

CITY OF VAUGHAN

EXTRACT FROM COUNCIL MEETING MINUTES OF MAY 22, 2007

Item 1, Report No. 25, of the Committee of the Whole (Working Session), which was adopted without amendment by the Council of the City of Vaughan on May 22, 2007.

**1 VAUGHAN URBAN DESIGN AWARDS
FILE 14.56**

The Committee of the Whole (Working Session) recommends:

- 1) That the recommendations contained in the following report of the Commissioner of Planning and the Commissioner of Economic/Technology Development and Communications, dated May 8, 2007, be approved;**
- 2) That the Urban Design Awards Program panel of jurors consist of 1 outside urban designer/planner, 1 outside landscape/architect, 1 outside architect, City Manager, Commissioner of Planning and two City Council representatives on a rotating basis; and**
- 3) That Councillor Carella and Councillor Yeung Racco be appointed City Council representatives on the panel of jurors for 2008.**

Recommendation

The Commissioner of Planning and the Commissioner of Economic/Technology Development and Communications recommends:

1. THAT changes to the current City of Vaughan Urban Design Awards program as identified in this staff report, BE APPROVED;
2. THAT the recommended changes to the Urban Design Awards program commence with the 2008 Urban Design Awards;
3. THAT the Urban Design Awards program and gala hosting budget for the 2008 Urban Design Awards be included in the Development Planning Department's 2008 operating budget, and that a request be referred to the 2008 budget deliberations; and
4. THAT staff pursue corporate sponsors for the 2008 Urban Design Awards.

Economic Impact

The funding requirement associated with the Urban Design Awards program and gala hosting for the 2008 Urban Design Awards includes: poster design, printing, brochure and application, judges honorarium, awards, jury report design, venue, food, rentals and audio/video). The total budget for the 2008 Urban Design Awards event is estimated to be approximately \$25,000. However, should Council approve to promote corporate sponsorship of the 2008 Urban Design Awards, the funding requirement could be reduced.

Communications Plan

To promote the 2008 Urban Design Awards, City staff will advertise through posters to be placed in various public facilities throughout the City. The awards gala will also be advertised on the City of Vaughan's "City Page", as well as the corporate web site. In addition, an informational brochure and application form will be available to the building industry and design professionals when development applications are submitted.

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Purpose

This report has been prepared in response to Council's request that the Development Planning Department review and evaluate the current Urban Design Awards program, and recommend changes to meet the needs of the development industry and establish appropriate categories and criteria to fully recognize the wide range of urban design projects that are currently being implemented in the City of Vaughan.

Background - Analysis and Options

The City of Vaughan initiated the Urban Design Awards in 1992, to promote excellence in urban design, architecture and landscape architecture, and to help recognize the development of the built environment and its contribution to the overall quality of life for the residents and businesses of the community.

In June 2006, the Development Planning Department conducted a survey of the surrounding GTA municipalities to determine the process that they use for their Urban Design Awards program. The municipalities that were surveyed included Markham, Mississauga, Brampton, Oakville and Toronto.

Each municipality had a similar process, however, the judging categories, the frequency of the event and the makeup of jurors on the judging panels varied with each municipality. The survey results on each municipality is provided below:

a) Town of Markham

The Town of Markham's Design Excellence Awards program is presented every other year to recognize and promote excellence in urban design. The 9 member jury consists of 3 landscape architects, 2 architects, 2 planners, the Commissioner of Development Services, and the Chairman of the Development Services Committee.

The jury determines one Design Excellence Award winner in each of six categories (best of category) listed below:

- Town-Wide Significance
- Community-Wide Significance
- Neighbourhood-Wide Significance
- Innovation and Creativity
- Quality of Execution
- People's Choice Design Award

In addition to the selection of Design Excellence Award winners, the jury also presents Awards of Merit to projects and consultants that have generally shown a good interpretation of relevant urban design guidelines, and an above average execution and quality of architectural detail with a creative massing of built form. The number of awards is at the discretion of the jury members.

b) City of Mississauga

The City of Mississauga's Urban Design Awards program was initiated in 1982 and is generally presented on an annual basis (dependent upon sufficient number of potential projects) to recognize outstanding projects that achieve the highest standards in urban design excellence. The 5 member jury consists of 2 architects, 1 landscape architect, the Commissioner of Planning and Building, and a member of City Council.

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The jury gives 2 types of awards, being an Award of Excellence and an Award of Merit; however, there may not be an award winner for every category. The number and type of awards is at the discretion of the panel of jurors. Project submissions are assessed by the jury panel according to the following criteria:

- Significance – City Wide Scale: Contribution to the City design objectives related to City image, visual identity, vistas, skyline, streetscapes, recognition of sites and location opportunities.
- Significance – Community Wide Scale: Contribution to the quality of environment within a community which demonstrates a regard for the context of the locale, enhancing a sense of place and personal safety or reinforcing a unique history.
- Innovation: The degree of creative response to program requirements, site constraints and ability to influence trends.
- Context: The relationship or blending of built forms and spaces with existing and planned development, and respect for and enhancement of the area's character.
- Execution: The quality of construction materials, and the interpretation of design into reality.

