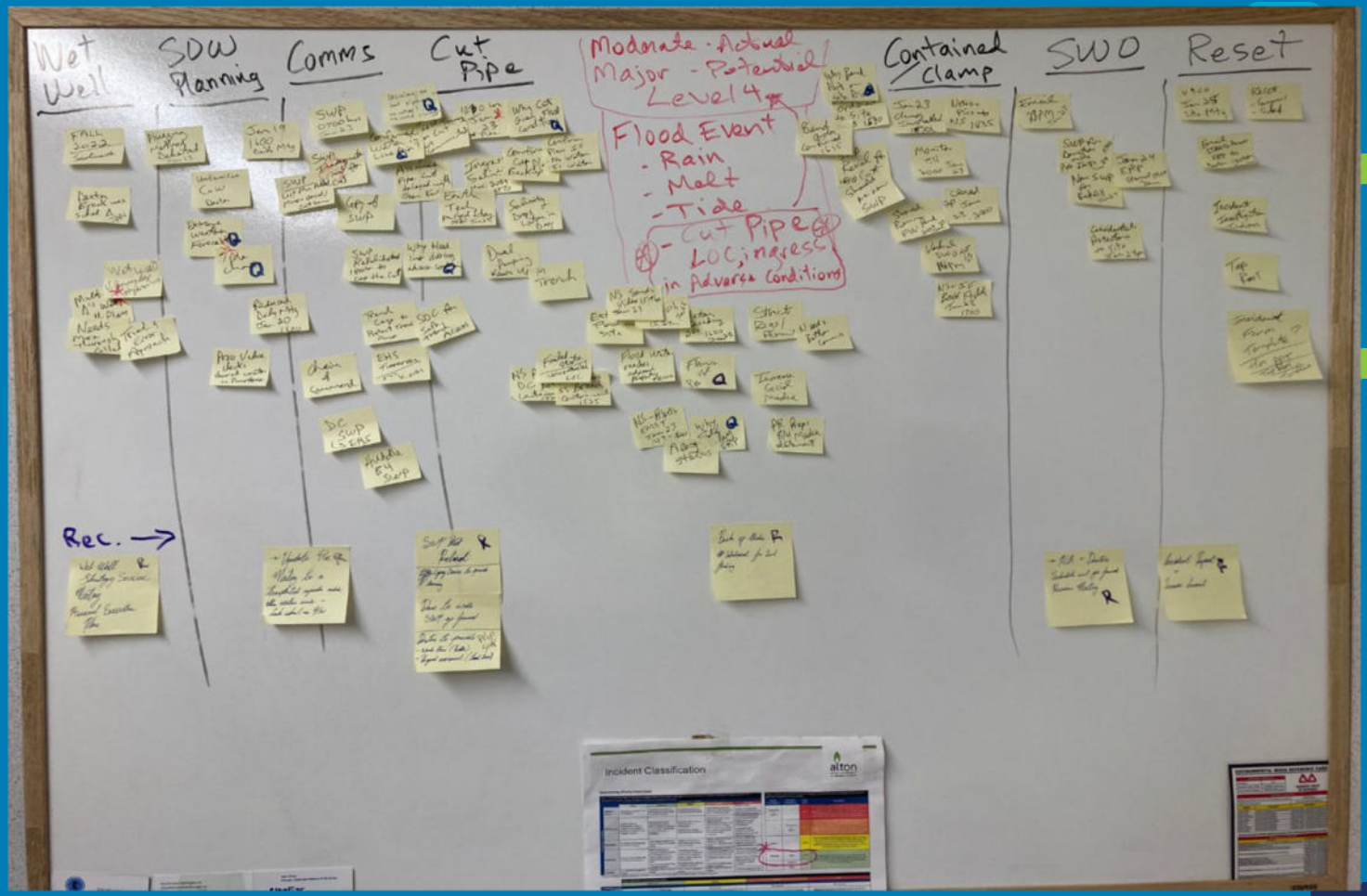




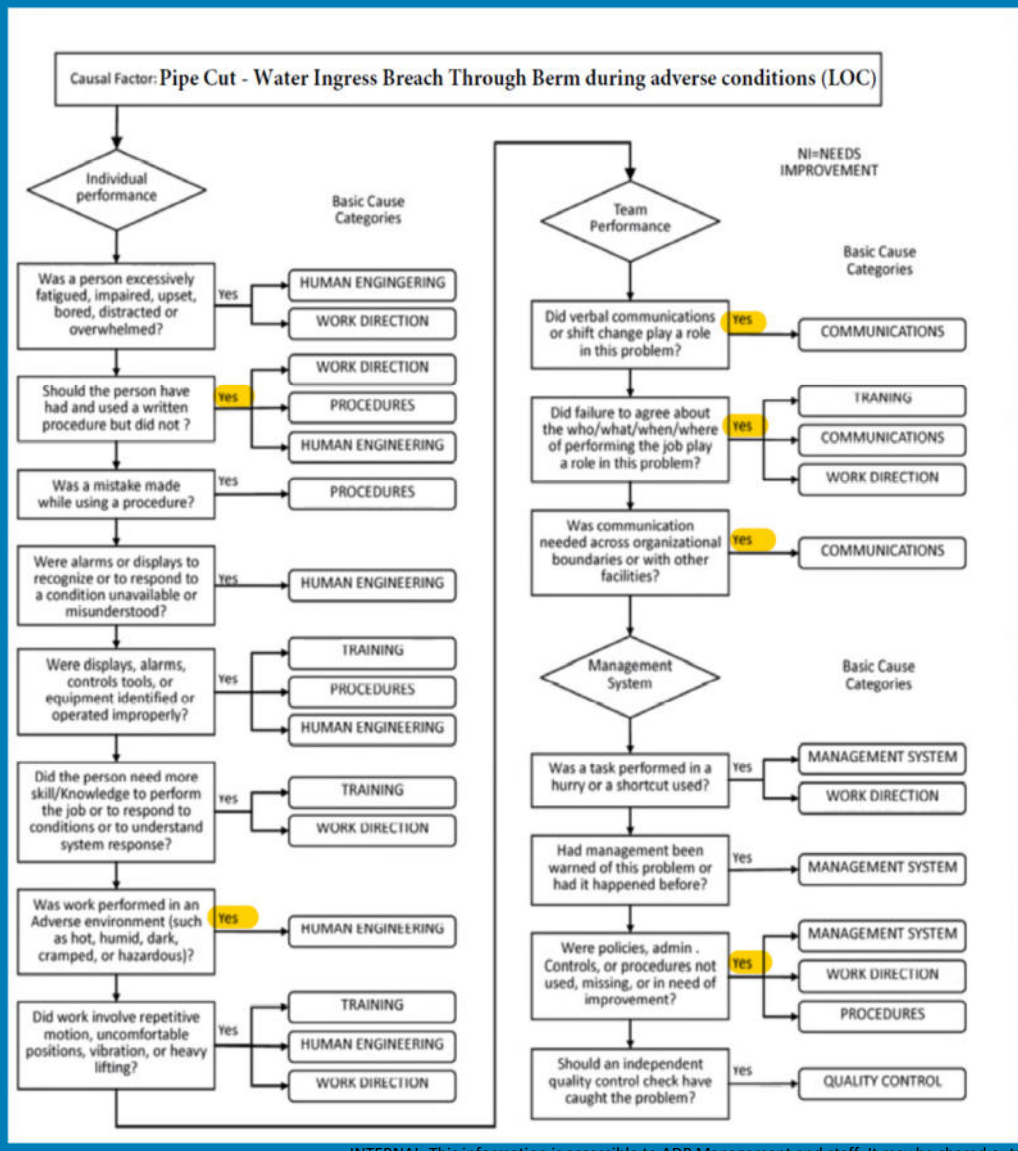
Tap Root

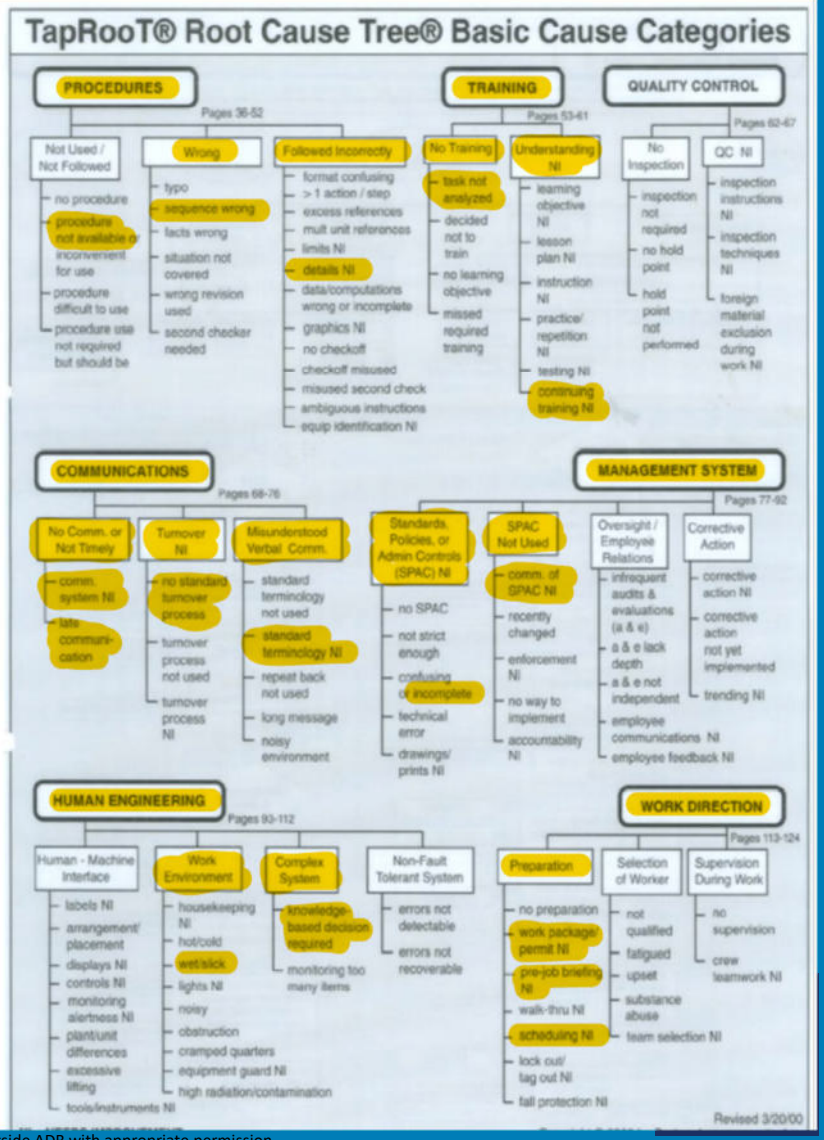
Snap Chart

Time-line



Tap Root example





Summary

- all incidents and near-misses should be reported
- all reported incidents should be investigated
