

# Coping with Fleet Facility Risk

**M**unicipal fleets are as unique as the communities they serve. The average municipal fleet, however, is made up of approximately 50 vehicles of various functions. Whether the vehicles are snowplows, light-utility vehicles or transit buses, these important and valuable assets represent a substantial investment to the municipal coffers.

Intact Public Entities (IPE) provides excellent risk management advice for municipal fleets; from managing CVORs to maintaining fleet safety through dashcams or telematics, much has been written to keep vehicles, and those that drive them, safe.

Little is written however, about where municipal fleet vehicles are stored. Garages, depots, and maintenance shops house and service municipal vehicles. Any complete fleet risk management plan must include depot and garage inspection and safety. They cannot be treated like a regular municipal structure: they are simply not the same as a civic centre or a recreation facility.

The very nature of fleet depots and storage facilities compels risk managers to mitigate the risks for a facility that is often empty (when the fleet is on the road) and then replete with vehicles when off the road and/or receiving maintenance or cleaning, and in some unique cases, re-charging.

Risk management plans must consider the storage facilities and depot structures for fleet vehicles – the values and the risk for loss are just too great to ignore. In the following few pages, we will address the unique risk exposures that garages and depots represent – how to begin to face them, de-risk them, and perhaps augment your own municipal risk management plan to harden these valuable structures from harm.

## Where to start?

Structures that house fleet vehicles are as unique as the varied fleets themselves. Consequently, it is difficult to find a fixed starting point from which to create and assess a risk-management plan for the home base of your municipal fleet. Regardless of the nature of the fleet, or the building that houses it, one way to begin to contemplate your risk-management strategy is to consider the tried-and-true

components used when underwriters assess risk: the elements of COPE.

COPE stands for Construction, Occupancy, Protection and Exposure. COPE is used by insurance underwriters when they are considering rate and premium for all nature of structures. Using COPE creates a structured and orderly way to assess facilities and premises regardless of their size and use. When used as a risk management tool for fleet depots, we consider the following:

### Construction

How is the building made? Is it tip-up construction, wood-frame, cinder block, flat-roofed or peaked-roof? But why do those things matter?

Structures that are constructed with potentially flammable construction materials can, if not properly protected (see below), enhance a fire's progression. Controlling and containing fire must be a chief objective of any risk management strategy: even more so when considering fleet depot hazards.

Very old or retro-fitted construction must be a concern; especially where these potentially not-up-to-code buildings are housing a concentration of expensive municipal assets.

When a structure is older and has been added to, "pieced together", or renovated over the years, risk managers should be especially cautious and make note of "dead" spaces, cavities and air pockets. These areas can act as a chimney, providing extra oxygen to a smouldering fire, and can increase the risk of a runaway fire spreading throughout a structure causing unanticipated damage. There is no doubt that retrofitting an existing structure has many cost benefits to cash-strapped municipalities, but these cost savings can come with risks.

Though older buildings may be utilized, they do have a different risk profile than a brand-new, purpose-built structure. If your fleet is housed in such a building, you will need to consider retrofitting it with safety systems to mitigate the risk that an old out-of-date structure represents to your fleet – and don't forget the inherent hazards of the above-mentioned "dead-zones."

Proper fire breaks between areas of operation must be implemented with fire prevention in mind. All man-door locations should have fire doors with closing mechanisms. Fire breaks must comply with relevant Building and Fire Codes; there will, for instance, be situations where a masonry break will be appropriate and others where drywall divisions, which can delay the spread of fire, are the correct choice. Fire breaks may continue up through a ceiling structure creating parapets on the roof structure. These areas must be assessed by experts to ensure that the construction is appropriate for the use, or occupancy of the structure. “Fire curtains” are relatively new developments in fire mitigation technology. A fire curtain is triggered when fire or smoke is detected and roll down to encapsulate the affected area. The curtain is made from fireproof materials which enable crews to isolate the area, potentially buying them time to remove flammables away from the hazard and evacuate staff to safety. As with all new technology, the costs could be prohibitive, however, this extra safety measure may be an excellent choice.

The design of proper ventilation systems is an important component of the building’s construction and its safety systems. This is especially true of buildings that house operating vehicles which emit exhaust or facilities that have spray booths. Older buildings with potentially less effective ventilation and/or heating systems can be a hazard to the staff working there.

Where you have a shared-use structure, distinct heating and ventilation systems should be designed for each separate area, i.e., offices away from repair facility, and tested regularly. Ensure you have a regular inspection and cleaning regimen of ventilation and filtration.