Award of Excellence: This is awarded to projects which exemplify and encompass, as much as possible, and to a high degree, the judging criteria and the City's design principles.

Award of Merit: This award is awarded to projects for excellence, specifically in one or more areas of judging criteria and the City's design principles.

c) City of Brampton

The City of Brampton revamped their Urban Design Awards program in 2005, which focuses on the City's new vision to guide development with a commitment to building attractive communities with appealing character, strong identity and enhanced architectural design. The Urban Design Awards program is generally held every 2 years with a 5 member jury that consists of the Mayor, a Councillor, City Manager, the Commissioner of Planning, Design & Development, and a professional representative from the private sector.

The panel of jurors award one winner (best of category) in each category, and 2 to 3 awards of merit as decided by the jury. In addition, there is an award for the best overall project selected from the entire body of submissions. The project submissions are selected and recognized by the panel of jurors in the following categories:

- Best New Building (New Buildings on Greenfield and Infill Sites): Residential single/multi-unit, commercial, institutional, industrial and renovation/heritage restoration.
- Best New Landscape: Small landscape (public space, neighbourhood park, flower arrangement), Large landscape (community/city park, stormpond facility, valley, streetscape).
- Best New Neighbourhood: Large area (40 ha/100 acres or more) with defined character, centre, edges, recognition elements, 75-80% built, nominations submitted by City staff.
- Most Promising Project: This category will include new projects, studies and designs of interest which hold promise to become future award winning developments.
- People's Choice Award: This category will be selected by the public at large based on the display on the City's web page of images and descriptions of projects submitted for all categories.
- Best Overall: This award will be selected from the entire body of submissions.

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d) Town of Oakville

The Town of Oakville Urban Design Awards program is currently undergoing a facelift in 2007 to address the needs of the evolving urban design industry, and to make way for new categories that will fully recognize the wide range of urban design projects that are being developed throughout the Town.

Oakville Staff will be evaluating the current program from top to bottom, with the goal to recognize forward-thinking urban design projects that take into account both natural and human environments that improve both the community and its landscape.

e) City of Toronto

The City of Toronto has initiated an Architecture & Urban Design Awards program that is held every other year and helps recognize and promote public and private awareness of outstanding architecture and urban design projects in the City. The 3 member jury consists of a landscape architect, architect and an architect critic from the press; however, there is no City of Toronto representation on the panel of jurors.

The jury presents an Award of Excellence or an Honourable Mention to the winning projects in each category, however, the jury reserves the right to not award a winner in each category. The number of awards presented is at the discretion of the jury panel. Project submissions are assessed by the jury panel in the following categories:

- Elements: A stand-alone object, landscape element or small-scale piece of a building which contributes significantly to the quality of the public realm. It should provide a memorable image, reinforce the human scale and enhance the character of the surrounding area.
- Buildings: An individual building or a composition of buildings, which achieves urban design excellence through its relationship to the public realm, its massing, detailing and pedestrian amenity.
- Small Open Spaces: Generally related to and defined by adjacent buildings or natural/man-made elements which provide an extension to the public realm in an exemplary way, eg. courtyards, plazas, forecourts and small neighbourhood parks.
- Large Places or Neighbourhood Designs: An executed design plan for a new or renovated large-scale area of the City that creatively resolves and addresses multiple objectives and competing interests, eg. large parks, subdivisions, industrial parks, campus plans and streetscapes.
- Visions and Master Plans: Unexecuted visions for the City, studies and master plans of high inspirational value with the potential for significant impact on Toronto's development.
- Student Awards: Local universities offering degrees in architecture, landscape architecture and design can submit, on behalf of their students, theoretical and studio projects relating to Toronto.

Proposed Program Revisions for Vaughan

The comparison chart (Attachment 1) specifically identifies key elements of the current Urban Design Awards program, and the recommended changes to the program. Given that the Development Planning Department is responsible for processing development applications and implementing the city's design requirements, it is only logical that the Development Planning Department should also be responsible for the overall administration of Vaughan's Urban Design Awards program with the assistance from other City departments, specifically regarding media and scheduling issues. The budget allocated for the awards program should be included in the Development Planning Department's 2008 operating budget.

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The make-up of the panel of jurors needs to include representation from the City. It is recommended that the total 6 member jury consist of 3 representatives from the City and a representative from each relevant professional discipline from the design industry. On this basis, the jury would consist of a landscape architect, architect, urban designer/planner, City Manager, Commissioner of Planning, and a representative from City Council.

