



**STAFF REPORT
ACTION REQUIRED
with Confidential Attachment**

Consolidated Warehouse Strategy

Date:	October 16, 2017
To:	TTC Board
From:	Chief Executive Officer
Reason for Confidential Information:	This report is about labour relations or employee negotiations.

Summary

The purpose of this report is to seek Board approval of the proposed consolidated warehouse strategy as set out in the report below.

The TTC currently utilizes four warehouses located across the City to address warehousing needs. Two of the warehouses used, which are filled to capacity, are owned by the TTC and located on the Duncan and Greenwood properties.

The other two warehouses that comprise 78% of total TTC warehouse space are currently leased by the TTC at two central locations with these leases set to expire in the coming years as follows:

- 1) Downsview – 2020, early termination option 2019
- 2) Don Valley Parkway – 2023, early termination option 2022

The two current leases will not be renewed by the landlords as the properties are slated for redevelopment. To ensure that TTC is in a position to continue to address warehouse needs beyond the year 2020, staff are proposing a consolidated warehouse strategy that will provide 550,000 square feet of warehouse space at one central location (2233 Sheppard Avenue West, Toronto).

This new location will facilitate the modernization of TTC's warehouse operations and distribution processes by incorporating technology, automation, and industry Best Practices for Materials Management staff.

This consolidated warehouse strategy will provide the TTC with an additional 90,000 square feet of warehouse space to accommodate future growth and provide improved staging areas to support planned efficiencies in materials management operations, while remaining cost neutral with our current warehouse lease and ownership costs as compared in 2017 dollars.

In addition to an increase in available warehouse space at comparable cost, the consolidated warehouse lease will also provide the following benefits:

- Enable the TTC to advance on the following initiatives:
 - ✓ Implement preventative maintenance programs for all 3 modes of operations (bus, subway and streetcar) through the provision of adequate space to provide staging areas to kit materials;
 - ✓ Utilize available technology and automation to its full extent to better manage re-order points, reducing inventory levels consistent with AG recommendations;
 - ✓ Reduce time and costs associated with transporting inventory across four warehouses;
 - ✓ Allow the TTC to implement processes aimed at doubling turn rates, reducing both inventory levels and carry costs;
- Make 69,000 sq. ft. of existing space within internal facilities available for other TTC needs, resulting in the avoidance of future lease costs;
- Accommodate future growth in TTC inventory requirements; and
- Result in service improvements (fill rates).

Recommendation

It is recommended that the Board:

1. Approve the recommendations set out in the confidential attachment; and
2. Authorize the information contained in the confidential attachment to remain confidential in its entirety as it contains information pertaining to labour relations or employee negotiations.

Implementation Points

Upon Board approval of the proposed consolidated warehouse strategy, staff will negotiate the necessary transactions to deliver the warehouse strategy in accordance with TTC's policies, practices and procedures.

Financial Summary

Financial details are outlined in the confidential attachment to this report.

The Chief Financial Officer has reviewed this report and agrees with the financial impact information.

Accessibility/Equity Matters

Accessibility/Equity Matters will be addressed as part of the implementation of the consolidated warehouse strategy.

Decision History

At the Board Meeting of July 29, 2015, a Warehouse Needs Analysis presentation was received.

https://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2015/July_29/Reports/Warehouse_Needs_Analysis.pdf

At the Board Meeting of July 12, 2017, a report for the Proposed Lease of Property of TTC Warehousing was received by the Board and the confidential recommendations were approved:

https://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2017/July_12/Reports/5_Proposed_Lease_of_Property_for_TTC_Warehousing.pdf

Background:

In 2015, the TTC hired Mitchell Rothesay Logistics to conduct a study that looked at various warehouse design options for the TTC, including a consolidated warehouse with Vendor Managed Inventory (VMI) for general parts and outsourcing of bus parts to a third party logistic provider (3PL).

