CN Milton Logistics Hub – Using Reinforced Plastic Fire Water Tank Instead of Steel

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1.0 INTRODUCTI7ON

As part of the Canadian National Railway Company's (CN) Milton Logistics Hub (the Project), CN is proposing to revise the fire water tank system for the administration building from a 35,000-US gallon (USGal) steel tank system to a 35,000-USGal fibre reinforced plastic (FRP) tank. The use of a 35,000-USGal steel tank system, designated for fire protection was described in Section 3.3 and 3.4 of the Environmental Impact Statement (EIS) submitted to the Canadian Environmental Assessment Agency (now Impact Assessment Agency of Canada) pursuant to the *Canadian Environmental Assessment Act, 2012* and ultimately approved through issuance of the Decision Statement by the Minister of the Environment and Climate Change on January 21, 2021 (as amended on July 26, 2022).

In accordance with Condition 2.16 of the Decision Statement, CN is providing a description of the proposed fire water tank, the environmental effects that may result (if any), including how these may differ from the environmental effects of the Designated Project identified during the environmental assessment, and the mitigation measures and follow-up programs to be implemented by CN. This submission also considers the need for any modified or additional measures to mitigate any environmental effect that may result from the proposal and any modified or additional follow-up requirements.

Details regarding this proposal are provided in Section 2.0. A description of the existing environmental conditions within the area is provided in Section 3.0. A description of the potential environmental effects, proposed mitigation measures, and follow-up programs associated with the proposed fire water tank is provided in Section 4.0.

In short, the transition from a steel tank to an FRP tank is a design improvement that would serve the same purpose while having no substantive difference in potential impacts to the environment, proposed mitigation, or follow-up programs.

2.0 PROPOSED FIRE WATER TANK

The administration building and maintenance garage are proposed as part of the Project to provide office space, worker facilities, and a building for maintenance and washing of yard equipment and vehicles. The design of the administration building and maintenance garage will incorporate a self-contained fire protection system using water stored in underground tanks, with fire water storage tanks and associated fire pump systems to meet fire protection requirements.

In accordance with fire safety requirements outlined in the *Ontario Building Code*, the fire water storage and supply system must ensure a reliable and sufficient water supply to meet emergency firefighting needs. To satisfy this demand, a total fire water storage volume of 35,000-USGal and anticipated flow rate of 3,600 litres per minute for a minimum of 30 minutes, is required. One (1) 35,000-USGal steel tank was originally described in the EIS (Sections 3.3 and 3.4).

The fire protection system shall be designed to meet the following Standards:

- NFPA 20 – Stationary Pumps for Fire Protection
- NFPA 22 – Water Tanks for Private Fire Protection
- NFPA 1142 – Water Supplies for Suburban and Rural Fire Fighting
- NSF/ANSI 61 – Drinking Water System Components – Health Effects

No changes are proposed to the size or capacity of the underground tank; however, CN is proposing to switch from the one (1) 35,000-USGal steel tank to one (1) 35,000-USGal FRP tank.

The fire water tank will include:

- A dry hydrant assembly to allow connection to fire department apparatus as per NFPA 22.
- Water heaters and temperature sensors to prevent freezing and ensure system operability in cold conditions.

A comparison of the characteristics of the steel and FRP tank options is provided in Table 1.

Table 1: Comparative Assessment of Steel and FRP Fire Water Tanks

Components	Steel Tank	Proposed FRP Tank
Tank Size	• 1 x 35,000 USGal horizontal steel tank as noted in EIS s.3.4.1.5 • Approximate dimensions: 15.0m x 3.6m D, or 18.8m L x 3m D	• 1 x 35,000 USGal horizontal round FRP water tank • Approximate dimensions: 15.0m x 3.6m D, or 18.8m L x 3m D
Burial Depth	• Max. 1.5m	• Max. 1.5m
Installation requirements	• Prefabricated or site assembled. • Nozzles can be added or welded at the factory. • May require a concrete pad or weight to prevent flotation in high groundwater. • Requires internal and external coatings to reduce corrosion.	• Prefabricated. • No on-site nozzle modifications: all fittings must be factory-installed. • May require a concrete pad of weight to prevent flotation in high groundwater. • Fully sealed with NSF-rated resin or coating on the inner surface.
Operational Considerations	• Corrosion protection must be maintained. Coating damage may require repair.	• Minimal maintenance. Cleaning and inspection are straightforward.