The award categories and judging criteria should be changed to better recognize the wide range of projects being built in the City, and that demonstrate the City's commitment to building attractive sustainable communities with appealing landscape architecture, strong identity and high quality architectural design. Upon evaluating the Urban Design Awards programs in the other GTA municipalities surveyed, it has been concluded that the following criteria be used for the judging of the 2008 Urban Design Awards:

1. Significance – City Wide Scale: Contribution to the City design objectives related to City image, visual identity, vistas, streetscapes, recognition of significant sites and location opportunities.
2. Significance – Community Wide Scale: Contribution to the quality of environment within a community which demonstrates a regard for the context of the locale, enhancing a sense of place and conserves and protects the natural environment.
3. Sustainability Design: Performs well in terms of location and linkage, energy efficiency, neighbourhood pattern & design and green construction & technology.
4. Compatibility: The integration or blending of built forms and public or private spaces with existing and planned development, and respect for or enhancement of the existing development character.
5. Innovation and Creativity: The degree of creative response to program requirements, site constraints and ability to influence urban design trends.
6. Execution: The quality of construction materials, and interpretation of the design into reality.

Consideration should be given to adopting three types of award categories, which will allow for a better recognition of various types of urban design projects throughout the City, and also give emphasis to “green” initiatives which are supportive of sustainable development. The three award categories recommended are as follows:

1. Award of Excellence (the number of awards presented in this category is at the discretion of the jury): This award is presented to projects which exemplify, as much as possible, the judging criteria and the City's design principles.
2. Award of Merit (the number of awards presented in this category is at discretion of the jury): This award is presented to projects and consultants, for excellence in one or more areas of judging criteria and the City's design principles.
3. Environmental Green Award (the number of awards presented in this category is at the discretion of the jury): This award is presented to projects that achieve a high degree of environmental sustainability through green construction and technology, including but not limited to, integration of environmental design; stewardship; prevention; conservation; recycling; enhancement; rehabilitation and energy efficiency.

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Relationship to Vaughan Vision 2007

This report is consistent with the priorities set forth in Vaughan Vision 2007, specifically 'A-5', "Plan and Manage Growth".

Regional Implications

N/A

Conclusion

Based on the survey and evaluation of the Urban Design Awards programs for 5 surrounding GTA municipalities, the Development Planning Department concludes that the proposed changes to the current City of Vaughan Urban Design Awards program as identified in this staff report be approved, specifically with respect to the administration, panel of jurors, judging criteria, and type of award categories.

The proposed changes to the current awards program will better meet the needs of the design industry and make way for new categories that will fully recognize the wide range of urban design projects that strengthen our communities and contribute to a better quality of living in Vaughan.

Attachments

1. Comparison Chart

Report prepared by:

Rob Bayley, Senior Urban Designer, ext. 8254

Marco Ramunno, Director of Development Planning, ext. 8485

Grant Uyeyama, Manager of Development Planning, ext. 8635

Development and Communications

/CM

(A copy of the attachments referred to in the foregoing have been forwarded to each Member of Council and a copy thereof is also on file in the office of the City Clerk.)

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Item 2, Report No. 25, of the Committee of the Whole (Working Session), which was adopted without amendment by the Council of the City of Vaughan on May 22, 2007.

2

INTEGRATION OF CTS WITH ACCESS VAUGHAN

The Committee of the Whole (Working Session) recommends approval of the recommendation contained in the following report of the Commissioner of Economic/Technology Development and Communications, dated May 8, 2007:

Recommendation

The Commissioner of Economic/Technology Development and Communications, in consultation with the Chief Information Officer and the Coordinator of Access Vaughan recommends:

That Council receive this report for information.

Economic Impact

There is no economic impact.

Communications Plan

N/A

Purpose

The purpose of this report is to provide Council with an update on the process of integrating the Case Tracking System (CTS) with the Access Vaughan (AV) contact centre.

Background - Analysis and Options

To achieve one of Vaughan Vision's primary objectives to provide service excellence to its residents and business community, Council mandated staff to re-think how the City provides information and services. As its community becomes more sophisticated and expectations change, so should the municipal service delivery.

Project – Access Vaughan – Phase I:

On January 30, 2006 the City successfully launched Access Vaughan. Access Vaughan handles all incoming calls from residents (that have not self-served) as well as service at the Information Desk, and detailed inquiries for the following departments: Financial Services (Tax), Public Works (Waste), Enforcement Services and Recreation & Culture. In addition, over this past year Access Vaughan handled peak call periods such as, Interim and Final Tax bill inquiries, Greening Vaughan inquiries including complaints regarding the distribution of Green bins, and registration inquiries for Recreational programs. These peak call periods were found to have the greatest impact to Access Vaughan's call volume, talk time and handle time.

Access Vaughan was able to maintain an average service level of 90% during 2006. (Service level is defined as: "percent of contacts answered in seconds", e.g., 90 percent of all calls were answered within 20 seconds).

As a part of Phase I, Access Vaughan developed Service Level Agreements, (an agreement between Access Vaughan and each individual department) that defined performance objectives and expectations with regards to service level, response time objectives and escalation

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procedures. In addition, Access Vaughan developed the Knowledge Tool (KT), a database housing keywords linked to services provided by each department. The completion of Phase I established a foundation for the integration of Access Vaughan within the corporation.

