"The Public Interest"

Health/Safety and Environmental Issues

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Public Agency Safety Management Association

August 12, 2025

Special Edition:

HazMapping Challenge

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HazMapping Challenge- G'day Fellow travelers and welcome to the first Special Edition of our Newsletter. This Edition is an attempt to get our membership to understand the benefits of implementing NIOSH's HazMapping process.

HazMapping is a state of art concept in Hazard recognition, Evaluation and Control and when incorporated into your IIPP will advance the quality of that program. This simple concept, when fully adopted and internalized by your line managers and their employees, should create functional "ownership" of their working spaces and activities. When performed and maintained in their routine, it should remove one of the most critical accident variables commonly associated with accident causation, space utilization and traffic control. In other words, "housekeeping". Hazard mapping is an activity that will identify hazard categories, their locations, conditions and, most importantly will assign a hazard rating based on the proximity to each other. Interestingly, the tools to complete this initial as well as periodic "mapping" is a list of known "hazard categories", a simple measuring device and critical observations. In short, it will document the overall safety conditions of this space initially and provide opportunities to immediately correct all hazards. Once this fist inspection has been completed, it will now serve as a "baseline" of what a SAFE PLACE should look like for subsequent inspections and meet the requirements of 3203(a)(4) and (a)(6)

Attached to this cover page are instructions which I hope will guide you through the activity. The pdf has been converted from a ppt that I use in my OSHA Institute classes, so it can be converted and edited to suit your individual needs. I do hope you will at least isolate a working space and perform this exercise. Keep in mind that the object is to be as "global" in your observations and triage multiple hazards in ANY ZONE OF DANGER relative to their individual interactions and proximities. **Case in point** – water sources however contained vs. proximity to a compromised wired electrical energy source will increase the need to control the hazards. Particularly if the vessels, piping and/or couplings shows signs of compromise and a plumber is within the zone of danger; e.g. working within the area in near proximity to both categories. The **overall risk is now higher** than the individual values of either one. Having "triaged" and documented this space, you now have data to initiate corrective measures based on the severity of the outcome should these incompatible hazards collide. Good Luck and let me know what you think by reaching out via my email.

A Guide to HazMapping

Dick Monod de Froideville, MPA

Occupational Hazard Categories –
Review **6 Primary Categories**

Some or all can/will co-exist

Things To Know Before You Start!!

- Know the Occupational Hazard Categories

  6 Primary Categories

  Some or all can/will co-exist

- Know what Activities/Duties done in that job title: Job descriptions/Empl. Interviews
- Check Historical Injury data for that activity
- Hazard Defined: ANYTHING that has the potential to do HARM either singularly or in combination of...
- Equipment Needed – Measuring tape or device/Camera
- Critical Observation – Graph paper/Drawing Program

