



## Department of Public Infrastructure

Ronald H. Labelle

Commissioner

Water

Wastewater

Highways

Engineering

Cemeteries

Park Maintenance

## CITY OF NEW BEDFORD

Jonathan F. Mitchell, Mayor

August 12, 2015

John Radcliffe, Chairman  
Conservation Commission  
133 William Street Room 304  
New Bedford MA 02740

Dear Mr. Chairman, Commission Members, and Conservation Agent,

The City of New Bedford Department of Public Infrastructure (DPI) is undertaking construction of a municipal salt shed for purposes of housing salt piles used during winter for de-icing application on public roads and paved areas in New Bedford. DPI as the applicant is proposing to develop a site for the salt shed on a parcel under the jurisdiction of the New Bedford Airport at 1484 Airport Road namely Map 123 on a portion of Lot 3. The salt shed being procured by DPI is a prepackaged kit manufactured by Clearspan (See attached brochure) and the outside dimensions of the structure footprint are 60 feet wide by 100 feet long. The basic design consists of a multiple arched truss frame anchored to a concrete wall foundation the top of which is covered with a high durability reinforced PVC fabric. The concrete wall foundation can be a permanent poured in place concrete foundation wall or it can be based on closely spaced concrete blocks placed over a graded structurally sound, well drained area.

### SITE DEVELOPMENT:

The proposed site is known to be a previously filled area where former tenant lease buildings will have been or are in the process of being demolished. DPI proposes to clear all trees and vegetation as needed and grub any unsuitable root ball and soft materials from the overall footprint of salt shed structure and asphalt pad area and excavate any unsuitable soils at depth that could cause settlement problems over time. DPI will then import, spread and compact appropriate sub-base materials suitable for supporting the salt shed structure, salt mix stockpiles and the expected heavy truck traffic into and out of the shed. DPI intends to raise the salt shed pad to sufficient elevation to avoid as much as possible the chance of flooding.

Upon achieving sub-base grade, DPI will, in accordance with Clearspan requirements, import, spread and compact dense graded processed gravel in six (6") inch lifts to 95% Proctor Density to a minimum depth of twenty four (24") inches creating a level pad with dimensions of 70 feet wide by 106 feet long intended to support a minimum soil bearing capacity of 2000 PSF as recommended by Clearspan. DPI will also extend the same dense grade material construction to six to eight (6'-8') feet further all around the level pad to create a drainage way around the structure with appropriate pitch away from the level pad therefore the overall area of new construction will have dimensions of 80 feet wide by 120 feet long and the actual shed structure area will be at a level above the drainage way. The level pad supporting the shed structure will be constructed with no greater than two (2") inch variation from level.

Upon completing placement of the supporting structural concrete blocks and the pressure treated plywood lining as specified by Clearspan, the inside of the shed area will be paved to the inside edge of the concrete blocks which will provide an impermeable asphalt pad on which the salt and salt mix piles will be placed.

The outside perimeter of the shed structure will also be paved with a pitch away from the structure to a perimeter berm and drainage will be incorporated along the berm edge to drain runoff from the shed footprint into a local collection system. It is noted that the runoff waters will generally be free of salt as the shed interior will be weather tight except for those times when the shed access door is open for use. During times of operational use, some salt is expected to be deposited in the driveway area leading up to the shed opening from the trucks, especially the truck tires. It is assumed that this salt is likely to be washed into the drainage collection system and be diluted with the remaining unsalted runoff. The overall drainage design for the site is based on ensuring that all covered portions of the salt shed are higher and dryer than any other extent of the support pad so that no rain would be allowed to runoff into the covered portion of the structure thereby mixing with salt.

The design plan accompanying this letter details the proposed work associated with this project. Proposed contours depicted on this plan are based on the minimal elevation information obtained from instrument survey locating the wetland flags. Complete and accurate topographic information will be obtained when further survey is accomplished after the demolition of the existing buildings. The proposed paved asphalt pad will be constructed to be higher in elevation than the driveway and ramp into the drive-in opening of the structure in order to ensure that heavy rain does not easily enter into the entrance when it is open for use. The perimeter access way around the three closed sides of the structure will channel runoff and redirect it into a drainage collection system and further into an on-site subsurface bio-retention system for purposes of recharging with some filtering treatment. Storm water runoff management for this site was analyzed and it is noted that the scope of work for this project is limited to constructing a structural pad to support the salt shed.