Project – Case Type Tracking (CTS) Phase I:

On October 25, 2005 Committee of the Whole (Working Session) received Report No. 60, Item 5, titled Integration of Service Delivery Standards (Phase 1) with Access Vaughan. (Attachment 1)

The purpose of this report was to provide Council with an update on the process of integrating the City of Vaughan Service Delivery Standards (Phase 1) with the Access Vaughan Contact Centre. In order to move towards the objectives of the report, the Case Tracking System (CTS) project was initiated under the governance of the Access Vaughan Steering Committee in April 2006.

Case Tracking System (CTS) is an application which captures, monitors and reports on different types of cases. A case may be a request for service initiated by a resident or local business, a complaint/issue, a question or the reporting of an incident. Phase I of the CTS rollout includes the following departments: Enforcement Services, Public Works (Waste), Building & Facilities, Recreation & Culture, Parks & Forestry Operations, Parks Development, and Engineering Services. Each of these departments have documented Service Delivery Standards (SDSs). Active Cases and Service Delivery Standards/Thresholds are being mapped on the CTS GeoViewer. Members of Council and Councillor Executive Assistants are being trained on this application.

The CTS project recognized the need to extend CTS access on functionality across the organization and capture service delivery standards as a prerequisite for CTS integration with Access Vaughan. Phase I of the CTS project will be completed in May 2007. (Attachment 2)

Project – Integration of CTS with Access Vaughan – Phase I:

Upon completion of the CTS Phase I project the integration of CTS with Access Vaughan will commence. The integration of CTS will provide both Access Vaughan and functional departments with a tool to capture and manage cases. The approach will be to commence with the departments not integrated with Access Vaughan in a staggered approach allowing for critical Business Impact Analysis.

A Business Impact Analysis is required in order to ensure that callers are not negatively impacted by the integration of CTS. The Business Impact Analysis (BIA) will evaluate any necessary changes to service levels, staffing levels, training, and/or technological enhancements. A proposed timeline has been created, however requires consultation with partnering departments. (Attachment 3)

Project – Access Vaughan Phase II:

The benefits, opportunities and steps for Phase II of Access Vaughan were outlined in Report No. 18, Item 6, submitted to Committee of the Whole, April 16, 2007. Access Vaughan Phase II is currently pending Capital Budget approval. (Attachment 4)

Relationship to Vaughan Vision 2007

Access Vaughan's services are aligned with Vaughan's Vision 2007 in two primary goals and objectives:

- 1.2 Establish and communicate service level standards that are affordable and sustainable.
- 1.3 Provide effective and efficient delivery of services.

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- 1.4 Develop an effective service measurement system.
- 6.2 Develop innovative external communications initiatives.

Regional Implications

N/A

Conclusion

The integration of CTS will assist the Corporation in providing a more efficient and consistent service to the resident as well as provide information to assist in business making decisions. This carefully phased approach will be sensitive to ensuring that the holistic caller experience is positive through proper Business Impact Analysis.

Attachments

- Attachment 1 – Report No. 60, Item 5 – Integration of Service Delivery Standards (Phase 1) with Access Vaughan
- Attachment 2 – Phase I – CTS Project Milestones – Actual vs Projected
- Attachment 3 – Access Vaughan Integration with CTS
- Attachment 4 – Report No. 18, Item 6 – Access Vaughan Summary of Year 2006 & Proposed Phase II Initiatives

Report prepared by:

Frank Miele, Commissioner of Economic/Technology Development and Communications

(A copy of the attachments referred to in the foregoing have been forwarded to each Member of Council and a copy thereof is also on file in the office of the City Clerk.)

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Item 3, Report No. 25, of the Committee of the Whole Working Session), which was adopted without amendment by the Council of the City of Vaughan on May 22, 2007.

3 POLE AND STREETLIGHT MAINTENANCE AND REHABILITATION PROGRAM

The Committee of the Whole (Working Session) recommends:

- 1) That the recommendation contained in the following report of the Commissioner of Engineering and Public Works, dated May 8, 2007, be approved;
- 2) That staff provide a report on alternative opportunities with respect to this matter, including reducing light pollution, energy use and related costs;
- 3) That staff review the results of Toronto's pilot project in relation to the subject matter and report back;
- 4) That the subject report be forwarded to the Environmental Task Force to assess the associated environmental issues;
- 5) That alternative energy efficient lighting methodologies be explored, including the use of LED's and that a report be provided to a future CW (WS) meeting for discussion; and
- 6) That the presentation of the Supervisor, Infrastructure Management, and presentation material submitted entitled, "Pole and Streetlight Maintenance and Rehabilitation Program", be received.