- identifying the root cause of an incident is critical

Sexual Exploitation, Abuse and Harassment (SEAH)

SEAH can occur between workers at a workplace, or between workers and the local community.

HSS WORKSHOP FOCUS:

- ADB - HSS
- Safety Culture
- Hazard Identification
- Life Saving Rules
- Risk Management
- HSS Good Practice Guide
- Safe Work Practices
- Incident Reporting & Investigation
- Emergency Preparedness

Fiji,
10–13 June 2024

ADB

UXO Unexploded Ordnance

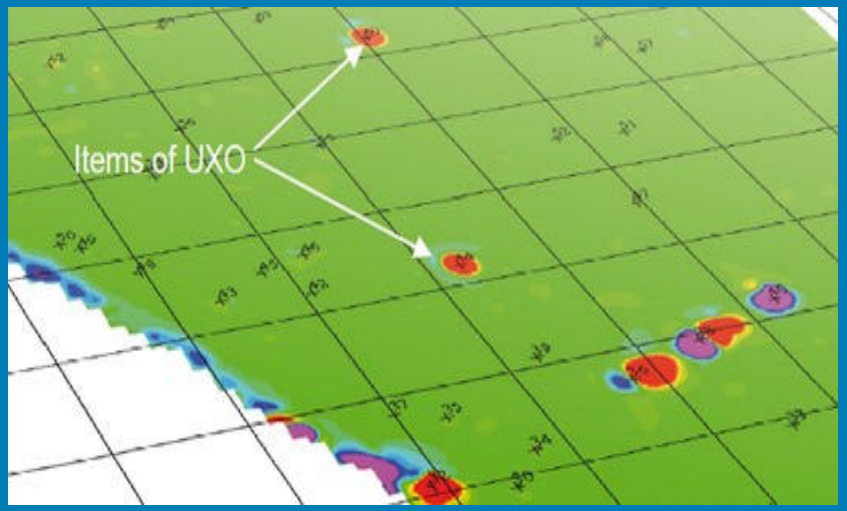
Key Risk Assessment considerations:

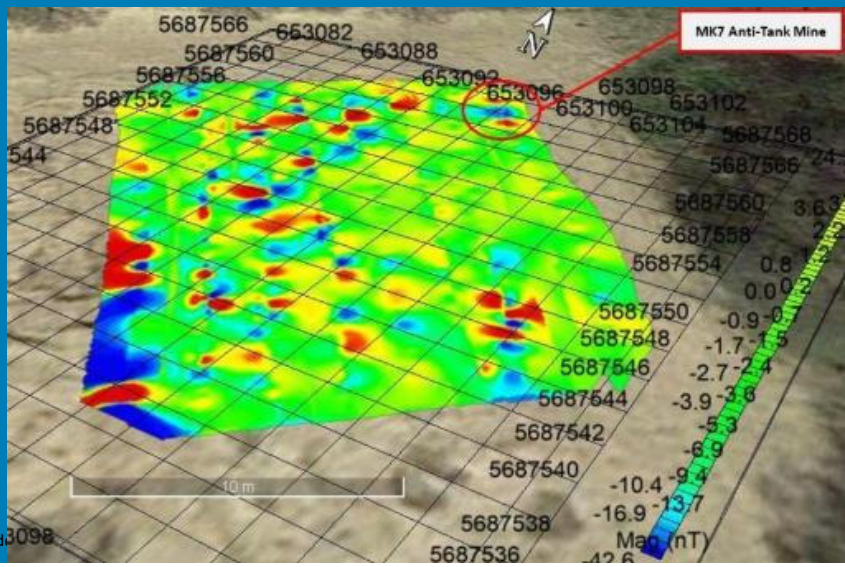
- Known UXO
- Suspected UXO
- Chance UXO Finds
- Blasting Caps Armed vs Unarmed
  - All have high risk

- Survey Technologies
- Mitigation, Removal & Disposal

UXO Survey Methodologies:

- Historical Research
- Ground Penetrating Radar (GPR)
- Electromagnetic Induction (EMI)
- Magnetometers
- Seismic – Acoustic Surveys (various)
- Advanced Imaging (various)
- Chemical Signature Detection
- **Preferred**:
  - Autonomous Vehicle Mounted
  - Multi-sensor Units
  - Multiple Survey Passes





Most Importantly with UXO:

- Careful Planning & Risk Management

		Consequence		
		Slightly Harmful	Harmful	Extremely Harmful
Likelihood	Likely	Medium Risk	High Risk	Extreme Risk
	Unlikely	Low Risk	Medium Risk	High Risk
	Highly Unlikely	Negligible Risk	Low Risk	Medium Risk

MODULE 7

Emergency Preparedness and Response

Understand the best practices involved in emergency management.

Emergency Classification Level 1- Minor

Any unplanned HSS incident that can be managed with **on-site resources**.

Emergency Classification
Level 2 - Severe

Any uncontrolled HSS event that is **contained on-site but requires external assistance** and has the potential to escalate…

Emergency Classification
Level 3 – Major/Extreme

This is an uncontrolled crisis-level event that has **serious effects beyond the site, and requires external resources** typically utilized in a large-scale emergency.

Incident Command System - ICS

Internationally recognized "**ICS**"

