No DPW Vehicle Storage – Park Trucks/Equipment outside

- Increase effect on Production costs
  a) Leaving tools on trucks – load and unload at either end of day
  b) Sanders emptied after each operation and before start of new: no on-call sander for spot sanding or prep storage
  c) Sewer Truck drained and refilled for each operation
  d) Greater time needed to warm vehicles; neighborhood objections to fuel exhaust , which would be mitigated by internal building fans/exhaust
  e) Lock out tag out impact, the shuffle of needed equipment and Key access
  f) Increased time necessary to maintenance equipment exposed to elements: grease, replacement of frozen/seized parts, down-time related to equipment that breaks-down on the job

- Reduce emergency response especially during winter Operations
  a) Diesel jelling
  b) Hydraulic oil flow
  c) Air line freeze
  d) Clearing/cleaning snow/frost
  e) Exposure of staff

- Increase safety concerns for staff
  a) Lack of snow/ice melt on bodies
  b) Clearing snow: slip and fall injuries

- Vandalism
  a) Increase costs for repair/replace stolen item
  b) Risk of injury to perpetrator
  c) Lack of equipment use

- Increase Equipment Breakdown subsequent repairs and cost
  a) Increased body and component rust/corrosion/paint oxidation
  b) Sun/ozone deterioration of all rubber parts and tires
  c) Life expectancy shorten
  d) Wear on drive-train low flow lubrication

- Plant/facility construction
  a) Cost for electric Utility
  b) Cost to construct
  c) Retrofit equipment with heaters

- Environmental
    a) Noise, exhaust smoke
    b) Lower fuel economy/increase in fuel expense **Brian Amesbury**

Hi Bill: Several years ago I had a feasibility study performed for my new DPW facility utilizing the same site. It unfortunately took a "back burner" to our new Middle School project however the Manager is still very intent on a new facility. We currently house most of our vehicles outside, however this was not the case with the new design. Our intent was to house all vehicles inside, under one roof for many reasons. As with our own experience for those of us who keep our own personal vehicle garaged at home; a garaged vehicle's life is extended measurably relative to engine, electrical, computer, frame and chassis when not staying out in the elements no matter what the season. Efficiency of DPW operations is adversely affected when the vehicle is needed during winter operations for snow/ice clearing when required during off hours; when the vehicle is garaged, it's ready to go. Safety of the operator is enhanced when the vehicle is garaged precluding the operator from climbing all over the vehicle to clear it of snow and ice. When I held the neighborhood meeting, they were very excited about the concept of garaging the vehicles regarding the issues of "warm-up" engine noise (at all hours of the night, if needed) along with the beeper back-up systems noise being reduced. So we found that garaging vehicles reduces local neighborhood noise pollution; extends the life of the vehicle; increases operations efficiency and enhances operator safety. Fire Departments house their vehicles for the very same reasons; it makes good sense for Public Works Departments to follow the same procedure. Hope this helps Bill; if you need any further information please let me know. Good luck with the project. Best Regards**, Don DeHart - Danvers**

Bill,
Our preference is to have all vehicles parked inside, however, space is limited. Any vehicle (6 wheelers, 1 tons and heavy equipment) diesel powered must be parked inside during the winter months. If that becomes your Department policy (housing diesel powered vehicles) then your inside parking should accommodate that design. **Dave – North Reading**

Hi Bill,
I have the majority of our vehicles inside and I am working on a small facility to house the remainder. Would have been built by now however the cost escalated substantially and Town Meeting did not approve the additional funding.

Benefits of Parking inside
- Extends the life of the equipment
- Improves emergency response - winter issues impact vehicles that are kept outside (starting/batteries, etc.), materials freeze in the bed of dump trucks.
- Sand & Salt would freeze in the dump body
- Reduces fuel cost - staff does not have to let vehicles warm up before operating, especially diesel and hoisting type vehicles.

- Vehicle leaks are contained and do not impact the outside environment. A hydraulic leak or gasoline could result in a costly cleanup.
- Neighborhood - Facility is quieter in the neighborhood
- If water/sewer division vehicles - Often times equipment and tools get wet and will freeze during the cold season. **Rick - Wakefield**

Bill,
With our old facility we currently stack vehicles and are able to park most of our vehicles inside. This stacking is inefficient or operations especially emergency operations that require certain equipment to be used that cannot always be anticipated. In May of this year Belmont completed a feasibility study for a new DPW facility (this study put the facility on the list of projects to be considered). This study planned for the drive thru parking of vehicles and listed the reasons for not stacking as: "impact response times in the winter, result in unnecessary exposure of Town vehicles to harsh winter conditions and the accelerated deterioration of equipment." My professional opinion is that it benefits any Town, especially in the long term, to store all vehicles indoors and accessible both for operational efficiencies (both daily and in emergencies) and protection of the Town's significant assets in equipment. Please let me know if you need anything else. Thanks, **Peter - Belmont**

HI Bill;
We do not park all our vehicles inside due to lack of space. In my opinion inside parking is critical; protection fom the weather, protection from vandals, environmental safeguards in case of fluid leaks are all factors to be considered. Good luck**. Jim - Chelmsford**

We park everything we can fit inside. We consider it a necessity especially for the diesels and you need to crank them up for a storm at 3 am. We keep a sander loaded for emergency response to accident scenes to cover fluid spills. Having it indoors means we do have to add salt (keeping a sander loader with salt mix is a kiss of death for the machine). I have worked in 6 different DPW's (CT, NH, and MA) and all had indoor storage for these same reasons. **Jack - Andover**

