

Risk Response Plan Template

Project Name: Bush works Trench Excavation Project
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Date: 22/05/2024
Description of Risk Identified: Severe weather conditions have occurred
Person(s) Responsible: Site Foreman / All individual workers / WH&S Officer
Results from Risk Analysis: Identification of Hazards: The risk analysis identified several hazards associated with severe weather occurring during trench excavation for plumbing works. These hazards include heavy rainfall leading to soil erosion and trench collapse, lightning strikes posing a risk to personnel safety, high winds causing instability of trench walls, and extreme temperatures affecting worker comfort and equipment performance. Assessment of Risks: Each identified hazard was assessed in terms of its likelihood and potential impact. Risks were categorised based on their severity, ranging from low to high, with a focus on those with the highest likelihood and potential impact. Risk Severity Analysis: The risk severity analysis revealed that severe weather events pose significant risks to the safety of personnel, the integrity of trench structures, and the progress of the plumbing works. Trench collapses and lightning strikes were identified as high severity risks due to their potential for causing injuries or fatalities. Risk Mitigation Strategies: Based on the assessment of risks, specific risk mitigation strategies were developed to minimise the impact of severe weather on trench excavation activities. These strategies include: • implementing weather monitoring systems to track approaching storms. • Establishing protocols for suspending excavation activities during severe weather events. • Providing workers with appropriate PPE for adverse weather conditions. • Securing equipment and materials to prevent damage from high winds or flooding. • Designing trenches with proper drainage systems to minimise the risk of collapse. Contingency Plan: Contingency plans were developed to address potential disruptions caused by severe weather. These plans include procedures for safely evacuating workers from the excavation site, protecting equipment and materials, and resuming work once weather conditions improve. Communication and Training: Effective communication protocols and training initiatives were identified to ensure that all personnel are aware of severe weather risks and know how to respond appropriately. This includes providing training on emergency procedures, conducting drills, and maintaining clear lines of communication with weather monitoring authorities.
Agreed Responses (avoidance, transference, mitigation, acceptance):
Response #1 Avoidance: Immediate actions to avoid further risks: 1. Halt Operations:

- **Assessment:** Immediately assess the severity of the weather event and its impact on the current excavation site.
- **Avoidance Actions:** Cease all excavation activities immediately to prevent accidents and damage.
- **Documentation:** Record the decision to halt operations, including the time and weather conditions.

2. Secure the Site:

- **Assessment:** Evaluate the trench and surrounding areas for vulnerabilities, such as potential collapses or flooding.
- **Avoidance Action:** Implement emergency measures to secure the site, such as covering the trench with tarps, reinforcing trench walls, and ensuring that all equipment is safely stored or secured.
- **Documentation:** Document all actions taken to secure the site, including photographs and descriptions of measures implemented.

3. Evacuate Personnel:

- **Assessment:** Determine if conditions are safe for personnel to remain on-site.
- **Avoidance Action:** If necessary, evacuate all personnel to a designated safe area until the severe weather has passed.
- **Documentation:** Keep records of the evacuation, including a roster of personnel and the time of evacuation.

Response #2

Transference:

Shifting risks to third parties:

1. Notify Insurance providers:

- **Assessment:** Assess any potential damages or losses that may be covered by insurance policies.
- **Transference Action:** Notify insurance providers of the severe weather event and file claims for any damages incurred.
- **Documentation:** Maintain detailed records of all communications with insurance providers, including claim forms and correspondence.

2. Engage Emergency Services:

- **Assessment:** Determine if there is a need for external emergency services (e.g., fire department, rescue teams) to assist with any immediate threats.
- **Transference Action:** Contact appropriate emergency services to provide assistance as needed.
- **Documentation:** Record all interactions with emergency services, including names, times, and actions taken.

3. Contract Specialist Services:

- **Assessment:** Identify any areas where specialist contractors can mitigate immediate risks or repair damage.
- **Transference Action:** Hire licensed and insured contractors to address specific issues such as drainage, structural reinforcement, or site cleanup.
- **Documentation:** Ensure contracts clearly outline the scope of work and responsibilities and keep records of all contractual agreements and work performed.

Response #3

Mitigation:

Reducing the impact of severe weather:

1. Assess damage:

- **Assessment:** Conduct a thorough inspection of the site to assess the extent of the damage caused by the severe weather.
- **Mitigation Action:** Document all findings, including areas of erosion, water accumulation, or structural damage to the trench and surrounding environment.
- **Documentation:** Use detailed inspection reports, photographs, and video recordings.

