ASPHALT PAVING - FREEWAY/HIGHWAY

Date Revised:	March 2024	Overall Task Risk Rating:	Before Controls	A	After Controls C
Description:	Asphalt paving on freeways involves regular paving operations on multi-lane divided highways with a continuous dividing median, full control of access and interchanges, and a normal posted regulatory speed of 90 km/h or greater. Heavier traffic control measures are regularly involved in accordance with OTM Book 7.				
Location(s):	Construction Projects – Freeway/Highway				

Associated Documents: Hazardous Agents WTS, Noise WTS, Traffic Control WTS, Driving and Vehicle Operation WTS, Equipment and Machinery Operation WTS, Night Work WTS, Manual Material Handling WTS, Fitness for Duty Policy

RED FLAGS (HOLD WORK UNTIL CORRECTED):

Note:
- Do not commence work unless positive protection (physical barriers) is available or, alternatively, a distance of 3m (one empty lane) can always be maintained between workers and adjacent live traffic
- Do not commence work if there is inadequate lighting for nighttime operations

PERSONAL PROTECTIVE EQUIPMENT (CSA COMPLIANT)

Head Protection	Foot Protection	High-Vis Protection	Hearing Protection	Hand Protection	Eye Protection	Respiratory Protection	Skin Protection	Face Protection	Fall Protection
☒	☒	☒	☒	☐	☐	☐	☐	☐	☐

Note:
- All personnel involved with paving equipment and asphalt handling must wear long pants and shirts with sleeves.
- Additional PPE may be required based on project specific hazards - saw cutting asphalt will require eye, face and respiratory protection; hand protection may be required depending on task.
- For night work ensure workers are visible. Arm and leg bands are provided for night work. Ensure workers high visibility PPE is clean and has maximum reflectivity. High visibility coveralls meeting CSA Class 3 are also available to workers.

SAFE WORK PRACTICES (SWP)

In accordance with the Construction Projects Regulation 213/91 under the Occupational Health & Safety Act (OHSA),

"mobile operation" means work, **including a paving operation**, that is done on a highway or the shoulder of a highway and moves along at speeds of less than 30 kilometers per hour.

s.67 (12) The following measures shall be taken to protect a worker at a project if the project is on a freeway and involves a mobile operation:

1. An adequate number of crash trucks shall be adequately positioned between vehicular traffic and workers in order to adequately protect workers at the project.
2. If the operation involves intermittent stops averaging 30 minutes or less, an adequate number of barricades or delineators shall be adequately positioned between vehicular traffic and the worker.
3. If the operation involves intermittent stops averaging more than 30 minutes,
   i. an adequate longitudinal buffer area shall be provided if physically possible,
   ii. the lane on which work is being done shall be adequately identified with lane closure signs and a lane closure taper, and
   iii. an adequate number of barricades or delineators shall be adequately positioned between vehicular traffic and the work area. O. Reg. 242/16, s. 7.

Traffic Control:

- Traffic protection measures shall be implemented in accordance with Ontario Traffic Manual Book 7
- The Gazzola Paving Traffic Protection Plan form shall be completed by the Superintendent or Foreman and the details communicated to the workers as part of the daily GAZZ Card huddle.

- A Traffic Control Plan is typically prepared by the Constructor for the project and details the specific measures and devices that are to be used on the project to ensure the safe and efficient movement of traffic throughout the various phases of the project.
- Considerations when designing a traffic control plan: work duration, road width and traffic volume**.** Plans include the use of traffic control devices such as barriers, warning signs, longitudinal buffer areas, police, etc. Supervisor must obtain the specific traffic control plan from the constructor prior to operations. All workers present, must be familiar with the Traffic Control Plan for the project.
- Construction regulations under the OHSA include paving as a mobile operation and require the use of BV for freeway paving operations. While paving operations progressively move along the highway, they do so very slowly, at only a few kilometres each day.

