

TORONTO TRANSIT COMMISSION REPORT NO.

MEETING DATE: July 9, 2009

SUBJECT: PROCUREMENT AUTHORIZATION – PURCHASE ORDER
AMENDMENT FOR CONSULTANT SERVICES - GREEN
PROCUREMENT IMPLEMENTATION

ACTION ITEM

RECOMMENDATION

It is recommended that the Commission receive the attached implementation plan for Phase 2 of Green Procurement for information and approve the following:

1. Authorization of \$385,000 in an unbudgeted expenditure for consultant services for Phase 2 implementation of Green Procurement; and
2. Issuance of a purchase order amendment to the contract with Five Winds International (Five Winds) to extend the contract to December 31, 2010 and increase the upset limit amount by \$275,000 to a total upset amount of \$800,000.

FUNDING

No funds have been included in any of the TTC's 2009 budgets for Phase 2 of Green Procurement.

BACKGROUND

At the December 6, 2007 Commission Meeting, the Commissioners were asked to endorse various environmental initiatives and implementation strategies outlined in the report. It highlighted certain initiatives such as the purchase of new streetcars, hybrid buses and subway cars as well as waste diversion that the Commission was already undertaking. It also directed staff to submit a Green Procurement Policy for approval in order to make environmental improvements to purchasing practices.

Staff retained the services of an external consultant at a cost of \$75,000 to assist in the development of the Green Procurement Policy.

At the July 10, 2008 Commission Meeting, the Commission approved the TTC Corporate Policy - Green Procurement (GP) as well as a purchase order amendment of \$450,000 to the external consultant and the creation of the position of Green Procurement Coordinator to facilitate the implementation of Phase 1 of Green Procurement. Phase 1 focused on activities to set up the

organization, infrastructure, and establish the communication links required to roll out the implementation of the Green Procurement Policy (GPP), which included the following elements:

1. Establishing the committee structure to drive the GPP implementation;
2. Determining additional resources (i.e. consulting staff) required for Phase 1;
3. Determining training requirements, developing training materials and carrying out training of staff as required;
4. External capacity building/outreach regarding GPP awareness with major vendors;
5. Identifying and establishing partnerships with other transit and government organizations;
6. Completing Life-Cycle Costing analysis on test issues and developing preliminary life cycle costing models;
7. Integrating environmental considerations into the specifications for selected purchases;
8. Developing a communication plan and GPP database requirements;
9. Establishing the strategy, plan and schedule for Phase 2 involving the long-term implementation of the GPP; and
10. Reporting back to the Commission on the status of the implementation of the GPP.

This report provides the status of the progress achieved and challenges associated with Phase 1, and provides the plan for Phase 2 of the implementation of the Green Procurement Policy.

DISCUSSION

Each of the elements of the Phase 1 Plan are discussed below.

1. Establishing the Committee Structure

To guide the execution of the Phase 1 implementation plan, a Green Procurement Steering Committee was established. The Committee, chaired by the General Manager – Executive, includes department heads from the following departments: Materials and Procurement (M&P), Safety, Engineering, Plant Maintenance, Signals/Electrical/Communications and Information Technology Services. A Working Committee chaired by the Coordinator – Green Procurement and including representatives of the above mentioned departments to support the policy implementation was also established to support the Steering Committee and organize and execute specific activities.

The Committees' activities focused on developing a strong understanding of the policy requirements and oversight of the Phase 1 Implementation Plan, including the need to develop a plan with clear goals for Phase 2. In particular they:

- Developed and approved Terms of Reference and implemented the plan for Phase 1 of Green Procurement;
- Recommended that all departments and sections develop GP goals and objectives for the 2010 budget cycle;
- Developed a Guide for Departments to assist them in establishing their GP goals and objectives and integrating these into the 2010 budget process; and

- Developed the Phase 2 plan for continued integration of Green Procurement into the TTC.