Bill: We park our vehicles inside a covered facility. This seems to work best for us especially during our winter months. Thanks. **Stacy A. DuBose Grand Rapids Michigan**

Bill; I don't have any articles to pass on, but we park ours outdoors because of the beautiful sunny climate here in the Phoenix area. I would think you would want them inside because of the winter climate elements. Nothing is worse than having to come in at 1 a.m. to prep the snow plow vehicles and having to chip away the ice from the door key lock, remove ice off the windshield, etc..... For those vehicles that don't need inside protection (admin vehicles), but would prefer to not have to de-ice or remove snow, maybe you could have an area outside like a car port section for overhead protection. I guess it depends on how severe your winter storms are. Another consideration is the type of security protection you have around your PW yard where your vehicles are stored. Is there adequate security for the vehicles that have tools or equipment? Maybe you could design your storage in tow sections, as both a maintenance area

and protection from the winter elements. Just some thoughts from an Arizona transplant from upstate New York. Good luck. **Rick Chandler Arizona**

Bill,
The City of Alexandria is in the process of building a new Public Works facility. Because of the space requirements and warmer climate than the New England area, we will not able to park vehicles inside. However, before I came to Alexandria, Virginia, I was a State District Engineer in Maine and we parked all moving equipment(trucks, graders, tractors, etc.) inside due to weather conditions. If we had not housed the equipment, most diesels would not have started easily in the winter. Also, after a long heavy snow storm, the equipment would build up with snow and ice. Being housed, the snow and ice melted off the equipment after the storm, reducing maintenance and providing additional safety for the equipment and driver. **Doug McCobb P.E.Deputy Director - Operations**

The City of Fairfield built a new facility in 1999 and as we grow continue to add additional inside storage so that all equipment is inside. We also built a truck wash for all our vehicles which has greatly reduced the problems we had with rust especially on the snow equipment. By keeping vehicles we have eliminated the problems of starting diesel engines in cold weather along with prolonging the like of all rubber items such as wipers, tires, etc. It has also kept the vehicles looking new for a fleet we are very proud of. This is only a few of the benefits from inside storage. Something I forgot to mention is that Fairfield now has the opportunity to preload our trucks and store them inside before a storm hits saving labor time and delays so that we can begin operations at the beginning of a storm. **Dave Bock - Fairfield**

Bill,
Our facility was built in 1988. We park our vehicles inside (drive through). Advantages:
1. Safety - Plows are stored in front of each vehicle so they are mounted in an area away from the elements; circle checks are more likely to be done; mechanical issues can be dealt with in a dry environment.
2. Security - no vandalism.
3. Life expectancy will be extended.
4. Access to vehicles/equipment is immediate during emergencies.
5. Organization - each vehicle is assigned a parking space.
Ted – Reading

Bill, It was good to see you as well. We do not have enough inside storage to park a majority of our fleet. During the colder months we cram as much inside as possible utilizing not only the truck storage bays but the equipment repair bays as well. These vehicles include the first response type being the salt trucks, loaders and grader. In the equipment bays we put our trash and recycling vehicles. Everything else is outside and plugged into block heaters to keep the diesel engines warm. I would kill to have enough inside space for all of the equipment. Inside storage gets away from jump starting the vehicles, saves time in getting equipment on the road

in an emergency, preloading of materials for ice control, plows mounted. I could go on and on about safety of the personnel in clearing snow from the vehicle, running the engines to warm up the vehicles causing excess pollution and wear and tear, vehicle longevity. Hope this helps in getting your funding. If you need anything else please let me know**. Steve – Portsmouth NH**

Hi Bill, Just in case I did not say it when you went thru the new building, we park every vehicle inside in a drive through arrangement. It is especially convenient and safe when all our trucks are lined up inside with plows mounted. Our response times have dramatically improved and I believe there will be significant savings in vehicle replacement costs in the future. Good luck!
Rich Warrington - Bedford

All of our vehicles are parked inside. Before we built our new building we had to park our smaller plow trucks outside. This made it difficult to go out plowing in a timely manner. We had to take the time to clean our trucks of snow and warm them up and because they were diesel, we had to install several outlets outside to plug them in to keep the engines warm. We also had to empty the salt out after each event so the salt would not freeze in the box.
Gary Gramhofer - Gurnee, IL

Hi Bill,
We park very few of our vehicles inside. We just don't have enough room There are many reasons why it would be great for us to have inside storage for vehicles.
1 - Less wear & tear on the vehicles due to being out in the weather – I wish I had more data to back that up.
2 - Faster response in the winter time for winter operations. Simply put, we don't have to wait as long for diesel vehicles to warm up and we don't have to clean off the vehicles to get going. Less wasted time - usually on overtime.
3 - Reduced energy costs. Right now all diesel vehicles that are stored outside with block heaters for the winter. Our energy consumption just about triples in the winter time. 100-120 KWH May through Oct. Peak months - Dec through Mar we run 370-400 KWH. This is just for electricity. Most of the additional cost is for the block heaters.
If you use waste oil for heating, the additional cost for heated storage of vehicles should be negligible. We have 2 waste oil furnaces that heat the mechanics area (6 bays - 2 used for parts inventory), the body shop and another 3 bay garage. We have never run out of waste oil.
The City of Dover, NH recently built (I believe about 5 years ago) a new DPW facility with inside heated storage for all vehicles and it is a drive-thru facility. I remember a Dover City Councilor coming here to see our facility since he thought that their proposed design was excessive. I believe the final cost was about $5 million. Hope this helps!
Melodie Rochester NH