## Occupancy

When underwriters are thinking about how to rate a structure, they consider the use of the building: How is it occupied?

For a fleet facility or depot, the use of the building is a primary concern. A mixed-use structure, where vehicle storage is shared in the same building as, for instance, administration or vehicle maintenance, the risk of a catastrophic fire, must be contemplated. There may be a solid business case for sharing a fleet storage facility with other operations within the municipality; it might be the most efficient way to operate and could deliver cost savings, but it should be a conscious and well-thought-out decision after a thorough risk management process. The very fact that the facility has varied functions

increases the potential for hazardous conditions – for both the facility as well as the staff members that are housed there. If the facility is being used for maintenance of fleet vehicles, extra consideration should be paid to keeping the facility safe, but also the staff and again, the physical fleet assets, within the structure.

When changes in operations occur within the facility or on the premises, the hazard profile of the structure will change; introducing gas/diesel pumps, or implementing an EV fleet with a charging facility, needs to be contemplated in the context of mixed uses. Installing an EV charging facility next to a gas/diesel filling station requires extensive consideration of protective measures. Ideally gas/diesel storages and pumping facilities should be outside and away from any flammable sources (trees, bushes, garbage storage).

Access to the facility, at all levels, must be controlled. Where there are repair facilities, only trained and certified staff members should be permitted to enter – especially in and around hoist areas. These areas must have either fob access, or sign-in sheets and this should be documented, and this data retained.

All entrances and emergency exits must be well-lit and signed. Staff at the facility must regularly drill for full evacuations and understand the importance of muster stations and proper documentation of attendance.

## Protection

When an underwriter assesses the protection of a building or facility, appropriate protection is a consideration. Depending on several factors, a sprinkler system might be appropriate. A full assessment from the Office of the Fire Marshal will be appropriate to ensure compliance – but is often only the minimum. Depending on the use of the structure, dry-chem systems might be appropriate. Remember that installing a sprinkler system in a structure will be very effective in mitigating a severe fire loss, it will also, however, introduce a powerful source of water to a structure which otherwise may only have a bathroom or some sinks.

Like many risk management solutions, sprinklers can save lives and property, but can also be a source of losses. If sprinklers are present in fleet facility, especially a retrofitted system, it must be regularly serviced to ensure its efficacy and to protect against leaks and accidental discharges. In an older (and large) system, it is imperative that the entire course of the system maintain a regular heat, so

the water won't freeze and burst. Further, the installed retardant system must be appropriate for a large fleet structure. Temperature, design and proper maintenance are important factors to contemplate if sprinkler systems are to be implemented. Be mindful of changes in operation: when retrofitting a facility for a new function, have you changed the sprinkler accordingly?

Proximity to fire stations as well as a trained and professional fire fighting department is an important element of protection that must be considered. Housing a valuable fleet facility in an area that is not serviced by a professional firefighting force or adequate and functional hydrant infrastructure (with sufficient pressure) is not recommended. Emergency trucks or ambulances must have suitable and unfettered access in the event of a catastrophic fire. Emergency access is crucial when choosing a location and designing the environs surrounding the structure.

Each vehicle ideally should have a hand-held extinguisher which should be part of an asset management strategy to ensure they are tested regularly and operational. Staff must be trained in how to extinguish local fires quickly and safely. When there are maintenance bays, extinguishers and/or fire blankets should be within easy reach.

The Fire Marshal should understand the nature of the structure and should provide guidance at the planning stage of implementing the garage/depot as a storage or maintenance facility. If the use of the depot changes, for instance, if the structure was a storage facility, but will now be used for maintenance, or if the nature of the vehicles changes (shifting from diesel vehicles to electric, for instance), the Fire Department should be notified and included in safe storage/utilization of the structure. Busy fleet structures are a hub of activity and those activities often change over time by nature of the organic growth of fleets or shifts in responsibilities for a public works department. The prudent risk manager must be aware of those changes and consider how they could impact the hazard profile of a structure/facility, and how protection should be factored into the changes.

Function – Remember that Occupancy means use: how will the depot structure function for the municipality? Will it be closed and locked up every evening? Will it be operational 24/7? Each function carries a risk/benefit profile that needs to be examined.

- Closed in the evening: When the staff go home and the vehicles are locked up, the risk of unabated fire could

destroy the entire fleet, not to mention other offices or utilities that are housed there, is substantial.