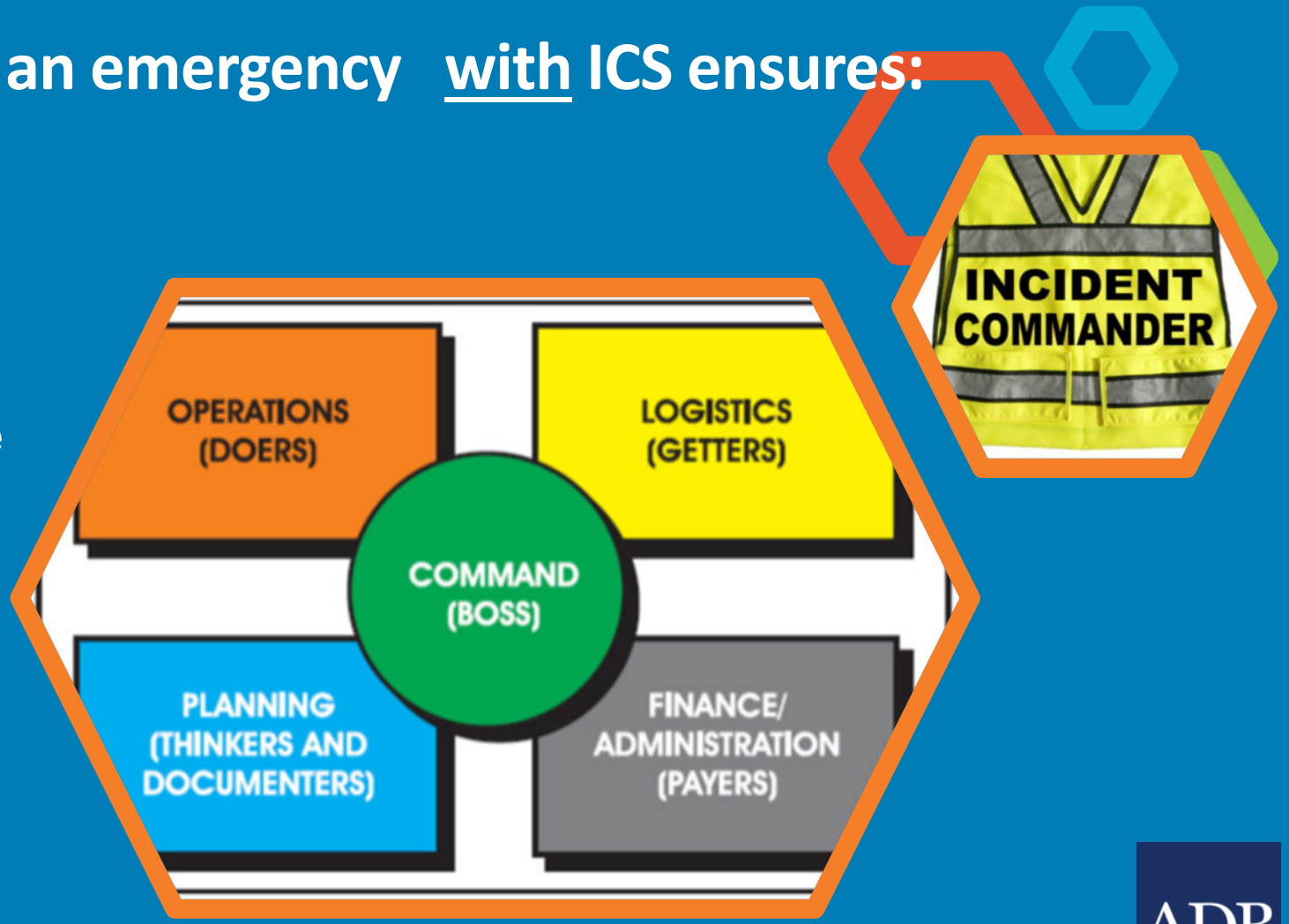
- Standardized roles
- Common terminology
- Scalable up or down…

“Reacting” to an emergency <u>without</u> ICS…

- Lacks accountability
- Has poor communication
- Unsystematic planning
- Unable to efficiently integrate responders
- “Un-even” Playing Field !

"Responding" to an emergency with ICS ensures:

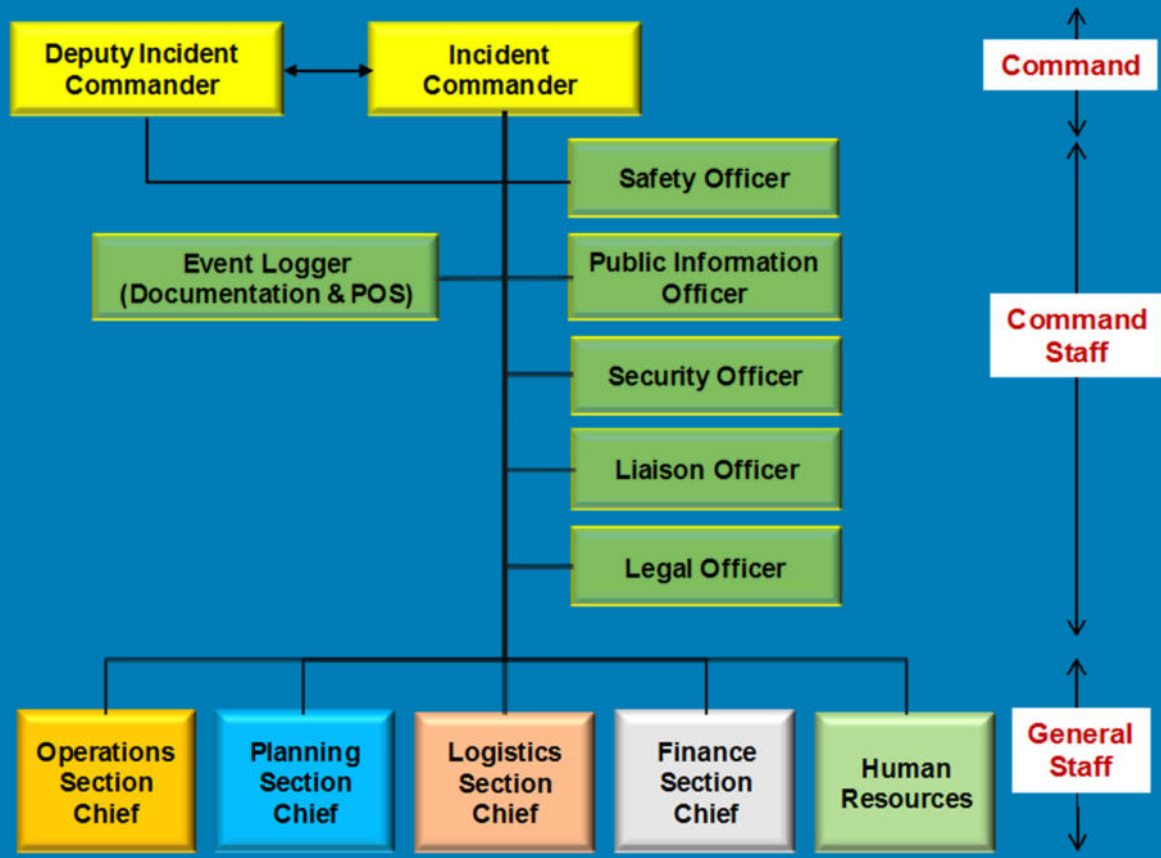
- safety of responders, workers, and the public
- efficient use of resources



ICS core positions …

COMMAND	Overall Responsibility
OPERATIONS	Direct Actions
PLANNING	Prepare Action Plans
LOGISTICS	Support Plans
FINANCE/ADMIN	Accounting & Procurement

ICS is Scalable …



ICS core roles…

Function	Description
Incident Command	• Establishes incident objectives, strategies, and priorities. • Assume overall responsibility for the incident.
Operations	• Determines tactics and resources for achieving objectives. • Directs the tactical response.
Planning	• Collects and analyzes information. • Provides engineering and technical support.
Logistics	• Provides resources and needed services. • Tracks resources.
Finance/ Administration	• Accounts for expenditures, claims, and compensation. • Procures needed resources.
Event Logger	• Collects information including # of persons on scene. • Maintains documentation. • *All personnel shall maintain a log of events.*