HazMapping Process

Occupational Safety & Health Mission Flow Chart

See It, Triage It, Fix It

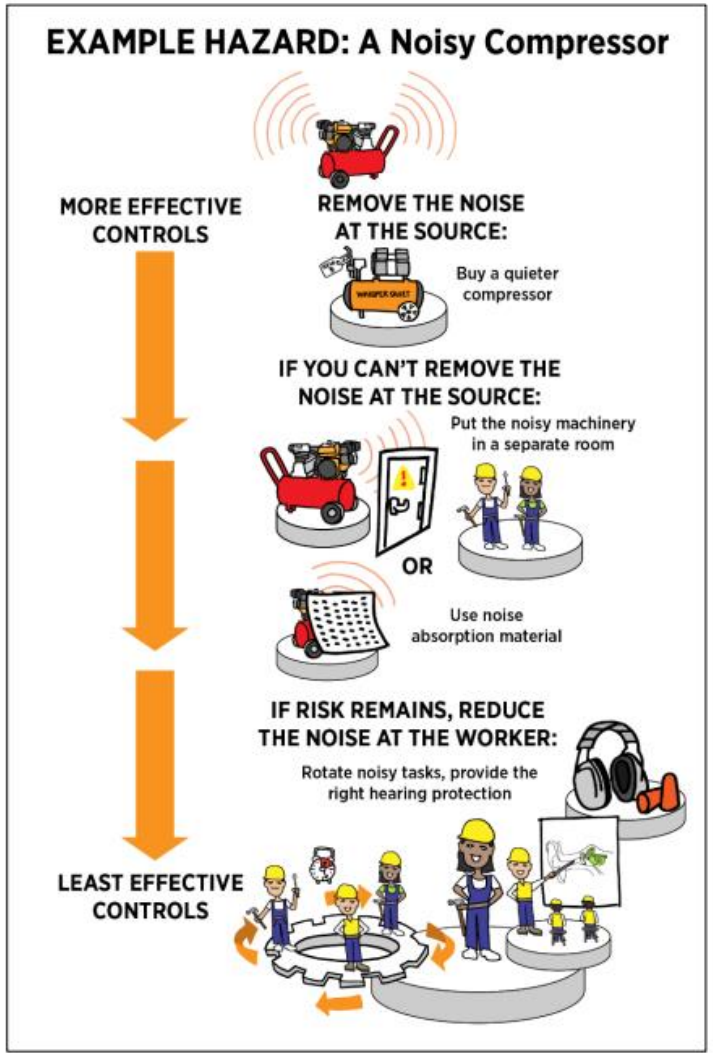
Hazard Correction Work Order Matrix

Probability \ Hazard	Slight 1	Non Serious 2	Serious 3	Imminent Danger 4
Possible But Remote 1	1	2	3	4
Reasonable But Unlikely 2	2	4	6	8
Occasional 3	3	6	9	12
Probable 4	4	8	12	16
Frequent 5	5	10	15	20

Mishap Probability
1. Unlikely but possible
2. Occurs once in 3years
3. Occurs at least once per year
4. Occurs several times per year
5. Occurs any time

Hazard
1. Slight - No Injury or Equipment damage
2. Non-Serious - Controllable by operator or procedure
3. Serious - Causes injury or equipment damage
4. Imminent - Death; severe injury or major damage

Wrk Ord	Period for Correction
1.	Immediate (ASAP)
2.	Correction W/In 14 Days
3.	Correction W/In 30 Days
4.	Correction as resources become available



Physical Hazards - Examples

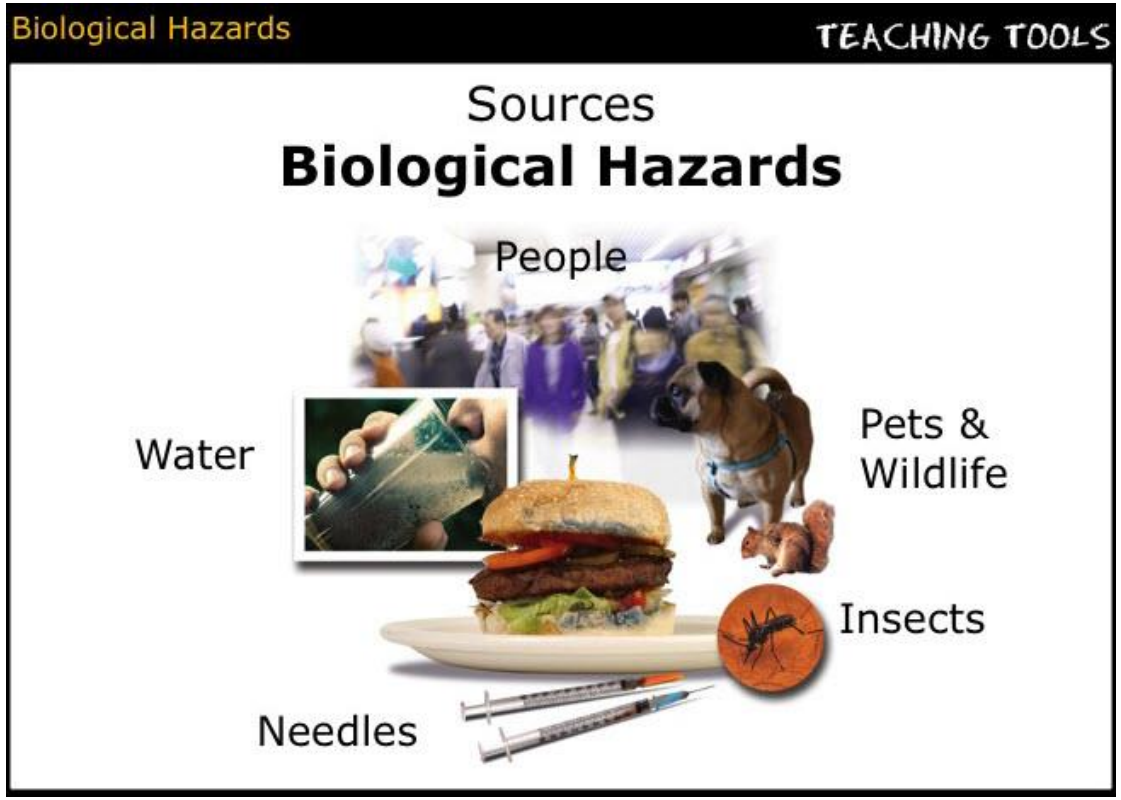
- **Noise**
- **Temperature Extremes**
- **Radiation**
  - **UV**
  - **Gamma, Beta & X-ray radiation.**
  - **Ultraviolet radiation.**
  - **Visible radiation.**
  - **Infrared radiation.**
  - **Microwave radiation.**
  - **Radio waves.**