Recommendation

The Commissioner of Engineering and Public Works in consultation with the Commissioner of Finance and Corporate Services recommends:

1. That the proposed Pole and Streetlight Maintenance and Rehabilitation Program, incorporating the following components:
 - a) Streetlight Pole Replacement
 - b) Group streetlight relamping
 - c) Streetlight upgradingbe approved in principle, and
2. That the proposed Pole and Streetlight Maintenance and Rehabilitation Program be incorporated in the City's Long Range Financial Planning Study.

Economic Impact

The Pole and Streetlight Maintenance and Rehabilitation Program could require an investment of up to \$13,190,000.00 over a 15 year period.

The Long Term optimization of resources can be achieved through City initiatives such as the Infrastructure Management System and modeling these figures within the Long Range Financial Planning Model so that future funding implications are known and can be planned for at the earliest possible point in time and budgetary and/or program changes implemented accordingly.

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Communications Plan

There has not been public consultation to this point other than to advise residents inquiring about streetlighting that a City wide study was underway. Implementation of individual projects would be subject of the Engineering Services Department and Public Works Department standard communication with affected residents prior to and during maintenance or construction activities.

Purpose

The purpose of this report is to provide Council with the results of the Streetlight Inventory and Assessment study and obtain approval in principle of a Pole and Streetlight Maintenance and Rehabilitation Program. Project Level Program requirements will be brought forward annually for consideration as part of the Capital and Operating Budget deliberations.

Background - Analysis and Options

Streetlighting Inventory and Assessment Study Initiation

On October 28, 2002, Council approved the contract award for the Streetlighting Inventory and Assessment study. The purpose of this study is to identify the upgrading needs of the City's streetlighting network, establish cost-effective solutions, and develop a long-term implementation program that prioritizes the areas to be upgraded including benchmark cost estimates.

New Asset Management Methodology

On February 16, 2006, Council endorsed through resolution, InfraGuide and the best practices with respect to Asset Management. Through InfraGuide, a comprehensive business strategy involves 3 pillars: People, Information and Technology.

The Essential Elements of an Asset Management Plan are:

1. *What do you have and where is it?*
2. *What is it worth?*
3. *What is its condition and its expected service life?*
4. *What is the level of service expectation, what needs to be done?*
5. *When do you need to do it?*
6. *How much will it cost and what is the acceptable level of risk?*
7. *How do you ensure long term affordability?*

People, Information and Technology in practice with the Essential Elements is the key to a successful implementation of an Asset Management Plan.

It is within this framework that the Pole and Streetlight Maintenance and Rehabilitation Program results are reported.

Pole and Streetlight Maintenance and Rehabilitation Program

The Infrastructure Management Division of the Engineering Services Department is responsible for infrastructure records, engineering related data and data management and strategic analysis related to the City's civil infrastructure. The Division maintains streetlight and pole related data.

The base data required for this program is generated as a regular function of the Infrastructure Management Division and is fully integrated with the Enterprise G.I.S. Database.

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1. What do you have and where is it?

The inventory of City owned active streetlights are summarized in the following table by Ward:

Table No.1

Summary of Streetlight Network - By Ward		
Ward	Streetlight	Utility Pole
1	6009	5821
2	4285	3919
3	2977	2746
4	4999	4530
5	1927	1628
Total	20197	18644

Note: approximately 1553 City streetlights are mounted onto utility poles owned by other agencies such as PowerStream.

2. What is it worth?

Based on current industry costs for utility poles and streetlights, staff have estimated the replacement value of the City’s entire streetlight network to be approximately **\$115 MILLION DOLLARS**. This figure does not include the value for underground wiring which is also required for streetlight system.

3. What is its condition and its expected service life?

Physical Condition

The gathering of condition assessment information is an integral part of an asset management plan. For an inventory, condition represents a “snap-shot” of the network for the period when the information was collected. The conditions recorded provide a base line for future condition surveys and the data may provide an indication of predominant modes of deterioration present or show patterns and/or trends.

Our data is circa 2003 and consists of the assessment of poles, arms and luminaires to document distresses and their respective severity, as observed by an inspector at ground level. The type is distresses found are:

- Cracking, splintering, crushing and shattering;
- Rust;
- Spalling;
- Loose connections;
- Non-verticality (leaning);
- Tree interference.

Severity of a distress is ranked by the following criteria:

- Light/Slight;
- Moderate;
- Severe.

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The extent of distresses on our utility poles is summarized in the following tables:

Table No. 1

Utility Pole Visible Condition			
Distress	Severity	Quantity	Cost
Cracking	Light / Slight	167	\$751,500.00
	Moderate	125	\$562,500.00
	Severe	82	\$369,000.00
Cracking, splintering, crushing and shattering	Light / Slight	24	\$108,000.00
	Moderate	4	\$18,000.00
	Severe	2	\$9,000.00
Rust	Light / Slight	15	\$67,500.00
	Moderate	1	\$4,500.00
Spalling	Light / Slight	65	\$292,500.00
	Moderate	26	\$117,000.00
	Severe	2	\$9,000.00
Total		513	\$2,308,500.00

