

Clause embodied in Report No. 1 of the Toronto South Community Council, as adopted by the Council of the City of Toronto at its meeting held on January 27, 28 and 29, 2004.

4

**Review of Street Lighting System -
Palmerston Boulevard between Bloor Street West
and College Street
(Trinity-Spadina, Ward 19)**

(City Council on January 27, 28 and 29, 2004, adopted this Clause, without amendment.)

The Toronto South Community Council recommends that:

- 1. the Commissioner of Works and Emergency Services be directed to upgrade the historical existing street lighting system on Palmerston Boulevard between Bloor Street West and College Street, by refurbishing the existing cast iron poles and replacing the underground system in consultation with the Ward Councillor; and**
- 2. the appropriate city officials be directed to give effect thereto.**

The Toronto South Community Council submits the report (December 18, 2003) from the General Manager, Transportation Services:

Purpose:

The purpose of this report is to present the results from our review of the condition of the street lighting system on Palmerston Boulevard between Bloor Street West and College Street.

Financial Implications and Impact Statement:

There are two options available to improve the condition of the street lighting system on Palmerston Boulevard:

Option 1

The cost of refurbishing/retaining the existing cast iron poles is estimated at \$245,000.00 every ten years. Over a 50-year life cycle, the total maintenance cost of this option is estimated at \$1,225,000.00.

Option 2

The cost of replacing the cast iron poles with cast aluminum poles is estimated at \$295,000.00. There would be no associated maintenance costs over the same 50-year life cycle. The difference in the total cost of refurbishing/retaining versus replacing over a 50-year period is \$930,000.00.

For both options, the underground system requires replacement at an estimated cost of \$300,000.00. This project would be constructed over a two-year period. Sufficient funds are available in the Transportation Services Division's 2004 Capital Estimates for the first year of construction.

Recommendation:

It is recommended that:

1. based on the substantial life cycle cost savings estimated to be achieved over a 50 year period, the existing street lighting system on Palmerston Boulevard be upgraded by replacing the cast iron poles with replica cast aluminum poles and replacing the underground system; and
2. the appropriate city officials be directed to give effect thereto.

Should Council decide that the existing poles be retained due to their historical nature and notwithstanding the higher cost implications, then the following recommendations should be adopted in lieu of those set out previously:

1. staff be directed to upgrade the existing street lighting system on Palmerston Boulevard between Bloor Street West and College Street, by refurbishing the existing cast iron poles and replacing the underground system; and
2. the appropriate city officials be directed to give effect thereto.

Discussion:

Existing Conditions

Palmerston Boulevard between Bloor Street West and College Street is a two-lane residential roadway with sidewalks on both sides. The lighting for both the roadway and sidewalks is provided by 64 poles, 32 on each side of the roadway. These poles are decorative cast iron poles that were originally installed in the early 1900's. The system has undergone numerous rehabilitation and maintenance activities over the years including most recently, a conversion from an incandescent to a Metal Halide light source in 1993/1994 and painting and repairing of the poles in 1995.

Due to some ongoing maintenance concerns with this unique lighting system, prompted not only by staff but from residents as well, a detailed assessment of the street lighting system on Palmerston Boulevard was conducted in November 2002. It was determined that the system requires significant

upgrades. The underground wiring does not meet current electrical safety standards. Some poles are cracked, rusty, have paint peeling and/or have minor structural defects. Some of the globes on top of the poles have holes, cracks or appear to have melted in certain areas. From a maintenance access perspective, some pole bases are buried while some of the handhole covers are in poor condition or are missing.

Perhaps the most important issue is the fact that the illumination levels which the system provides do not meet the current industry guidelines as established by the Illuminating Engineering Society (IES) and as adopted by City staff. The minimum recommended lighting level for a roadway such as Palmerston Boulevard is 4.0 lux. Lighting levels below this value place the City at risk from a liability perspective. The assessment conducted in late 2002 recorded actual lighting levels which ranged between 2.3 and 2.6 lux, measured at several points along the street.

