# 1. Risk Assessment for: heat stress prevention

|  |  |  |  |
| --- | --- | --- | --- |
| **WORK LOCATION:**  | Various throughout the City of Kelowna | **DESCRIPTION OF WORK:** | Working outdoors (light to very heavy intensity work) during heat wave conditions (high temperature, direct sunlight) |
| **COMPLETED BY**:  | OH&S Branch | **ASSESSMENT DATE:** | June 24, 2021 | **RANKING:** | **Medium** |

**2. WORK ACTIVITIES: (Include PPE Requirements for Quick Reference)**

|  |
| --- |
| **List Task Activity:** Performing work during heat wave. This applies primarily to outdoor work, however there is risk of heat stress in certain indoor locations as well. |
| **PPE Required:** Task specific PPE |
| **Tools and Equipment:** Task specific tools and equipment |

**3. HAZARDS & RISK LEVEL RATINGS: SCORE = C + P + E = Rate (**3-4 are L**OW) (**5-6-7 are **MEDIUM)** (8-9 are **HIGH)** priority

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **HAZARD #** | **HAZARD IDENTIFICATION** | **CONSEQUENCES** | **PROBABILITY** | **EXPOSURE** | **RISK** | **RATING****L/M/H** |
|  | Heat stress related disorder (heat cramps, heat exhaustion or heat stroke) due to exposure to high temperature and humidity while performing work. Effects of heat and humidity exposure vary based on the intensity of the work, individual conditioning/body’s response to heat (ex. age, health, medical conditions, obesity, clothing, level of hydration etc.) | 3 | 2 | 1 | 6 | M |
| **RISK TOTAL:** | **3** | **2** | **1** | **6** | **M** |

 **Add up the individual columns: (Consequence, Probability, Exposure, Risk and divide by number of Hazards)**

**4. MATRIX FOR RANKING THE HAZARDS:**

|  |  |  |  |
| --- | --- | --- | --- |
| **SCORE** | **1** | **2** | **3** |
| **CONSEQUENCES:** |  first aid / minor damage |  lost time injury/moderate damage |  fatality / major damage |
| **PROBABILITY:** |  unlikely |  possible |  likely |
| **EXPOSURE:** |  rarely (less than 1/month) |  often (3 times/week) |  everyday |

**5. CONTROL MEASURES FOR EACH HAZARD IDENTIFIED IN SECTION 3**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **HAZARD #** | **LIST ALL EXISTING CONTROL MEASURES****(Eliminate, Substitute, Engineering, Administrative, PPE)** | **RECOMMENDATIONS** | **Date required** | **Person Responsible** | **Initial when complete** |
|  | **Elimination / substitution controls**Postpone strenuous outdoor work or complete it first thing in the morning (before hottest time of day)**Engineering controls**For indoor workplaces at risk of hot temperatures – consider whether HVAC can be improved; installation of shields or barriers to protect persons from heat; insulate or cover hot surfaces to reduce radiant heat**Administrative controls**Stay hydrated, adjust work / rest cycle, be familiar with signs of heat stress, watch out for each other, post warning signs / circulate safety alerts to department (discuss heat stress at crew meetings / tailgate meetings/ FLRA), take breaks in shade or indoors**PPE controls**Wear clothing and PPE appropriate for the hot conditions (ex. light, breathable, organic fabrics), sunglasses, wear a hat | Safety to collect readings using WBGT device to determine suitable work/rest cycles for different types of work.  | As available | OHS Branch |  |

**6. HIERARCHY OF CONTROL MEASURES:(Must be followed in the order below)**

|  |  |  |
| --- | --- | --- |
| **ORDER** |  **CONTROL** | **DESCRIPTION**  |
| **1** |  **ELIMINATION:** | Can the hazard be removed at the source? Can the task be eliminated entirely? Example: eliminating the need to have a worker enter an excavation by hydro-excavating to expose underground infrastructure. |
| **2** |  **SUBSTITUTION:** | Can a hazard, hazardous process or hazardous material be substituted with one with no hazards? Example: using salt water brine instead of a chemical for deicing the roads. |
| **3** |  **ENGINEERING:** | Engineering controls include isolation, ventilation and equipment modification. These controls focus on the source of the hazard. Example: a guard placed around a saw blade, or a shoring system placed in an excavation. |
| **4** |  **ADMINISTRATIVE:** | Remove or reduce the exposures by reducing the duration, frequency and severity of exposure to hazards. Example: changes to work procedures & practices, scheduling, job rotation, breaks during heat/cold exposure. |
| **5** |  **PPE:** | Personal Protective Equipment does not control the hazard but reduces the effect of exposure to the hazard has on the worker. PPE must always be the last line of defense Example: earplugs, latex gloves, CSA boots, CSA Hard Hats  |

# 7. Document approval:

|  |  |  |  |
| --- | --- | --- | --- |
| **EFFECTIVE DATE** | **REVISION DATE** | **AUTHORIZED BY** | **APPROVED BY** |
| June 24, 2021 |  | Occupational Health & Safety Branch  | Sarah Josefson, CRSP  |
|  |  |  |  |

**THE HAZARD IDENTIFICATION AND ASSESSMENT PROCESS**

1. Identify the task to be assessed, determine if the task is **H**igh, **M**edium or **L**ow risk
2. Include workers who have experience in performing the task, ensure the process is led by someone who has training and experience in

conducting hazard assessments. These individuals must have some type of formal training.

1. Identify hazards associated with the tasks. Consider PHYSICAL, CHEMICAL, BIOLOGICAL, AND PSYCHOLOGICAL
2. Rate the hazards by degree of risk using the following matrix:

|  |  |  |  |
| --- | --- | --- | --- |
|  **SCORE** |  **1** |  **2** |  **3** |
| **CONSEQUENCES:** | first aid / minor damage | lost time injury/moderate damage | fatality / major damage |
| **PROBABILITY:** | unlikely | possible | likely |
| **EXPOSURE:** | rarely (less than 1/month) | often ( 3 times/week) | everyday |

**TOTAL** the three columns: **(T)**

* 3-4 are **low** priority hazards
* 5-7 are **medium** priority hazards
* 8-9 are **high** priority hazards

The **high** priority hazards are addressed first, followed by the **medium** priority hazards. **Low** priority hazards may not require attention at this time, they may simply require monitoring. The Hierarchy of Control Measures must be followed when eliminating or mitigating hazards in the following order:

|  |  |  |
| --- | --- | --- |
| **1** |  **ELIMINATION:** | Can the hazard be removed at the source? Can the task be eliminated entirely? Example: eliminating the need to have a worker enter an excavation by hydro-excavating to expose underground infrastructure. |
| **2** |  **SUBSTITUTION:** | Can a hazard, hazardous process or hazardous material be substituted with one with no hazards? Example: using salt water brine instead of a chemical for deicing the roads. |
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 Hazard Assessments **must be reviewed** in accordance with Hazard Assessment Program Guide.