There is minimal area to use for recharge of runoff at the structure pad, therefore the driveway and maneuvering area will be utilized to install sufficient drainage recharge to address the runoff generated from the new structure. Given that the usage of the salt shed is predominantly wintertime where many of the precipitation events are in the form of snow there is an expectation that the most significant impact of runoff will occur during the non-winter months when the salt shed will be closed and unused.

This project is not exempt from the Massachusetts DEP Storm Water Standards and is believed to meet the definition found in Standard 7 (Condition 1) with respect to re-development of an existing drainage system and the applicant seeks to make reasonable efforts to comply with the intent of Standard 7 and meet to the extent practicable Standards 2, 3, 4, 5, and 6 given the site constraints associated with this project.

The following narrative elaborates upon the applicant's planned effort to meet these standards to the extent practicable. The following explanations coincide with the pertinent sections in the Stormwater Management Form accompanying this letter.

**Standard # 1:** The limited scope of this project will not create a new point discharge into wetlands or Commonwealth waters of untreated storm water.

**Standard # 2:** The post development impervious drainage area is taken into consideration for sizing the recharge system. The recharge capacity for a 10 year storm will address runoff for most precipitation events and the overflow from the bio-retention system will sufficiently treat collected runoff for all but the most severe rain storm events which tend to occur in non-winter time periods.

**Standard #3:** This project embraces the use of LID measures and will recharge collected runoff for a design 10 year storm event.

**Standard # 4:** In addition to the collection and treatment of runoff from the subject site, the City's DPI is committed to long term scheduled street sweeping of the driveway in order to minimize the accumulation of salt that may drop from the trucks using the facility. The sub-surface bio-retention system will also be designed to be maintained with periodic cleaning and debris removal.

**Standard # 5:** Given that this project will result in a substantial but covered accumulation of road salt with the potential to act as a heavy pollutant load to the adjacent wetlands, the City proposes to construct the salt shed in strict accordance with all the manufacturer's recommendations. In addition the City will seek to apply Best Management Practices as documented within the salt storage and handling industry for operating and maintaining the salt shed system including long term storage practices and cleaning of the access road and driveway.

**Standard #6:** This standard is believed to be not applicable as the storm water discharge area of concern is believed to not be a critical area as defined in the Storm Water Handbook.

In addition to the Stormwater Standards there were several concerns about the salt shed design that will be addressed with this report. The material specifications for the salt that is to be imported and stockpiled will have to be researched using the MSDS system for trace contaminants considered to be hazardous however, it should be understood that the bulk salt is supplied by an industry distribution system that has historically provided many municipalities with road salt and regardless of findings of trace contaminants in the salt, there is little likelihood that road salt will be available from other less contaminated sources.

The local wetlands are recognized as a resource that must be protected. To that end the driveway and pad areas supporting the shed structure will be an impervious asphalt surface with local drainage intended to collect and retain flowing runoff and allow re-infiltration to the groundwater. It should be understood that street salting and sanding operations during winter emergency response are designed to deliberately distribute loaded salt and or salt/sand mix onto the roadways and Airport Road is typically treated with salt/sand mix. Although truck loading is intended to occur within the shed from a dry pile it should be understood that the truck tires will generally be wet with partially melted snow and ice materials that are already mixed with salt and sand and it is not practical to attempt to clean the truck tires in an effort to remove salt from the tires.

The shed structure design has been developed through a relatively lengthy industry practice and appears to incorporate durable materials and a robust structural support system and hardware. The design will be reviewed to ensure that it meets Massachusetts Building Code and specifically that it is capable of sustaining snow loads, hurricane force winds and blizzard condition that could be expected in this area. DPI plans to perform annual inspection of the structure to verify continued integrity. In the

event of a catastrophe resulting in the loss of the shed structure when salt is stockpiled, DPI will have a plan in place to load and transport the exposed salt and stockpile it elsewhere in the city away from resource areas.

Please refer to the design plan for other detail not mentioned in the above narrative. Also please note that prior to any construction, a silt fence and hay bale line will be placed in accordance with the design plan and other measures required by the Order of Conditions will be complied with.

Respectfully submitted,

David Fredette  
City of New Bedford Engineering Department

CC: Ronald Labelle, Commissioner DPI  
DEP Southeast Region  
MA Division of Marine Fisheries