Protection from lateral intrusions:

- Positive (physical) protection such as temporary concrete barriers is the preferred method for the protection of workers from traffic hazards on adjacent live lanes on a freeway. In accordance with OTM Book 7, Where temporary concrete barriers are used, the following are some of the guidelines and specifications that apply (Refer to OTM Book 7 for full guidelines):
  - Temporary concrete barriers must not be placed perpendicular to the direction of travel and are not intended to be used across a highway for a highway closure.
  - On long-term freeway construction projects, temporary concrete barriers or other equivalent barrier systems should be installed to protect workers from vehicular traffic in accordance with Regulation 213/91, Section 67, under the OHSA.
- Where it is not practical to install the barriers as required, workers must maintain a minimum safe distance of 3m (One Empty Lane) from adjacent live traffic as protection from lateral intrusions.
  - In accordance with the Government of Ontario's "Central Region Closure & Right-of-Way Usage Notification Protocol": <u>The Ministry of Transportation has been issued an Order by the Ministry of Labour. The Order reads: "Except in an emergency the employer shall not permit a worker on a 400-series highway in Central Region to work within 10 feet or 3 metres of moving traffic unless protected by a guard or other device from moving traffic."</u>
- One or more crash trucks may be used along the length of the "empty lane" to provide further protection from lateral intrusions.

Night Work:

- Ensure lighting is adequate for visibility of the workers and for the workers to complete the task at hand.
- Lighting used to illuminate the worksite shall not be aimed at drivers (making it more difficult for them to see their intended path)
- Refer to Night Work WTS for more details.

General Paving Practices:

- Start the work only when you are certain that you understand the work, the hazards and you have implemented the appropriate controls
- Unsafe conditions and situations must be reported to Foreman/Superintendents immediately (and stop work until the hazard is controlled)
- Use the 'buddy system' and watch out for co-workers who may be unaware of a hazard
- Employees shall not use cellular devices or music devices while working around paving operations without the permission of the Foreman or Superintendent
- Be aware of heat stress related hazards while working outside in the summer season with hot asphalt
- Be aware of the sequence of operation and stay out of the Path of Travel of moving vehicles and equipment
- Never walk in the area between the paver and the shuttle buggy
- Paving machine operators must signal any time they intend to resume travel from a stationary position
- Never drive a vehicle/equipment into live lanes of traffic before ensuring the road is closed/secured
- Never enter or walk across a live lane
- Signalers are required for backing vehicles when the operator's view of the path of travel is obstructed
- Refer to the Asphalt Paving WTS, Equipment & Machinery WTS for more information.

Inspections:

- A pre-operational safety inspection is to be completed prior to using equipment
- Do not use defective equipment or machinery, inform your foreman / superintendent - they will arrange for the equipment to be serviced
- Before starting machines or equipment, ensure guards and safety devices are in place, adjusted and functioning properly

Training:

- Employee Orientations (including roles, responsibilities, applicable workplace task standards, WHMIS, etc.)
- Only trained, authorized personnel are allowed to operate vehicles / machinery / equipment

PPE:

- Workers on construction projects must wear, at a minimum, head, foot, and high visibility PPE. Eye protection as necessary.

- Wear the appropriate personal protective equipment for the job at hand (i.e. hearing protection, respirator, etc...)

JOB HAZARD AND RISK ANALYSIS

RISK RATING SYSTEM

A	High risk of injury or equipment / property damage.
B	Medium risk of injury or equipment / property damage.
C	Low risk of injury or equipment / property damage.

