

TORONTO TRANSIT COMMISSION REPORT NO.

MEETING DATE: July 11, 2007

SUBJECT: WILSON CARHOUSE MODIFICATIONS FOR THE TORONTO
ROCKET
TORONTO GREEN DEVELOPMENT STANDARD

RECOMMENDATION

It is recommended that the Commission approve:

1. Endorsement of measures to conform to the minimum requirements of the Toronto Green Development Standard, where feasible, in the design for the Wilson Carhouse Modifications for the Toronto Rocket project, noting that this would impact capital costs on this project in the order of \$ 0.8M based on these standards.
2. Authorizing staff to seek approval for the required additional funding as part of the 2008-2012 Capital Program. As the facility modifications have to be completed prior to the arrival of the Toronto Rocket, staff will be proceeding with the design and will report back to the Commission to advise of the impacts at the time of the award of the contract.
3. Forwarding this report to the Deputy City Manager and Chief Financial Officer, the City Manager and the City Budget Committee for information.

FUNDING

Funds for the Wilson Carhouse Modifications for the Toronto Rocket are included in program 3.9 Buildings and Structures, as set out on pages 835-838, (State of Good Repair/Safety Category), of the TTC 2007-2011 Capital Program, which was approved by City Council on March 7, 2007.

However no funds are available to conform to the requirements of the Toronto Green Development Standard that exceed the TTC Design Standards. Staff will seek approval for the additional required funding, currently estimated as \$ 0.8M, as part of the 2008-2012 Capital Program. Included in this estimate are \$ 0.3M to implement a light coloured (cool roof) which was referenced in the *Green Roof Feasibility Report – Roofing Rehabilitation Program* report that was approved by the Commission at its June 13, 2007 meeting.

The potential impact of conforming to these standards on the five year Capital Program has not yet been determined. It will be the subject of a future Commission Report.

BACKGROUND

The Wilson Carhouse Modifications for the Toronto Rocket project (Wilson Carhouse Modifications) include the work necessary to allow the maintenance of the new six car fixed formation train. Wilson Carhouse had been designed for the maintenance of two car married pairs, and can only accommodate six car trains if they straddle the central walkway, impeding emergency egress and daily operations, or extend beyond the building envelope. The Carhouse modifications will add two new six car maintenance tracks to the east, and extend the south end by two car lengths allowing cleaning, wheel truing and truck changes on the Toronto Rocket. The project includes a training facility which will contain the Toronto Rocket simulator.

This report identifies measures to be undertaken to generally conform to the minimum requirements of the Toronto Green Development Standard (GDS), where feasible.

DISCUSSION

An assessment of the work required to conform to the minimum requirements of the Toronto GDS, where feasible, for the Wilson Carhouse Modifications project was conducted. The areas outlined in the Toronto GDS are:

- Air Quality
- Greenhouse Gas Emissions/ Energy Efficiency
- Water Quality
- Water Efficiency
- Solid Waste
- Ecology

The development features for each area were examined and the measures below were proposed to be included in the project. A life cycle cost analysis (LCCA) was performed for the measures with a significant cost impact and where savings were demonstrated, the measure was included.

1) Air Quality

- A minimum of 10% of materials will be supplied within 800 km of project. (\$ 5k)
- Provide 12 bicycle spaces. (\$ 10k)
- During construction, dust will be controlled through dust emissions control plans. (\$ 20k)
- CFC's and halons will not be used in any of the systems installed.*
- Light coloured roofing (cool roof) will be used. The LCCA demonstrated that cool roofs would generally result in approximately 5% savings as compared to the standard TTC built up roof. (\$ 300k)
- Light coloured walkways will be used where required. (\$ 5k)
- Comply with thermal comfort standards (ASHRAE 35-2004) to ensure a comfortable indoor climate.*
- Comply with ventilation standards (ASHRAE 62-2004) to ensure clean and fresh indoor air.*
- Water based paints and sealants will be used to minimize sources of air contaminants. (\$ 5k)

2) Greenhouse Gas Emissions/ Energy Efficiency

- Design to achieve 25% efficiency improvement over code to minimize demand for energy. (\$ 400k) The LCCA demonstrated that the addition of Energy Recovery Ventilators (ERV's) would result in approximately 1% savings.
- Use Energy Star compliant light fixtures.*
- Adequate system commissioning will ensure the building systems function as designed.*

3) Water quality

- During construction, adhere to Greater Toronto Area Conservation Authorities on site erosion and sediment control guidelines.*

4) Water Efficiency

- Install low-flow toilets, urinals and faucets to reduce demand for potable water. (\$ 5k) The LCCA demonstrated that low flow fixtures would result in approximately 7% savings.

5) Solid Waste

- Install storage for recyclable materials and organic waste to facilitate waste reduction and efficient processing.*
- Provide bins to facilitate recycling and/or salvaging of up to 50% of construction and demolition debris in order to reduce construction waste going to landfill. (\$ 50k)

6) Ecology

- Design light fixtures to avoid directly lighting the sky in order to reduce night time glare.*

Items marked with an (*) indicate no additional cost items as they are already part of TTC Design Standards.

A few of the Toronto GDS minimum requirements were deemed not feasible. These are:

1. The GDS recommends using light coloured materials for 50% of the hardscape. Only 10% was found to be feasible because of maintainability issues.
2. The GDS recommends removal of 80% of suspended solids from storm water leaving the site. It also recommends to re-use rainwater. The installation of a cistern was considered for the carhouse but found not feasible because of space limitations and high cost to retrofit the existing washrooms. It was not feasible for the training facility as the LCCA demonstrated that no savings would result over the life of the cistern. However, piping will be installed in the training facility to allow for future installation of a cistern.

The design of the project is 30% complete and expected to be ready for tender by year end. The construction is expected to start in 2008 with the last phase of the project ending in 2010. Some of the above measures are already included in the design. However to include the remaining measures identified, additional Capital funding of approximately \$ 0.8M in 2008 through 2010 is required.

JUSTIFICATION

In order to conform to the minimum requirements of the Toronto GDS, where feasible, staff will seek approval for the additional funding of \$ 0.8M as part of the 2008-2012 Capital Program.

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