In early 2003 the City's Street and Expressway Lighting Unit reviewed two options for the upgrading of the Palmerston Boulevard street lighting system. These options were to refurbish and retain the existing poles or to replace the entire system. In either case it was clear that the underground system (duct, wiring, pole bases) would have to be replaced.

Refurbish/Retain Option

This option would include the removal of the existing poles (to be done in small quantities with temporary replacements), sandblasting and powder coating of the poles, and reinstallation of the refurbished poles along with replacement of the globes. It is estimated that this process would cost \$245,000.00 for all 64 poles (approximately \$4,000.00 per pole).

There are two main concerns with this option; namely, the resulting illumination levels and the future maintenance costs. As described earlier, the existing system does not provide the required illumination level and may continue to fall short of the City's standards if the current pole height, pole spacing and wattage are retained. This may put the City at risk should there be incidents where lack of lighting is cited as a contributing factor to a roadway or personal safety issue.

In addition, based on our experience the refurbished poles will once again deteriorate over time and it is estimated that they would require a similar refurbishment process within a ten-year timeframe. Therefore, assuming a 50-year life cycle, the total maintenance costs are estimated at \$1,225,000.00.

Replacement Option

The alternative to refurbishing the existing poles is to replace the cast iron poles with a cast aluminium pole. A pole could be manufactured which would provide the aesthetics of the existing pole but would provide the required illumination levels and be less costly to maintain.

The City conducted a similar replacement of cast iron poles in 2002 on Chestnut Park Road. The poles were cast to replicate the existing poles, but were manufactured approximately 450 mm taller in order to achieve the required illumination levels. The result was the same "look and feel" for the residents while eliminating any concerns the City had regarding lighting levels. A similar process could occur on Palmerston Boulevard.

The cast aluminum poles would be less costly to maintain over the long term. It is estimated that these poles would last 50 years without requiring maintenance. Factoring in the initial capital cost of installation (\$295,000.00), the option to replace versus refurbish the poles would realize savings of approximately \$930,000.00 over the 50-year period (approximately \$14,500.00 per pole).

Consultation Process

In the summer of 2003 a group of stakeholders met to discuss the issues surrounding the street lighting system on Palmerston Boulevard. Facilitated by Councillor Pantalone, stakeholders included representatives of the Palmerston Area Ratepayers Association, the City's Street and Expressway Lighting Unit, Heritage Preservation Office and District Traffic Operations office. Street and Expressway Lighting staff presented a recommendation of the pole replacement option citing the need to adhere to current lighting level standards as well as the long-term maintenance cost savings. Heritage Preservation staff preferred the refurbish/retain option given the historic value of the existing poles. The residents originally preferred the option to retain but following a visit to Chestnut Park Road, agreed that the cast aluminum poles were acceptable to them from an aesthetic point of view.

At the end of the summer of 2003, based on this consultation process the consensus of the group was to initiate the detailed design process for the replacement option with a view to tendering a contract in early 2004.

On November 26, 2003 at the Annual General Meeting of the Palmerston Area Ratepayers Association, the issue of the street lighting system on Palmerston Boulevard was the main topic of discussion and included a presentation from staff of Street and Expressway Lighting. A motion approved at the meeting indicated that the general consensus of those residents in attendance was to retain the existing cast iron poles.

Conclusion:

The existing street lighting system on Palmerston Boulevard is in a deteriorated state and requires upgrading. In order to allow the system to meet current electrical safety requirements, achieve current standards for roadway/pedestrian area lighting levels and in order to make most efficient use of street lighting maintenance funds, it is recommended that the existing underground system be replaced and that the existing cast iron poles be replaced with cast aluminum replicas.

Contact:

Martin Maguire, P. Eng.
Manager, Street and Expressway Lighting
Phone: (416) 392-5243
Fax: (416) 397-5825
E-mail: mmaguir@toronto.ca