TASK HAZARDS	RATING BEFORE CONTROLS	TASK CONTROLS	RATING AFTER CONTROLS
• Struck by hazards from work equipment or live traffic	A	• Ensure a minimum distance of 3 m is always maintained between workers and live traffic unless physical barriers are utilized • Never drive a vehicle/equipment into live lanes of traffic before ensuring the road is closed/secured • Never enter/walk across a live lane • Be aware of the sequence of operation and stay out of the Path of Travel of moving vehicles and equipment • All workers shall wear high-visibility clothing (CSA approved) while working at night – including the addition of arm and leg bands (or wear coveralls)	B
• Heat Stress	A	• Drink water throughout the day (don't wait until you're thirsty) • Taking rest breaks as needed (in a cool, shady spot) • When possible, do the heaviest work at the coolest times • Use the Buddy System – watch for signs of heat related illnesses in your co-workers • If you think someone has heat stroke or heat exhaustion: call 911, inform the Foreman /Superintendent and begin First Aid	B
• Inadequate lighting	B	• Ensure lighting is adequate for visibility of the workers and for the workers to complete the task at hand • Lighting used to illuminate the worksite shall not be aimed at drivers (making it more difficult for them to see their intended path)	C
• Lack of Spotter	B	• Signalers are required for backing vehicles when the operator's view of the path of travel is obstructed • Signallers are required when equipment is within the safe limits of approach to overhead powerlines	C
• High Noise Levels	B	• Workers exposed to high noise levels must use hearing protection (CSA approved Ear plugs / Ear muffs) • Workers shall wear appropriate hearing protection where the potential exposure of noise cannot be reduced below the occupational exposure limit of 85 dBA over an 8-hour period	C
• Asphalt Burns	B	• All personnel involved with paving equipment and asphalt handling must wear long pants and shirts with sleeves • Wear appropriate PPE (i.e. gloves) when risk of burns	C
• Lack of Inspection	C	• A pre-operational safety inspection is to be completed • Do not use defective equipment or machinery, inform your foreman / superintendent	C

• Lack of, or Improper, Training and Education	C	• Machine Operators must be authorized and trained • Only trained and competent personnel are permitted to perform maintenance	C
• Poor Housekeeping	C	• Keep a clean working area, remove any tripping hazards • Ensure that tools are neatly and safely stowed on equipment • Equipment / vehicles should be cleared daily of any garbage so as not to obstruct brakes, accelerator pedals, etc.	C

SAFE JOB PROCEDURES (SJP)

Pre-Task Commencement:

1. Gather and wear the required PPE for the task
2. The Superintendent/Foreman will complete the Daily GAZZ Card and conduct a crew huddle to review with all workers the shift's tasks and any associated hazards and control strategies
3. Ensure all workers understand the GAZZ Card contents, and sign off in acknowledgement
4. Ensure controls are in place prior to commencing work so hazards are mitigated / eliminated
5. Ensure lighting is adequate for the task at hand, and is fully functional
6. The Superintendent/Foreman will complete a Traffic Protection Plan and ensure that traffic protection measures are in place in accordance with Ontario Traffic Manual Book 7 and communicate the hazards and controls to workers when workers have the potential to be endangered by traffic (refer to Traffic Control WTS for more detail)
7. Freeway traffic protection includes the use of physical barriers. If barriers are not practical, a minimum safe distance of 3m (One Empty Lane) from adjacent live traffic must be maintained along with adequate placement of crash trucks to prevent lateral intrusions.
8. Determine what equipment / machinery / tools and material, are required for the completion of the task
9. Inspect all equipment / machinery / tools prior to use and document the inspections on appropriate forms when required
10. Ensure preventative maintenance activities have been completed where required, prior to using equipment / machinery / tools
11. If equipment / machinery / tools are observed to be damaged, remove it from use and notify the Foreman / Superintendent
12. Overhead hazards (i.e. powerlines) will be identified, signs posted and a signal person appointed as required

During Task - Asphalt

The following steps are for laying asphalt paving

1. A minimum distance of 3 m must be maintained at all times between workers and live traffic unless physical barriers are utilized
2. The dump truck loaded with asphalt backs up to shuttle buggy or paver following the directions of a signaler
3. The hopper on the paver or shuttle buggy is loaded with asphalt by the dump truck
4. If the shuttle buggy is used, the asphalt is then processed and loaded into the hopper of the paver.
5. Never walk in the area between the paver and the shuttle buggy
6. Asphalt is placed down on the surface by the paver and manually shoveled and raked by workers to fill areas not covered by the paver.
7. Paving will be conducted at a pace that ensures efficiency and safety - workers are not to be 'pushed' by equipment operator
8. The surface gets rolled and compacted with rubber tire and smooth drum compacting rollers
9. When paving operations have ended, the crew members will inspect and clean equipment and report malfunctions to supervisors

Task Completion:

1. Ensure all tools and equipment are cleaned and stored appropriately in the designated locations
2. Implement any housekeeping or maintenance as required
3. Ensure equipment is properly shut down, secured from movement and parked in a safe location off the travelled portion of the road where possible or clearly marked by traffic control devices to ensure safe movement of traffic.