

TO: Business Board

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DATE: October 8 for November 9, 2009

AGENDA ITEM: 5(c)

ITEM IDENTIFICATION:

Utilities Infrastructure Renewal for the St. George Campus

JURISDICTIONAL INFORMATION:

Pursuant to Section 5.2.(b) of its Terms of Reference, the Business Board approves expenditures for, and the execution of, approved Capital Projects.

PREVIOUS ACTION TAKEN:

A report tabled at the Planning and Budget Committee in May 2008 and later approved by Governing Council described the imminent problems of power shortages in the southeast quadrant of the St. George campus. That report concentrated on re-feeding the Wallberg Building but noted that a subsequent plan would be drafted to address the same issue at the Medical Sciences Building.

HIGHLIGHTS:

The continual growth of research and academic activities on campus has put a strain on the existing electrical distribution system that supports both the facilities themselves and the cooling systems needed to keep them operating. New buildings necessitate the extension of district energy systems to supply heat and cooling.

This program can be broken down into three projects:

1. The construction of a new electrical feeder from the University's system to the Medical Sciences Building. This will allow MSB to be separated from the Sandford Fleming Building feeder loop, making more power available to both over-subscribed buildings. The Galbraith Building, which is also at capacity, can be sub-fed from Sandford Fleming. The estimated cost is \$5 million.
2. The chiller plant that serves most of the buildings in the southeast quadrant of the campus is not able to provide sufficient capacity during the hottest parts of the summer. An additional chiller and cooling tower would improve the existing problem as well as provide capacity to serve new buildings planned for this area. The estimated cost is \$3.55 million.

3. Most buildings on campus are provided with efficiently produced heat from the Central Steam Plant at Russell Street. While this plant has sufficient nominal boiler capacity to serve the new facilities that are planned to be built, bottlenecks exist in the water treatment capacity and emergency oil storage that effectively reduce the amount of steam that can be distributed. The estimated cost for correction of these issues is \$2.6 million.

FINANCIAL AND/OR PLANNING IMPLICATIONS:

In order to allow the enlargement of the research mission of the University and the continued servicing of all facilities with reliable, efficient energy sources a substantial capital investment is required now.

RISK IMPLICATIONS:

Failure of any segment of the electrical feeder loop that serves Sanford Fleming and Medical Sciences as it stands now would necessitate load shedding in order to partially supply the buildings while a full repair is implemented. After the work described above, such an emergency situation would be dealt with by relatively quick switching and no load shedding would be needed.

While it may be an understandable situation to have insufficient cooling capacity during periods of extreme temperatures in some buildings, it is less acceptable in buildings that specialize in medical research.

Failure to remediate the underground fuel tank that provides back-up supplies to the central plant would result in the forced decommissioning of the tank under the orders of the Technical Standards and Safety Authority.

RECOMMENDATION:

It is recommended that:

Subject to Governing Council approval of the project,

- THAT the Vice-President, Business Affairs be authorized to execute the Utilities Infrastructure Renewal program of projects, at a total cost not to exceed \$11.232 million, with funding as follows:
 - \$5 million from utilities infrastructure renewal funds and
 - the balance a loan to be repaid by increasing the annual utilities budget by \$720,000.
- THAT the Vice-President, Business Affairs be authorized to arrange such interim and long-term financing as required, from either internal or external sources.