Four Network Design options were analyzed by Mitchell Rothesay as follows:

- 1) Utilization of two Main Warehouses with Vendor Managed Inventory (VMI) for General Hardware
- 2) Utilize one Main Warehouse with VMI for General Hardware
- 3) Utilize one Main Warehouse with VMI for General Hardware and the Outsourcing of Bus parts to a third party logistics provider
- 4) Utilize One Main Warehouse with no VMI and no outsourcing to a third party logistics provider

Option #2 was recommended as the most cost effective means to consolidate TTC's warehouse operations. This option will drive economies of scale and provide the necessary space to store the inventory more efficiently and effectively, while reducing overall warehouse costs.

In addition, the Mitchell Rothesay study recommended the following opportunities for warehouse optimization:

Materials Management Processes

Current materials management processes for receiving, storing, picking and distributing vehicle maintenance parts requires modernization. Improvements to the current warehouse layout will increase available storage space, reduce stocking time and product damage. The new consolidated warehouse will facilitate the efficient use of floor space to pre-pick orders for subsequent customer pick up. Currently, our warehouses are too congested to allow for the proper pre-ordering and staging of field orders. Initiatives such as a vendor compliance program will significantly reduce the time consuming inspection and returns process by holding the vendors responsible for quality assurance.

TTC's material management processes lack standardization across the four current warehouses and will be updated to reflect Best Practices with the ultimate goal of product being inventoried the same day it is received to avoid congestion in staging areas and aisles.

Inventory Levels

The current turnover ratio for TTC warehouse items is 1 turn/year which is significantly lower than the industry. A turn of one means that on average the TTC carries a one year supply of inventory. Best Practice is to achieve a level of 3 turns/year, which would result in the TTC carrying a third of the annual inventory requirements at any point in time. Staff believe 3 turns is an aggressive target based on the nature of our inventory needs but have begun to implement process changes that will allow the TTC to target an average of 2 turns per year by 2020. This change will reduce inventory levels, carrying costs and the requirement for warehouse storage space (as well as the associated operating costs).

Distribution Process

Currently, parts are shipped on TTC trucks from the main warehouses to the central and distributed stores. Shipment is done during the day, proving very inefficient because of the congested roads within Toronto. Therefore, the efficiency of the distribution process will be improved by pursuing switching to delivery from 10 pm to 6 am when the roads are significantly less congested.

In addition to the above recommendations, staff also assessed the impact of the following programs on future warehousing needs:

Preventative Maintenance Program

All 3 modes of operations (bus, subway and streetcar) are working towards preventative maintenance activities. The target is to change from a fix on failure maintenance program to a preventative & predictive maintenance program. Under the new maintenance model, operations groups will be aiming for a ratio of 80:20 preventative to corrective maintenance, allowing for the preplanning of a majority of maintenance activities. The implementation of a Preventative Maintenance program would drive “just in time” (JIT) parts deliveries to the central warehouse location, leading to a reduced need for warehouse space. However, this reduction in required warehouse space will be offset by the need for additional space to compile the kits of material for each Preventative Maintenance program.

The Auditor General also emphasized the need for aligning the timing of our parts deliveries to our vehicle overhaul timelines. They concluded that the TTC will be able to reduce the number of parts inventoried for rebuild programs through better inventory planning.

Improved Inventory Planning, Vendor Managed Inventory

Properly setting part re-order points can avoid the build-up of excess inventory, and subsequently ease the demand for warehouse space. By taking into account the parts’ usage rate, set safety stock levels, vendor lead times, and project start dates, the TTC will be able to better set the correct order quantities and adjust the delivery time to when they are actually needed.

Expanding our Vendor Managed Inventory program will also help us reduce the need for warehouse space in the long run by having the vendor stock more parts for the TTC at their supplier sites.

Conclusion

The proposed size of the consolidated warehouse considered the optimal space required to support anticipated inventory growth requirements, the implementation of our Preventative Maintenance Program, improved ordering processes, and the roll out of an expanded Vendor Managed Inventory program.

It is recommended that the Board approve the implementation of this strategy to consolidate the four main warehouses into one new, approximately 550,000 sq. ft. leased facility.

The next step is obtaining Board approval for the lease of the new consolidated warehouse at 2233 Sheppard Avenue, Toronto.

[Authorization to Lease – Materials and Procurement Warehouse](#)

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Attachment

Confidential Attachment
Appendix A - Confidential
Appendix B - Confidential