Emergency Response Plans

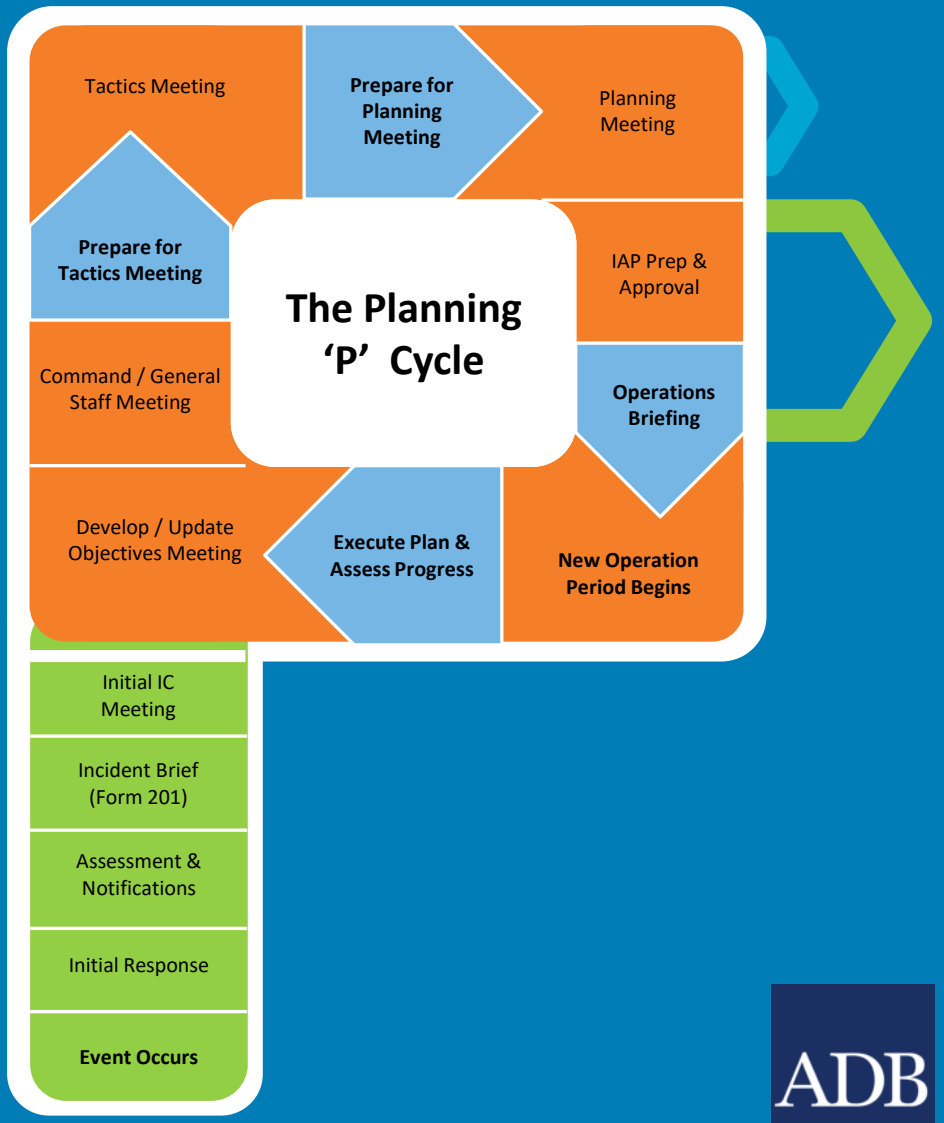
What are the basic elements of an emergency response plan?

Communication and ERP Activation are critical components of the emergency response.

Emergency Response Plans

Ongoing Response

Initial Phase



Exercise

Effective Communication…

Follow your Supervisor’s instructions as best you can !!!

Placemats for Response Personnel

Incident Management Team (IMT)

Emergency Response Placemat

Title / Role	Division / Location
Incident Commander	**Corporate / Head Office (Calgary)**

Reporting	Notifications / Communications
Reports to: • Crisis Management Team Leader **Minimum Direct Reports:** • Operations Section Chief • Planning Section Chief • Logistics Section Chief • Finance & Admin Section Chief **Additional Direct Reports:** • Crisis Advisor • Human Resources Advisor • Legal Advisor • EHS Officer • Liaison Officer • Information Officer	**Internal:** • Emergency Management Support Team (EMST) through the EMST Director • Incident Management Team (mobilize) • Internal response resources • Available off-duty personnel • Others as required **External:** • Mutual aid partners and third-party response contractors • Alberta Energy Regulator (AER) • Health Authority • OH&S/WCB • Ministry of Environment

ICS Form Requirements

- Section 7.1.1 ICS 201 – Incident Briefing (Initial Incident Commander
- Section 7.1.2 ICS 202 – Incident Objectives
- Section 7.1.3 ICS 203 – Organization Assignment List
- Section 7.1.12 ICS 214 – Activity Log

Role Overview

The IMT Incident Commander (IC) is the overall Person-in-Charge of the emergency response for all Level 1, 2 & 3 classified emergencies occurring at any AltaGas sites and facilities.