Table No. 2

Utility Pole Non-Verticality (Leaning)		
Severity	Quantity	Cost
Light / Slight	384	\$230,400.00
Moderate	72	\$43,200.00
Severe	2	\$1,200.00
Total	458	\$274,800.00

The extent of distresses on our streetlights is summarized in the following tables:

Table No. 3

Streetlight Arm Fixing Condition ¹			
Distress	Severity	Quantity	Cost
Loose Connections	Light / Slight	1	\$500.00
	Moderate	13	\$6,500.00
	Severe	2	\$1,000.00
Rust	Light / Slight	51	\$25,500.00
	Moderate	37	\$18,500.00
	Severe	6	\$3,000.00
Total		110	\$55,000.00

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Table No. 4

Streetlight Arm Visible Condition ¹			
Distress	Severity	Quantity	Cost
Rust	Light / Slight	3	\$1,500.00
	Moderate	21	\$10,500.00
	Severe	7	\$3,500.00
Total		31	\$15,500.00

Table No. 5

Streetlight Luminaire Condition ¹			
Distress	Severity	Quantity	Cost
Rust	Light / Slight	211	\$105,500.00
	Moderate	74	\$37,000.00
	Severe	8	\$4,000.00
Total		293	\$146,500.00

¹ - Staff calculated benchmark estimate for budget purposes only.

Table No. 6

Streetlight Tree Interference	
Distress	Quantity
Tree Interference	520
Total	520

Wattage Upgrade

A summary by Wattage of our Streetlight network can be summarized by the following table:

Table No. 7

Summary of Streetlight Network - By Wattage	
Wattage	Quantity
Unknown	3361
50	8
70	4624
100	5463
150	3005
200	631
250	2582
400	523
Total	20197

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The Infrastructure Management Division has further refined and updated attribute information for the utility pole and streetlight datasets subsequent to the data delivery from our Consultant. This was accomplished through summer student resources researching indexed infrastructure records from HIRMS (Historical Infrastructure Records Management System) that was developed after the initial Streetlighting Inventory and Assessment study.

Based on our current standards, a streetlighting system is designed to meet an average maintained illumination level and minimum uniformity ratio for each type of road and walkway. To achieve this end within residential and industrial subdivisions, wattages of 100 and 150 are standard. On major right of ways external to subdivisions, wattages of 200, 250 and 400 may be utilized as required.

There have been 3 significant eras to our standards for streetlighting. These “eras” and their respective key factors are summarized below and are directly related to standard practice of the Illuminating Engineering Society of North America:

Pre 1991	70, 100 and 150 watt widely used
1991 to 2002 -	70 – 400 watts widely used, minimum illumination levels increased which resulted in closer and more uniform design
2002 to present - (current standard)	100 and 150 watts standard and 200, 250 and 400 watts used where required, minimum illumination levels superseded by average illumination levels of similar criteria of the previous era

Since our current standard and that of the era from 1991 to 2002 end result are similar, we can conclude that streetlights that are 70 watts or less and are constructed prior to 1991 are below current standards.

Further query of the Infrastructure Database reveals the following number of streetlights that fall into this category are summarized in the following table including benchmark costs:

Table No. 8

Streetlight Upgrade Benchmark Cost ¹				
Age	70 watt	Unknown wattage	Total Streetlights	Cost
Pre 1991	3275	294	3569	\$1,784,500.00
Unknown	935	2657	3592	\$1,796,000.00
Total	4210	2951	7161	\$3,580,500.00

Generally speaking, according to the Consultant’s report, upgrading wattage from 70 to 100 watts would have little benefit based on cost other than streamlining stock control and order purposes and would serve to increase lighting intensity levels at the expense of greater energy consumption.

As noted in Table No. 6, 520 locations are subject to tree interference. Tree pruning at these locations through the City’s regular program by our Parks and Forestry Operations Department will substantially remove light restrictions, better illuminating the roadway and reduce complaints. These locations have been formally identified and forwarded to the Parks and Forestry Operations Department for their consideration and action as budget allows.

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Staff would caution that there is no technical merit to changing wattage and that there is a high degree of certainty that upgrading will introduce new criticisms from the public in the form of over/under illumination and non-uniformity.

Illumination Deficiencies

The study also undertook the initial analysis of illumination deficiency “windows” or gaps in the existing streetlighting system.

From the analysis, the Consultant identified 277 illumination deficiencies spread over some 118 streets have been identified. The Consultant identified 2 strategies that can be implemented to correct these deficiencies:

- A. Reconfigure all poles on the affected street to ensure that the lighting intensity and uniformity comply with current standards. Cost of this solution is estimated at **\$6,079,800**, not including engineering and administration costs; and
 - B. Infill, add utility pole and streetlight to the specific, deficient areas only. Cost of this solution is estimated at **\$1,237,500**, not including engineering and administration costs.
4. What is the level of service expectation, what needs to be done?