Chemical Hazards - Examples

- Solids
- Liquids
- Gases
  - Dusts
  - Fumes
  - Mist
  - Vapors

Biological Hazards - Examples

- **Mold, Spores and Fungi.**
- **Blood and Body Fluids.**
- **Sewage.**
- **Airborne pathogens, i.e. Colds**
- **Stinging insects.**
- **Harmful plants.**
- **Animal and Bird Droppings**
  - **And of course….**
- **HUMANS**

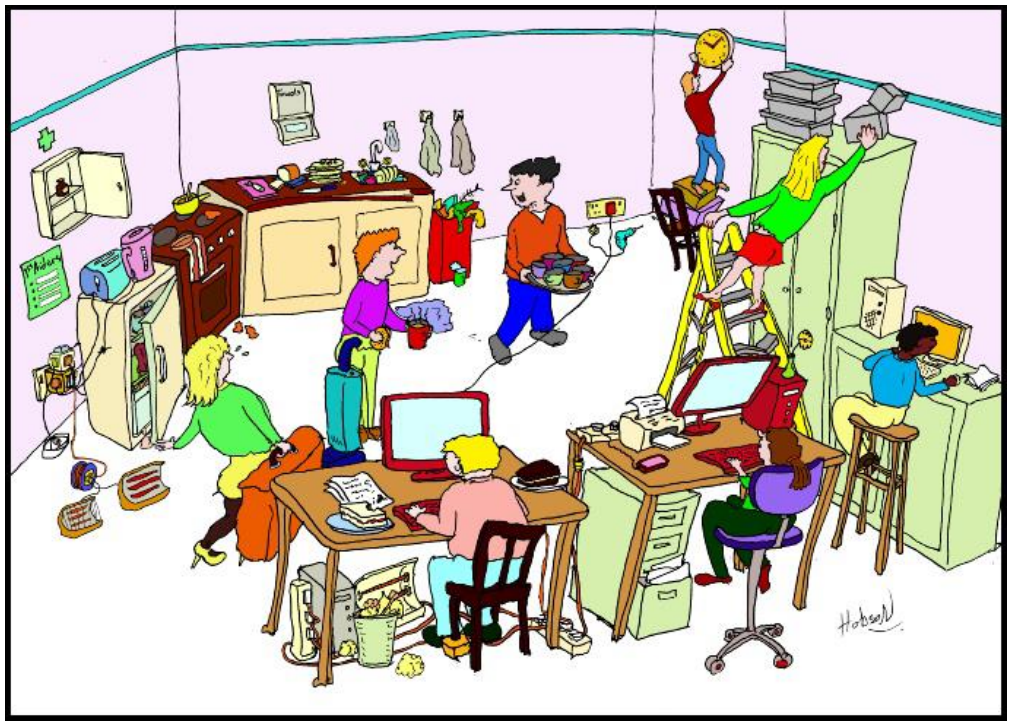


Ergonomic Hazards - Examples

- **Repetition**
- **Lifting**
- **Posture**
  - **Bending**
  - **Stooping**
  - **Squatting**
  - **Twisting**