2. Implement erosion control measures:

- **Assessment:** Identify areas prone to erosion due to heavy rain or flooding.
- **Mitigation Action:** Install erosion control measures such as silt fences, sandbags, and diversion channels to manage water flow and prevent further erosion.
- **Documentation:** Record the installation and maintenance of these measures, including their locations and effectiveness.

3. Reinforce Trench Stability:

- **Assessment:** Determine the stability of the trench walls and identify areas at risk of collapse.
- **Mitigation Action:** Use additional shoring and bracing to reinforce trench walls. If necessary, redesign the trench to include stepped or benched sides to enhance stability.
- **Documentation:** Document all reinforcement actions, including materials used and structural assessments.

4. Restore Site conditions:

- **Assessment:** Evaluate the site for any remaining hazards or disruptions caused by the severe weather.
- **Mitigation Action:** Perform necessary restoration work, such as pumping out water, repairing damaged infrastructure, and restoring access roads.
- **Documentation:** Keep detailed records of all restoration activities and materials used.

Implementation and Monitoring:

Regular Reviews: Conduct regular reviews of the site and the risk response plan to ensure ongoing effectiveness and make adjustments as needed.

Communication: Maintain clear and continuous communication with all team members, contractors, and stakeholders regarding the status of the site and any changes to the plan.

Documentation: Ensure all actions taken, decisions made, and communications are thoroughly documented for accountability and future reference.

Residual Risk Level:

1. Unexpected severe weather occurrence:

- **Likelihood:** Medium
- **Impact:** High
- **Description:** Even with robust weather monitoring and planning, another severe weather event could occur unexpectedly.
- **Management Strategy:** Maintain continuous weather monitoring and have an emergency response plan in place. Flexibly adjust the work schedule based on updated weather forecasts.

2. Minor Erosion and Soil Stability Issues:

- **Likelihood:** Medium
- **Impact:** Medium
- **Description:** Despite erosion control measures, some level of erosion may still occur, potentially affecting trench stability.
- **Management Strategy:** Conduct frequent site inspections, particularly after heavy rains, and reinforce erosion control measures as needed. Use additional shoring or bracing to stabilise trench walls.

3. Water accumulation in the trench:

- **Likelihood:** Medium
- **Impact:** Medium
- **Description:** Heavy rainfall may lead to water accumulating in the trench, even with diversion channels in place.
- **Management Strategy:** Have pumps and drainage solutions ready to remove water quickly from the trench. Regularly check and maintain diversion channels to ensure they are functioning properly.

4. Delayed project timeline:

- **Likelihood:** Medium
- **Impact:** High
- **Description:** Severe weather can cause delays in the excavation schedule, impacting the overall project timeline.
- **Management Strategy:** Develop a flexible project schedule with built-in contingencies for weather-related delays. Communicate any delays to stakeholders promptly and adjust project plans accordingly.

5. Equipment malfunction or damage:

- **Likelihood:** Low to Medium
- **Impact:** High
- **Description:** Heavy rain and harsh conditions can cause equipment malfunction or damage, despite regular maintenance
- **Management Strategy:** Perform thorough inspections and maintenance of equipment after severe weather. Keep spare parts and backup equipment on hand to minimise downtime.

6. Access issue due to muddy or flooded conditions:

- **Likelihood:** Medium
- **Impact:** Medium
- **Description:** Muddy or flooded access routes can impede movement of personnel and equipment.
- **Management Strategy:** Stabilise access routes using mats, gravel, or other suitable materials. Plan alternative routes if primary access becomes unusable.

7. Health and safety risks to workers:

- **Likelihood:** Medium
- **Impact:** High
- **Description:** Wet and slippery conditions increase the risk of accidents and injuries on site.
- **Management Strategy:** Ensure all workers are equipped with appropriate personal protective equipment (PPE) and trained on safety protocols for working in wet conditions. Conduct regular safety briefings and inspections.

8. Environmental Impact and regulatory compliance:

- **Likelihood:** Low to Medium
- **Impact:** Medium
- **Description:** Severe weather can cause unforeseen environmental impacts, such as sediment runoff into nearby water bodies, potentially leading to regulatory issues.

- **Management Strategy:** Implement robust environmental protection measures and monitor their effectiveness. Maintain compliance with all regulatory requirements and be prepared for inspections or audits.