- It is imperative that if the depot is to be closed up in the evening that:
  - A monitored alarm be implemented that is tied to local law enforcement and fire departments.
  - If the yard surrounding the depot houses vehicles, it too should be locked and secured. Depending on the values stored in the yard, it may be appropriate to install CCTV cameras as well as motion-detection lighting.
  - Theft and vandalism will be a concern in unoccupied areas. If there is a vehicle of special value or interest, consider locking the vehicle inside the building for extra security – remembering that could increase fire risk.
  - Combustibles should be stored away from valuable fleet vehicles. Consider your use of flammable materials – are they stored away from the fleet? Is the electrical in the building up-to-code and inspected regularly?
  - In buildings that are to be shuttered in the evening, effective smoke alarms and sprinkler systems are an integral part of your risk management plan. If you do not have them, consider implementing different staff use of the structure (by having maintenance staff working revolving shifts) or security guards.
  - Seasonal use of fleets and their depots must raise the same concerns: if there are no staff present, what “remote” strategies are in place to alleviate safety concerns? All of these systems should be inspected regularly, but especially prior to a seasonal shut-down.
- 24/7 operation: When staff are present and working on the fleet constantly throughout the evening. The risk management concerns shift to safety of staff and security of the building to ensure everyone is present and accounted for. In order to be properly secured, ensure that:
  - Someone from the Joint Health and Safety Committee be present during the shift to ensure that employees are safe and evacuation procedures can be adhered to.
  - If there is the potential that there will be staff working alone: Remember that the OHSA states that the employer must still ensure that the workplace is safe. The Public Services Health and Safety Association (PSHSA) has articles and information to assist in creating a safe workplace for employees that find

themselves working alone. Just because they are by themselves, does not mean that safety standards should fall to the wayside. Creating a written policy for isolated workers is a great start, but they must be regularly checked to ensure that they are still complying with relevant safety standards. Consider what happens if the worker slips and falls or has a health event when they are by themselves – be sure to consider this when creating your procedure.

- If workers are to be by themselves, are their tasks restricted? Are they using potentially hazardous equipment by themselves? Even spray paint booths can represent a fire hazard, and if an incident occurs when that worker is by themselves, the results could be catastrophic. We recommend that the tasks performed in the evening be restricted and understood by everyone. This means that casual “overtime” can still be used where necessary, but restricted when the workers are by themselves.
- There will be some scenarios as noted above, where seasonal functionality of the depot space will mean that new shifts are coming on that may not be properly trained in safety – especially in the off-hours. The processes and procedures need to be very stringent due to the very nature of the activity; there is not always a manager present to check on best practices in real-time. Are ventilation or lighting systems set up on a timer? If so, have they been changed to accommodate night work?
- If staff are leaving before the morning crews arrive, securing the facility properly will be an important consideration that should be as fool-proof as possible. How is this process baked into your SOP? What type of follow-up is done to ensure compliance? If staff are leaving in the evening, are the areas well-lit and safe?

**All Of Your Eggs in the Same Basket** – The use of a single depot for an entire fleet represents a substantial concentration of values. If a total loss fire were to occur, the impact of the loss would be substantial. Consider the impact of not being able to deliver services: snowplows, or bus services or fire fighting, have you created a contingency plan in the event that your fleet is substantially impacted?

The efficiencies gained by housing the entire fleet together in one facility may make good business sense, however, a total loss of that fleet asset must be effectively protected against where possible. The loss of the entire fleet asset

would be a costly loss most certainly, but the added costs associated with contingency plans so that services are not disrupted can be substantial and must be a factored-in part of your cost/benefit analysis.

## Exposure

The last of the four components when addressing how to rate a particular risk is exposure. When assessing hazards for fleet structures, risk managers must consider the proximity of the structure to hazards – sometimes hazards that they may not even have control of. Consider a fleet structure situated next to a neighbouring manufacturing facility. Now imagine that the manufacturer shifts their production to a combustible or flammable product. If the facility is adjacent to a propane distribution facility for instance, the exposure to a catastrophic explosion and its effects for the facility is substantial. This is difficult: how does a risk manager control for their surroundings? They may not always be able to, but they must be able to understand their risk, and build in controls to their systems where they can. Ultimately, risk management’s main objective is to eliminate fortuitous (accidental) losses to the municipality, and only by understanding how adjacent hazards can affect these important municipal assets, can this goal be achieved.