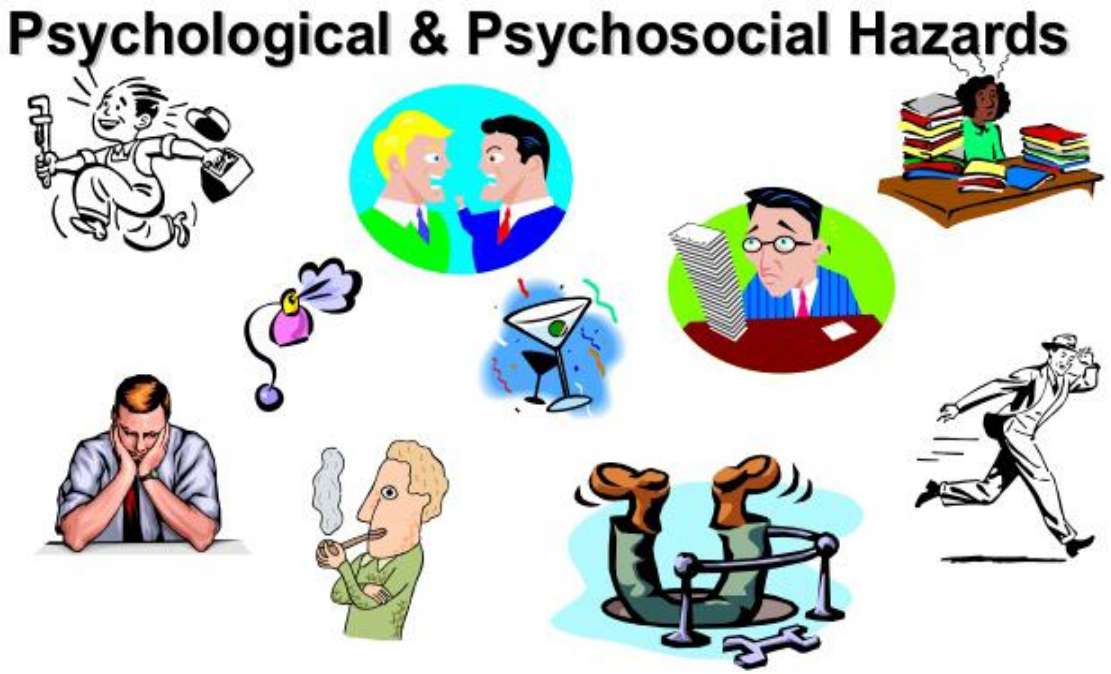
Safety Hazards - Examples

- **Slips**
- **Trips**
- **Falls**
- **Faulty Equipment**
- **Unsafe/Unstable Loads**
- **Congestion**



Organizational/Psyco-Social Hazards - Examples

- **Stress inducing situation/conditions**
  - **Schedules**
  - **Staffing**
  - **Home/Family**
  - **Deadlines**



Individual Code Legend Colors – Your Choice

Triaging Hazard Ratings are Aggregate and Dependent On Proximity Of Individual Hazard Categories, Quantities Etc. to Each Other

HAZARD CODE KEY		
	Blue	**Electrical** Hazards
	Green	**Chemical** Hazards
	Orange	**Physical** Hazards (heat, noise, air quality, slippery floors, poor lighting, poorly designed work stations, etc.)
	Brown	**Flammable/Explosive** Hazards
	Black	Other Hazards (specify)