Action Steps:

1. Continuous Weather monitoring:

- **Action Step:** Set up real-time weather monitoring systems using reliable weather forecasting tools and services.
- **Responsibility:** Assign a dedicated team member to monitor weather updates and alerts.
- **Frequency:** Monitor continuously, with checks at least twice daily during critical phases.
- **Documentation:** Log daily weather reports and any alerts received.

2. Regular site inspections:

- **Action Step:** Conduct thorough site inspections, focusing on trench stability, erosion control measures, and water accumulation.
- **Responsibility:** Site supervisor or designated safety officer.
- **Frequency:** Perform inspections after each severe weather event and at regular intervals during normal conditions.
- **Documentation:** Use inspection checklists and photographic evidence to record findings and actions taken.

3. Emergency preparedness and response plan:

- **Action Step:** Develop and train all personnel on an emergency response plan, including evacuation procedures, securing the site, and emergency contacts.
- **Responsibility:** Project manager and safety officer.
- **Frequency:** Train initially and conduct refresher training every three months or as needed.
- **Documentation:** Maintain training logs, emergency contact lists, and copies of the emergency response plan.

4. Erosion control measures:

- **Action Step:** Implement and maintain erosion control measures such as silt fences, sandbags, and riprap.
- **Responsibility:** Site supervisor and construction team.
- **Frequency:** Install before starting excavation and inspect/maintain weekly or after severe weather events.
- **Documentation:** Document installation locations and conditions, with before-and-after photos of maintenance activities.

5. Drainage Solutions for water accumulation:

- **Action Step:** Ensure pumps and other drainage solutions are readily available and operational to remove water from the trench.
- **Responsibility:** Site supervisor and designated equipment operator.
- **Frequency:** Check equipment daily and use as needed after rainfall.
- **Documentation:** Maintain logs of drainage activities, including pump usage and water levels.

6. Flexible Scheduling:

- **Action Step:** Develop a flexible project schedule with contingencies for weather-related delays.
- **Responsibility:** Project manager and scheduling coordinator.
- **Frequency:** Review and adjust the schedule weekly or as conditions change.
- **Documentation:** Update project timelines and communicate changes to all stakeholders.

7. Equipment maintenance and backup:

- **Action Step:** Perform preventive maintenance on all equipment and have backup equipment available.
- **Responsibility:** Equipment manager and maintenance team.

- **Frequency:** Conduct maintenance checks weekly and after severe weather events.
 - **Documentation:** Keep detailed maintenance logs and inventory records of backup equipment.
- 8. Access route stabilisation:**
- **Action Step:** Stabilise access routes with mats, gravel, or other suitable materials.
 - **Responsibility:** Site supervisor and construction team.
 - **Frequency:** Inspect access routes daily and reinforce as necessary.
 - **Documentation:** Document the condition of access routes and any stabilisation measures taken.
- 9. Health and Safety Measures:**
- **Action Step:** Ensure all workers are equipped with appropriate personal protective equipment (PPE) and trained on safety protocols for working in wet conditions.
 - **Responsibility:** Safety officer and site supervisor.
 - **Frequency:** Conduct safety briefings daily and PPE checks before each shift.
 - **Documentation:** Maintain safety briefing logs and PPE inspection records.
- 10. Environmental protection and compliance:**
- **Action Step:** Implement and monitor environmental protection measures to minimise sediment runoff and other impacts.
 - **Responsibility:** Environmental officer and site supervisor.
 - **Frequency:** Inspect environmental protection measures weekly and after severe weather events.
 - **Documentation:** Keep records of inspections, regulatory compliance documentation, and any corrective actions taken.

Budget & Time for Response:

- 1. Continuous weather monitoring:**
- **Budget:**
 - Subscription to a reliable weather forecasting service: \$500 - \$1,000 per year.
 - Monitoring equipment (e.g., weather stations): \$1,000 - \$2,000 (one-time).
 - **Time:**
 - Setup: 1-2 days.
 - Ongoing: Continuous monitoring integrated into daily operation.
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- 2. Regular Site Inspections:**
- **Budget:**
 - Additional labour for inspections: \$500 - \$1,000 per month.
 - **Time:**
 - Inspections: 2-4 hours per inspection, performed weekly or after severe weather events.
 - Documentation and reporting: 1-2 hours per inspection.
- 3. Emergency preparedness and response plan:**
- **Budget:**
 - Training materials and sessions: \$1,000 - \$2,000.
 - Emergency equipment (e.g., first aid kits, communication devices): \$500 - \$1,000.
 - **Time:**
 - Initial training: 1-2 days.
 - Refresher training: 1 day every three months.
- 4. Erosion Control Measures:**
- **Budget:**