Consider the depot’s proximity to any wildland/urban interface to assess fire hazard. How far away are trees or scrub? During a conflagration, creating effective firebreaks around the facility is integral to keeping fire at bay. Situating a fuel pumping station well away from potential sources of fire makes good sense. Fire from surrounding forested areas is only one adjacent exposure for the proactive risk manager to consider, but there are several resources available to mitigate this exposure. Using FireSmart™ guidance can also be used here. Pollution concerns should also be recognized here as well, and the installation of any fuel-storage facility must contemplate adjacent water sources and neighbouring properties that could be vulnerable to a fuel spill.

Facility staff and supervisors should be aware of the facility’s surroundings, and robust feedback channels should be implemented to ensure that when new hazards emerge, all eyes and best efforts are implemented to mitigate the hazards.

## Other Risk Management Considerations

Once the COPE factors have been reviewed to help identify risk exposures for your fleet facility, be it a small garage or a large bus fleet depot, we suggest that the hazards be

effectively addressed. Remember that the COPE strategy is intended only as a starting point to depot safety – do not be surprised to find that the process only uncovers more concerns and that is okay: these are not problems so much as challenges to be overcome!

Owning and operating a municipal fleet comes with risks, and as a proactive risk management professional, part of any risk management strategy must include a plan on how to address the identified hazards using all the tools at your disposal. The chosen solutions should be commensurate with the risk and must be fluid and dynamic. Fleets are, by their very nature, a moving hazard, and the risks that they represent change with each fleet development or change.

## Unique Scenarios

### Bus Depots

Structures that house bus fleets often serve the function of parking vehicles when not in operation, but also when they are being maintained. The intricacies of depot management are unique to each operation:

- Using diesel buses
- Are hoists being used? Are hoist safety and inspections carried out with rigour?
- To what extent is maintenance being carried out? *Power tools, grinders, and torches can increase the likelihood of fire hazard – the proximity of flammables can make the risk of losing the entirety of parked fleet vehicles more likely.*
- Who is permitted within the maintenance area? Strict controls over who will be permitted in this potentially vulnerable area must be maintained. Those who are permitted should understand garage safety. Again, there ought to be restricted areas and those areas should be strictly controlled.
- Retrofitting municipal fleet vehicles from Summer to Winter operations (installing plow blades, changing tires) requires properly trained staff as well as appropriate (and safe) storage of the equipment.
- Active garage areas, where there is the potential for fuel storage and use require stringent procedures to address flammables, explosions, and suppressive systems.
- Where vehicles are moved, proper routes within the structure should be demarked, and adhered to. These areas must be well-lit and properly signed and staff must understand and be trained in the unique hazards of moving vehicles in enclosed spaces.

- Reversing vehicles should be avoided: create a pass-through environment wherever possible. When reversing is unavoidable, create a strict safety routine with mirrors, communication devices and recognition that reversing in both the depot as well as the yard surrounding it should be an exception rather than common practice.
- Alternatively, inactive storage facilities pose their own unique hazards which require risk management treatment:
  - Theft
  - Vandalism and Arson (of both the structure and the assets being stored)
  - Pollution hazards from leaking storage tanks (due to wear and tear)
  - Collapse of structure (due to lack of use and inspection)

When considering depot risk management, there are two components (three, if you consider the human-risk factor): the structure, and the vehicles in the fleet; not to mention the loss of use of either. *What are the outcomes should one of these critical components suffer catastrophic damage? Will the municipality need to cease transit operations?*

### Electrification of a Fleet

Managing fleet safety has many facets, from driver safety to proactive, regular maintenance, not to mention shifting away from gasoline/diesel vehicles to a zero-emission fleet. This relatively unknown arena introduces transitional risk, in which risks associated with moving away from traditional carbon-producing assets and fleet vehicles could mean unknown liabilities. The net benefit, aside from the potential reduction of GHGs could be a healthier environment for workers, and potential cost savings as we move away from combustion engines and towards alternate forms of energy use. Such a paradigm shift in municipal transportation requires a re-examination of the practices and risk profiles that had been part of regular risk assessments in the past.

Before moving forward with new technology (which you may not have local and in-house expertise on), all of the infrastructure needs to be assessed by certified professionals: is the grid capable of handling the extra load for EVs? *Is the manufacturer able to assess the depot structure to ensure they are comfortable with the configuration of the charging infrastructure as well as the concentration of vehicles being housed in this structure?*

## Repair Facility

Regardless of whether an electric fleet of buses is being fully adopted, it must be recognized that historically, diesel buses represented their own fire risk. Especially those vehicles that were older and had undergone extensive repairs. Repair histories should be properly maintained so that if a fire does occur, claims professionals can ascertain the history of the vehicle and establish whether there is an opportunity for pursuing an at-fault mechanic, part supplier, or repair facility. Even if work is being done by in-house mechanics, proper tracking of their work must be documented.