The FRP tank would provide an easy and quick installation that is easy to operate and maintain overall. The FRP tank provides the opportunity to reuse or repurpose the tank in the event that municipal services are established at the CN Milton Logistics Hub.

3.0 EXISTING CONDITIONS

The environmental conditions that exist in and adjacent to the Project Development Area (PDA) prior to Project construction were described in the EIS. As noted above, no new ground disturbance that was not already previously considered in the EIS is proposed. The lands that would be affected by construction of the fire water system have already been disturbed by ongoing Project construction activities.

4.0 POTENTIAL FOR ENVIRONMENTAL EFFECTS

Switching from a steel to FRP tank for the fire water system will have no new environmental effects during construction. The tank installation location and construction methods will remain the same as originally planned. Due to its longevity relative to a steel tank, the FRP tank will last longer and therefore require less frequent replacement over time.

Construction

No change in effects to archaeological resources are predicted and no additional assessment of archaeological potential is required since the entirety of the PDA was covered in support of the EIS.

No work will occur in or within proximity to the habitat of any species at risk (SAR). Areas previously identified as habitat for Bobolink and Eastern Meadowlark no longer exist within the footprint of the Project and have already been compensated for through the creation of offsite grassland habitat targeting these species. No additional migratory bird habitat or SAR habitat would be affected. Further, there are no woodlands or wetlands that would be affected.

Effects to groundwater flow and patterns are not predicted to change since the depth of tank will remain the same. Similarly, effects on surface water flow (quantity) and quality are not predicted to change since all work will occur in the PDA and no new crossings of existing watercourses are required to implement this change.

Construction activities and equipment used to install the FRP tanks will be the same for the steel tank. Therefore, no change in air emissions or noise generated during construction activities are predicted.

Operations

An FRP tank will require less maintenance and will provide greater longevity relative to a steel tank due to the potential concerns with corrosion of a steel tank that will be reduced with this option. The FRP tank will be coated with NSF rated resin to resist degradation and structural integrity, providing an added layer of protection against corrosion.

Summary

The switch from a steel tank to an FRP tank will result in similar environmental effects during construction as were previously contemplated during the environmental assessment and reduced environmental effects during operations.

4.1 MITIGATION

Since effects will be similar or in some cases reduced, no new mitigation measures are warranted. The already planned mitigation measures to address potential effects on the environment that may arise from the installation of the designated fire water system include:

- Maintaining construction activity within the limits of the PDA
- Completion of construction during day-time hours
- Continued implementation of the Environmental Protection Plan

Additional mitigation measures generally implemented during construction of the Project will further serve to mitigate potential effects associated with the installation of the FRP tank.

Further, the Decision Statement for the Project already includes conditions that address the mitigation measures that would be necessary and appropriate for the fire water tank installation. Relevant conditions include but are not limited to, conditions pertaining to groundwater quality (5.11 to 5.13), delineation of the construction area (6.5), soil management (6.6 to 6.9), emissions controls (4.11, 4.13), noise (4.6, 4.8), procedures for protection of archaeological and cultural resources (including human remains) (11.8 to 11.10), and several others.

4.2 FOLLOW-UP MONITORING

No new follow-up programs or changes to the existing follow-up programs are warranted. Monitoring associated with the existing follow-up programs is sufficient to verify the accuracy of the environmental assessment and determine the effectiveness of mitigation measures.

5.0 CONCLUSION

Based on the existing environmental conditions within the areas affected by the proposed change to the designated fire water system, and with the implementation of existing mitigation measures, no new environmental effects are expected. In addition, the FRP tank will last longer and therefore reduce future effects.