- Assesses the situation and/or obtain a briefing from the prior Incident Commander
- Determine Incident objectives and strategy
- Establish the immediate priorities
- Establish an Incident Command Post
- Establish ICS organization needed to manage the incident
- Approve and authorize the implementation of an Incident Action Plan
- Coordinate activity for all Command and General Staff
- Coordinate with key people and officials
- Approve requests for additional resources or for the release of resources
- Keep agency administrator informed of incident status
- Order the demobilization of the incident when appropriate
- Authorize information release to the media

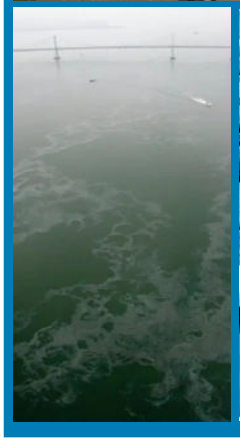
Initial Actions

Confirm the Level of Emergency and Immediate Response Requirements

- Obtain incident briefing from Operations Section Chief or Site Control Room
  - If first point of contact regarding an emergency, try to establish communications with the person who reported the emergency and complete the Section 2.3 Initial Communication With The AER
- If the BST has not been activated and you are the first point of contact for the BST, notify and activate the Operations Section Chief and establish the EOC.
- Confirm the Emergency Level and communicate the Emergency Level to all responders.
- Gather details of the incident/emergency and evaluate the severity of the situation.
- Confirm the size and location of the response zones. Reference:
  - Section 6.4 Emergency Planning Zones,
  - Section 4.1 Isolation And Monitoring, and
  - Section 4.2 Evacuation And Sheltering
- Determine the initial prioritized objectives for response.
  - This will determine how resources are administered. Public safety and the environment must always be the primary concern.

ACTIVITY
Emergency Preparedness Case Study

GROUP EXERCISE - Sample Emergency Operations Center Board

UPDATE	LOCATION Halifax Harbour Bridge	TIME	INCIDENT EVENT LOG
DATE: Simulation **TIME:** 1500 hrs	Sketches:   	1330 1335 1345 1400 1415 1430 1445 1500	• Ops receives call from Security – fuel tanker truck has crashed and exploded on MacDonald Bridge • HHB Security On-scene: Truck had two people onboard – Passenger Critically Injured, Driver MIA • Several other vehicles were damaged, no other injuries being reported, but First Responders having difficulty navigating congested traffic on bridge • Fire Department On-scene – Fire is out but fuel truck is leaking badly and overflowing into the water • Ambulance has injured passenger under care, Truck Driver found deceased. • Call to HHB CEO from Develop Nova Scotia Halifax Waterfront reporting large oil sheen at boardwalk, absorbent boom and pads have been deployed. • HHB Security reports that the truck had impacted the bridge riser structure causing significant damage to the bridge infrastructure. • Facebook Post and Twitter are reporting a terrorist attack is underway on the MacDonald Bridge, MacKay Bridge is the next likely target…

Notifications:	DONE
911	✓
Ambulance	✓
Fire Dept.	✓
HPD, HPA	✓
HHB Mgt & BoD	✓
HRM	✓
Halifax Transit	✓
Waterfront DNS	✓
DFO/CCG/EC	✓
JRCC	✓
Media	TBC

Wind: 15 kts NW

Tide: Ebbing

Forecast: Stable

PERSONS ON SCENE

NUMBER	LOCATION	MISSING
1	Truck	1
2	HHB	0
?	Public	?

RISK ACTION PLANNING

- Emergency Services
- Security & Traffic Control
- Spill Contingency & Notices
- Legal Advice, NoK, Media ?
- Board of Directors Advice

RESOURCES NEEDED

- Medical
- Traffic Control
- Fire Fighting
- Spill Equipment
- Engineering
- Media Liaison

P E A R

ADB

Summary

- incident command systems structure an emergency response
- emergency preparedness protects workers, communities, and the environment
- project risk assessments should include the hierarchy of controls

SayleGroup Inc. THE TRUSTED NAME

Safety Leadership

*"The **lowest** level of safety a **Supervisor** shows … is the **highest** level you can expect from your **workforce**."*

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Thank you!

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Course Assessment