The condition of our network is generally in good condition with approximately 5% of our utility poles and 2% of our streetlights having distresses. Furthermore, approximately 18% of the streetlight network (not including streetlights of unknown wattage and age) has a wattage of 70 and is older than 1991 and less and 1% of the streetlight network has illumination deficiencies.

A. Level of Service

The interest of public health and safety must take the highest priority in developing a program(s) to effectively and efficiently address the noted distresses and deficiencies from the Inventory and Assessment project. The secondary factor in developing a program(s) is to maximize the return on every dollar invested through maximizing the lifecycle of the asset and also conducting detailed value engineering exercises at specific locations to determine the best means to address deficiency issues.

B. What needs to be done?

Keeping the noted targets in mind, the Engineering Services Department and Public Works Department have collaborated to develop programs to deal with the distresses and deficiencies. They are as follows:

I. Streetlight Pole Replacement Program - Public Works Department

This program will focus on the replacement of existing utility poles and streetlights with visible distresses and/or undertake the upgrading of streetlights with 70 watt or less luminaires and are older than 1991 to 100 watts where said conditions co-exist.

This program recognizes that there are efficiencies in addressing distress based deficiencies for both utility poles and streetlights and performing upgrades simultaneously. Works are ranked primarily by the following criteria:

- Type of distress and severity
- Location (road class)
- Age
- Material

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The program is aimed to be undertaken over a 5 year period and will address deficiencies that directly affect public health and safety.

II. Group Streetlight Re-lamping - Public Works Department

There are 3 main factors that affect the health and useful life of a streetlight's internal lamp. They are the manufacturer's Average Rated Life expectancy, Lamp Lumen Depreciation and Luminaire Dirt Depreciation.

Manufacturers rate all varieties of lamps in terms of average rated life. For most roadway applications, average rated life is based on standard life performance of a large representative group of lamps usually operating 11 hours per start under controlled electrical, thermal and mechanical conditions. Average rated life is based on the survival of 50 percent of the lamps and thus allows for individual lamps to vary considerably from this average. 24,000 hours is the industry's average rated life for lamps.

During their lifetime, the lumen output of most lamps gradually diminishes. This gradual reduction in light output with burning is called Lamp Lumen Depreciation. In addition to lamp lumen depreciation over time, dirt accumulates both on the inside and outside of the refractor, on the inside of the luminaire reflector and on the lamp. The dirt accumulation is responsible for additional reduction in luminaire light output and is known as Luminaire Dirt Depreciation.

The Group Streetlight Re-lamping Program aims to establish a "best time schedule" cyclical program to address the health of the Streetlight System and will engage specifically in the inspection, cleaning and repair of fixtures, replacement of streetlight lamps and upgrading of streetlights from 70 watts or less and are constructed prior to 1991 (considered below current standards) where encountered, to 100 watts. This program recognizes that there are efficiencies in combining the maintenance of streetlighting and performing upgrades simultaneously.

The Level of Service for this program is to perform the maintenance on the streetlight lamp and components at the $\frac{3}{4}$ mark of the lamps useful service life. The resultant cycle calculated from this Level of Service is 4.48 years and is round up to 5 years for ease of management.

This program will reduce operating costs by reducing reactive works such as responding to outages, reducing complaints and increasing efficiencies by working within target areas.

III. Pre-Engineering Streetlight Upgrade Program - Engineering Services Department

This program supports the Streetlight Upgrade Program by engaging consulting services for the engineering study, design and tender document preparation of upgrade projects.

There are a number of locations throughout the City where the streetlighting network was constructed prior to 1991 but have not been identified as being deficient or substandard by the Consultant. As a part of the pre-engineering program, staff wish to further review and study these areas for inconsistencies in illumination and uniformity. Should it be determined that any of these areas require remedy, the Engineering Services Department will undertake a value engineering analysis to determine the solution that produces the greatest benefit per dollar investment. These projects will be brought forward through future capital budget deliberations under the title of the Streetlight Upgrade Program.

The Engineering Services Department completes design and tender documents for projects annually at the earliest possible time. Having early tenders produces savings to the City through lower unit rates from bidders and earlier project start and finish dates, resulting in reduced impact to citizens and the environment.

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We have traditionally worked on Pre-Engineering under the auspices of projects one year advance of their proposed construction year. This methodology becomes restrictive when the annual budget approval process goes beyond February of the current calendar year.

We seek Council's support of Pre-Engineering for further study and producing design and tender documents beyond the traditional 1 year window. This will allow the City to have completed design and tender documents "on the shelf" for multiple projects, in multiple years ready for bidding. With projects in this state, the City can go out to tender at the earliest possible time and take advantage of lower rates and favorable construction timing.

IV. Streetlight Upgrade Program - Engineering Services Department

Following Pre-Engineering, this program aims to construct new utility poles and/or streetlights in those areas where illumination deficiency "windows" or gaps in the existing streetlighting network have been identified. From the study findings for illumination deficiencies, 2 separate strategies were identified by the Consultant being Reconfiguration and Infill.