- Erosion control materials (e.g., silt fences, sandbags, riprap): \$2,000 - \$5,000.
 - Labor for installation and maintenance: \$1,000 - \$2,000 per month.
 - **Time:**
 - Installation: 2-3 days
 - Maintenance: 1-2 days per month, plus additional time after severe weather.
- 5. Drainage solutions for water accumulation:**
- **Budget:**
 - Pumps and drainage equipment: \$2,000 - \$5,000.
 - operational costs (fuel, maintenance): \$500 - \$1,000 per month.
 - **Time:**
 - Initial setup: 1-2 days
 - Ongoing use and maintenance: 2-4 hours per usage, plus regular checks.
- 6. Flexible scheduling:**
- **Budget:** Potential overtime costs: \$1,000 - \$3,000 per month (depending on delays)
 - **Time:** Schedule adjustments: 1-2 hours per adjustment, integrated into project management tasks.
- 7. Equipment maintenance and backup:**
- **Budget:**
 - Preventive maintenance: \$1,000 - \$2,000 per month
 - Backup equipment (rentals or purchases): \$5,000 - \$10,000.
 - **Time:**
 - Maintenance: 1-2 days per month
 - Setup of backup equipment: 1-2 days.
- 8. Access route stabilisation:**
- **Budget:**
 - Stabilisation materials (mats, gravel): \$15,000-\$20,000.00
 - Labor for installation and reinforcement: \$2,000 - \$3000 per month
 - **Time:**
 - Initial stabilisation: 2-3 days
 - Ongoing maintenance: 1-2 days per month, plus additional time after severe weather.
- 9. Health and Safety Measures:**
- **Budget:**
 - PPE: \$1,000 - \$2,000
 - safety training: \$1,000 - \$2,000
 - **Time:**
 - Initial training: 5-7 days.
 - Ongoing safety briefings: 1 hour per day
- 10. Environmental protection and compliance:**
- **Budget:**
 - Environmental protection materials and measures: \$2,000 - \$5,000
 - Monitoring and compliance: \$1,000 - \$2,000 per month.
 - **Time:**
 - Initial setup: 2-3 days
 - Ongoing monitoring and maintenance: 1-2 days per month

Summary Budget and Time Estimate:

Total Budget Estimate:

- Initial Setup Costs: \$15,000 - \$30,000
- Ongoing Monthly Costs: \$6,500 - \$12,000

Total Time Estimate:

- Initial Setup Time: 15-22 day
- Ongoing Monthly Time Commitment: 15-20 days (including monitoring, inspections, maintenance, and training).

Contingency/Fallback Plans:

1. Risk identification and assessment:

- **Continuous Monitoring:** Regularly review and update the risk register to identify emerging risks and reassess existing ones.
- **Scenario Analysis:** Conduct scenario-based risk assessments to anticipate potential challenges and their impact on the project.

2. Contingency budget allocation:

- **Emergency Fund:** Allocate a portion of the project budget as an emergency fund to address unforeseen expenses arising from risk events.
- **Budget Review:** Regularly review and adjust the contingency budget based on the evolving risk landscape and project needs.

3. Alternative risk response strategies:

- **Backup measures:** Identify alternative risk response strategies that can be quickly implemented if primary measures fail or prove ineffective.
- **Resource availability:** Ensure that backup resources, such as additional equipment or personnel, are readily available when needed.

4. Communication and decision-making protocols:

- **Stakeholder Communication:** Establish clear communication channels to promptly notify stakeholders of risk events and the implementation of contingency measures.
- **Decision Authority:** Define roles and responsibilities for decision-making during emergency situations, including the escalation process.

5. Contingency Activation Triggers:

- **Thresholds and triggers:** Define specific thresholds or trigger points that indicate when contingency measures should be activated.
- **Early Warning signs:** Monitor leading indicators and early warning signs to detect risk events before they escalate into major issues.

6. Rapid Response procedures:

- **Emergency Response Team:** Designate a dedicated team responsible for coordinating rapid response efforts in the event of a risk event.
- **Response Protocols:** Develop predefined response protocols and procedures to guide immediate actions in emergency situations.