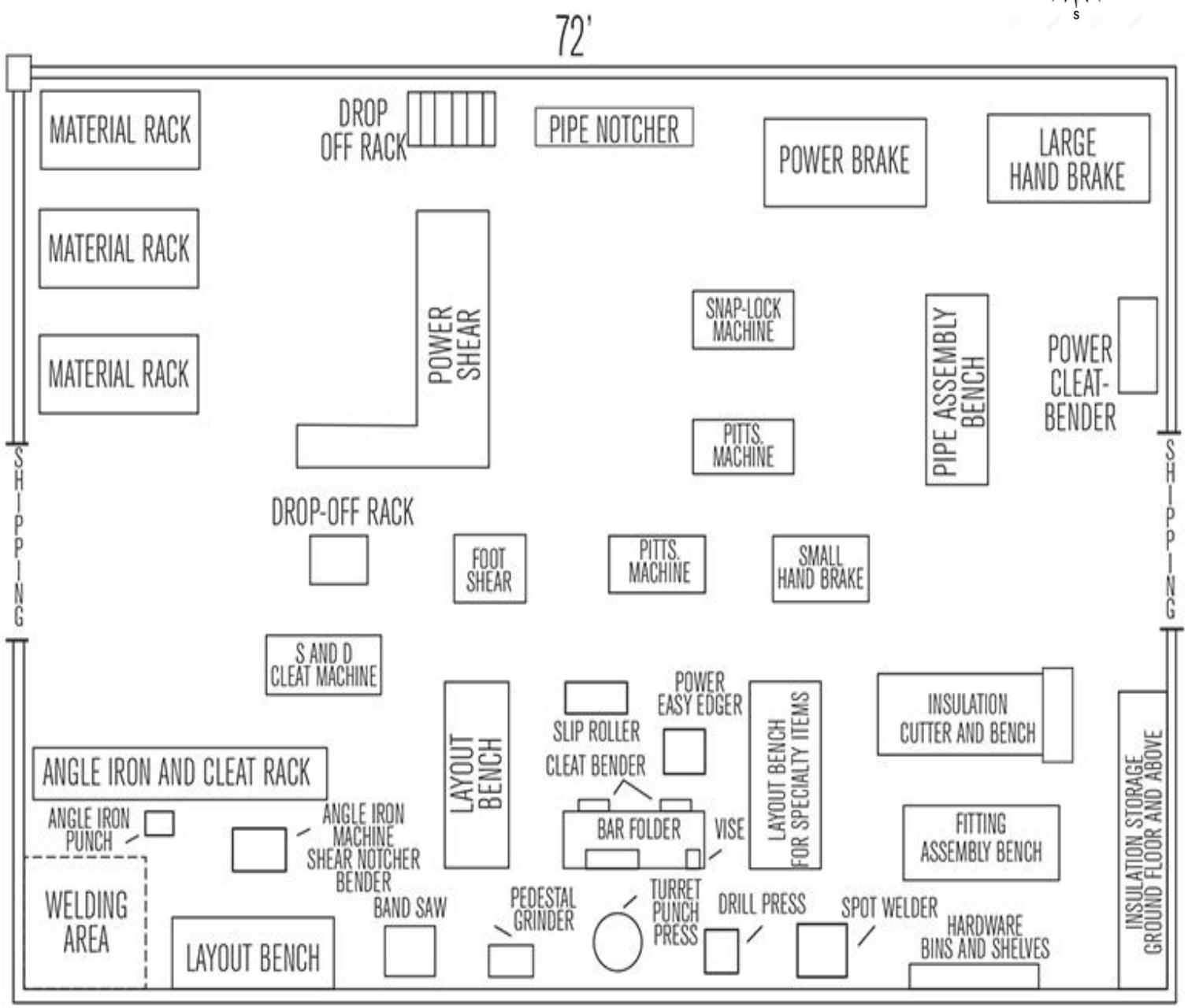
LEVEL OF HAZARD	
1	Low Hazard
2	Medium Hazard
3	High Hazard
4	Very High Hazard

Combined Coding - Example

HAZARD CODES AND LEVELS OF HAZARDS	
	A number "2" inside a Blue Circle indicates "Class 2, Medium Hazard, Electrical."
	A number "3" inside a Green Circle indicates "Class 3, High Hazard, Chemical."
	A number "1" inside an Orange Circle Indicates "Class 1, Low Hazard, Physical."
	A number "4" inside a Brown Circle indicates "Class 4, Very High Hazard, Flammable/ Explosive."
	A number "2" inside a Black Circle indicates "Class 2, Medium Hazard, Other Hazard."

Auditor/Inspector: Date:

Bldg: Room: Location:



Activity – Hazmapping

First create a real time schematic of the "activity" or working space (shop). Plot non-movable fixtures (desks, benches, racks, cabinets etc.), machinery and/or equipment. Identify entry/exits and aisles and/or travel paths. ID and plot any and all hazard categories that are found. Then measure the distances between each hazard category. Note the condition of the entire space and triage the hazards in accordance with the legends on the second page.

	Blue	**Electrical Hazards**
	Green	Chemical Hazards
	Orange	Physical Hazards (temperature, noise, air quality, slips/trips/falls, lighting, ergo, radiation etc.)
	Brown	Flammable
	Black	Other

This is a sample matrix identifying a hazard category and its associated color identity.

Hazard Rating	Legend
1	Low Hazard
2	Medium Hazard
3	High Hazard
4	Very High Hazard

This is a listing of the hazards category rating. The severity is the numbered as listed. Example a closed electrical panel w/o proximity to a flammable storage container could be a 1. That same electrical panel having exposed connectors or conductors near an open flammable storage container indoors within 5-10 feet could now become a 3 or 4.

Key	Hazard	Controls
3	Electric Panel near 5Gal open solvent containers	T8CCR2540.2(b)

This is a sample “legend” that is expected to be populated throughout the haz-mapping activity. It’s designed to enter any observed hazards and the distances to each other. The closer they are to each other the greater the potential resulting hazard. Plot the colored circle(s) and their ratings for every hazard. List the hazard and identify the controlling safety order. Keep your Hierarchy of Control in mind.

Conducting, Triaging and Documenting Inspections Are Required By Code...So Is Timely Correction!

T8CCR3203

OSHA General Duty Clause 5(a)