The cost savings of using staff mechanics rather than contractors can outweigh the drawbacks of doing the work in-house; it entails bringing hazards into your own facility rather than remaining with a third-party contractor. Suffice it to say, guidelines can, and should, be implemented to lessen the negative effects of doing your own maintenance and repair work:

- **Hire certified mechanics:** Implement stringent hiring criteria and ensure that all working mechanics comply with the highest safety standards. This includes hoist safety as well as enforcement that staff only carry out work that they are certified to do. Apprentice mechanics must follow strict guidelines to protect both themselves and the assets they work on – not to mention the ultimate liability to the municipality.
  - **Use guidelines and documented procedures for contracting repair work:** Use only certified mechanic shops for the work that is required – no shortcuts, no handshake deals. When using an outside shop, be sure to complete a work order agreement which should detail the shop's safety program and what warranty is provided for the work that is being carried out. Like any vendor agreement, they must have appropriate Commercial General Liability insurance to support any liability they might trigger due to their own negligence.
  - **Ensure your in-house mechanics understand and are trained in fire risk and prevention:** Understanding how fires can ignite from battery cables, catalytic converters, grinding tools, hydraulic fluid, etc., must be conveyed to all employees in the facility, but mechanics most of all.
  - **Keep a clean facility:** Depots and vehicle storage facilities naturally become repositories of potentially flammable debris and waste. Cleanliness and orderly day-to-day practices not only remedy this hazard but
- also demonstrate an ethos of safety. There are several industry-standard guidelines for keeping the mechanical facilities clean and safe. Facility staff should meet or exceed those guidelines and document them!
- **Attention to electrical safety:** The importance of electrical safety cannot be overstated. This includes the safety of electrical systems of the facility, equipment, the buses and vehicles, and often, how they interact. If you are implementing charging technology into your facility to accommodate electric vehicles, you must understand the implications to your fleet and your fleet facility. No charging should be done on-site unless a certified electrician has installed the equipment, and it is CSA-certified.
  - **Storing safely:** From old vehicles in disrepair, to equipment and fuel/oil storage, every time a decision is made to store potentially flammable goods or valuable municipal assets within a facility, good risk management practice should compel you to consider the impacts of doing so. Each time a new piece of equipment or a new type of oil/lubricant/fuel source is introduced to a facility, storing these substances must be considered and balanced.
  - **Consider hot work:** Using torches for bodywork and grinders is a practice that is commonplace amongst mechanics and body specialists – so commonplace in fact, it is seldom contemplated to be the fire hazard that it is. Hot work, and the use of torches and welding equipment, should be contemplated by facility management and must be part of a documented and implemented risk management practice. If torches and welding equipment are to be used, ensure the work area is separated (either by physical barriers, or preferably in a different building) from valuable and potentially flammable, fleet vehicles.
  - **Bodywork/Spray painting:** Unless the facility has been designed for painting and bodywork, consider using a location away from the facility. Paint booths and bodywork are specialized practices that require customized work areas to be separated from typical depot/fleet facilities.
  - **Restricted areas:** To keep staff and visitors safe, work areas should be distinct from other areas and restricted. Unauthorized individuals should not be permitted around lifts/hoists, nor should untrained individuals be moving vehicles inside a depot unless they are certified to do so. These sometimes-tight areas are a hub of activity. Movement of vehicles and controlling for people who are present in these areas must be

considered. Security must be in place at all times: sign-in and sign-out sheets (or electronic fobs) should be used so a proper inventory of people who enter and exit the depot can be done at any time with tracking of those individuals who have access.

## Conclusion

Balancing safety and efficiency must be paramount in a depot/fleet facility. Starting with COPE as a launching pad to better risk management practices is an excellent way to begin to assess fleet depot exposure. The process should be tailored to the type of structure being used and the fleet it will house, but regardless, risk management should never be an afterthought. Implementing a proactive strategy that is based on sound risk management strategies will require an all-hands approach; from identifying hazards to implementing effective risk management tools, but when mindful decisions are made to keep the facility, the fleet vehicles, and the staff that works on these valuable assets safe, everyone and everything, is safer for it.

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