The Engineering Services Department has further reviewed these strategies and recognize that it is not practical to engage in either of these strategies exclusively and that efficiencies can be gained through striking a balance between these two by undertaking further pre-engineering of site specific circumstances and implementing the most economic solution based in our findings. Works will be ranked primarily by their location (road class).

The Level of Service for Streetlight Upgrade Program and the accompanying Pre-Engineering is 15 years. The streetlight system as it exists today is constructed to a "standard of the day" though it may not conform to today's standard, however there is not regulatory requirement to upgrade the system in a specified period of time. Given the cost to perform this program, 15 years is suggested as a balance between performing work funding increases.

5. When do you need to do it?

The Engineering Services and Public Works Departments propose to undertake the various programs as noted:

Program	Department	Duration
Streetlight Pole Replacement Program	Public Works Department	5 Years
Group Streetlight Re-lamping	Public Works Department	Unlimited
Streetlight Upgrade Program	Engineering Services Department	15 Years

6. How much will it cost and what is the acceptable level of risk?

Setting a **Level of Service** (LOS) or a target, is an important and critical step in a proper Asset Management Plan. Risk to public health and safety must take priority.

Based on the target Level of Service as previously described under section 4A, investment required including financing costs over the next 5 years within the proposed programs described in section 4B are as follows:

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Year	Public Works Department		Engineering Services Department		Total
	Streetlight Pole Replacement Program	Group Streetlight Re-lamping	Streetlight Upgrade Program	Pre-Engineering Streetlight Upgrade Program	
2007	\$275,000.00				\$275,000.00
2008	\$652,500.00	\$206,000.00	\$418,000.00	\$42,000.00	\$1,318,500.00
2009	\$652,500.00	\$209,000.00	\$418,000.00	\$42,000.00	\$1,321,500.00
2010	\$652,500.00	\$212,000.00	\$418,000.00	\$42,000.00	\$1,324,500.00
2011	\$652,500.00	\$215,000.00	\$418,000.00	\$42,000.00	\$1,327,500.00
2012		\$218,000.00	\$418,000.00	\$42,000.00	\$678,000.00
2013		\$221,000.00	\$418,000.00	\$42,000.00	\$681,000.00
2014		\$224,000.00	\$418,000.00	\$42,000.00	\$684,000.00
2015		\$227,000.00	\$418,000.00	\$42,000.00	\$687,000.00
2016		\$230,000.00	\$418,000.00	\$42,000.00	\$690,000.00
2017		\$233,000.00	\$418,000.00	\$42,000.00	\$693,000.00
2018		\$236,000.00	\$418,000.00	\$42,000.00	\$696,000.00
2019		\$239,000.00	\$418,000.00	\$42,000.00	\$699,000.00
2020		\$242,000.00	\$418,000.00	\$42,000.00	\$702,000.00
2021		\$245,000.00	\$418,000.00	\$42,000.00	\$705,000.00
2022		\$248,000.00	\$418,000.00	\$42,000.00	\$708,000.00
	\$2,885,000.00	\$3,405,000.00	\$6,270,000.00	\$630,000.00	\$13,190,000.00

How do you ensure long term affordability?

As the City's infrastructure, information, systems and technology matures, multi-faceted integration across all asset classes such as roads, structures, pipes and amenities will be realized. This is a natural path not only from an engineering technical analysis but should also be embraced from a financial perspective.

Ensuring that the funding requirements are captured in the long range financial planning model and that any increases to proposed funding requirements are supported, will ensure that the streetlight network is maintained at our target Level of Service.

Meeting the target level of service is critical to maximize the benefit for every dollar we invested in maintenance and rehabilitation which will directly reduce costly future reactive works and will reduce complaints from the public. Should current and future funding levels not be supported, we risk further deterioration of the streetlight network, a reduced level of serviceability and increase long term maintenance costs.

Regional Implications

There are no Regional implications.

Relationship to Vaughan Vision 2007

This report is consistent with the priorities previously set by Council.

Service Delivery Excellence

We are able to develop and establish service level standards that are sustainable and provide effective and efficient delivery of service.

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Manage our Resources

The City has a significant investment in infrastructure that requires a process and a plan to ensure that its repair and eventual replacement is properly managed.

Communications and Public Relations

Through endorsement of the InfraGuide Best Practices, we strengthen Corporate Image and identity.

Technology and Innovation

The system conforms to the policies, standards and procedures as defined through the Corporate G.I.S. Initiative. The Pole and Streetlight Maintenance and Rehabilitation Program achieves the Corporate Strategic Plan to develop and implement an Infrastructure Management System to enhance safety through proactive repair and replacement and improve financial efficiency and return on investment through life cycle costing.

Conclusion

The purpose of this report is to provide Council with the results of the Streetlight Inventory and Assessment study and to set out a Pole and Streetlight Maintenance and Rehabilitation Program. Project Level Program requirements will be brought forward annually for consideration as part of the Capital and Operating Budget deliberations.

Attachments

None

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DSB/mc