2. Determining Additional Resources

The Committees developed a plan for the consultant's participation in Phase 1, which at the completion of Phase 1 resulted in a total expenditure of only \$340,000 of the \$450,000 budgeted.

During the Phase 1 Green Procurement training sessions, the Steering and Working Committees determined that no additional TTC resources would be required for Phase 1 implementation. Departments were advised that as part of developing their 2010 Green Procurement Goals and Objectives, they should determine whether additional labour and/or non-labour resources will be required to achieve their goals.

3. Determining Training Requirements

To determine training requirements, interviews were conducted with six departments to determine potential success factors and barriers for Green Procurement implementation as well as training needs. General and advanced training modules were developed (e.g. general awareness training, specification preparation training, etc.) and approximately 225 staff across 19 Departments were trained on environmental concepts and guidelines for procurement such as; developing environmental specifications, vendor based environmental specifications, bid evaluation processes and criteria, eco-label certification processes and their use in the verification/validation of vendor claims regarding product performance.

A Total Cost of Ownership (TCO) tool was developed by the consultant for the TTC and staff was trained on the use of this tool. Staff was also trained on the establishment and development of specific goals and objectives as they relate to Green Procurement. All staff has access to the training material through the internal Green Procurement website for assistance in developing specific goals and objectives for 2010 as well as assistance from M&P's Green Procurement Coordinator, as required.

4. External Capacity Building/Outreach

The Green Procurement Policy was sent electronically to approximately 200 of the largest TTC vendors as well as being posted on the TTC website. In addition three on-line vendor workshops were conducted regarding the TTC's plans and goals for the implementation of Green Procurement. Vendors who attended the workshops were invited to identify opportunities to work with the TTC in the future.

Several meetings were also held with three of the largest suppliers to the TTC (i.e. Daimler Buses North America, Bombardier Inc. and Harper Power Products Inc.) to discuss the current state of evolution of Green Procurement in their organizations and potential opportunities to work collaboratively in the future. Vendors can also access specific Green Procurement information on the TTC's website. A number of other vendors were also engaged through a

number of Requests for Information on specific products to solicit information from the industry on the latest technological developments relating to green products.

5. Identifying and Establishing Partnerships with Other Transit and Government Organizations

Letters were sent to CUTA and APTA informing them of the TTC's plans for the implementation of Green Procurement and inviting future collaboration. A second letter was sent in June 2009 to both organizations recommending a benchmarking exercise of their members' progress in implementing Green Procurement. Such a benchmark exercise would provide the TTC with an independent view of its status on Green Procurement implementation. Staff is also planning to participate in trade shows in the future to solicit information to identify "Green" alternatives to current products used by the TTC. These trade shows include the Ontario Transportation Expo as well as Greening Toronto Marketplace.

6. Completing Life-Cycle Costing Analysis on Test issues

The consultant developed a Total Cost of Ownership (TCO) tool using various components that utilize the total cost of ownership approach for evaluating costs. This TCO tool is located on the TTC's intranet site for use by staff as required. Total Cost of Ownership refers to all costs, which would be incurred by the TTC over the lifetime of a product from the moment it comes onto the property through to its proper disposal. This includes such items as storage, transportation, energy consumption, waste disposal costs, etc. The TCO tool is intended to be used by staff on an on-going basis as projects arise.

The consultant applied the TCO tool to a number of pilot projects that were already underway by various TTC departments relating to testing environmentally friendly alternatives to current products as follows:

- LED flashlights vs. conventional flashlights for use in subway tunnels and general use;
- Experimental Application of LED Lighting vs. fluorescent lighting in a subway station platform retrofit;
- LCD computer monitors to replace conventional CRT monitors;
- Reusable plastic pallets vs. wooden pallets for materials received by M&P;
- Hand dryers vs. paper towels in employee washrooms in subway stations;
- Bio-based hydraulic oil vs. petroleum oil for use in elevators; and
- Tankless hot water heaters vs. conventional units in subway stations.

The pilot project coordinators were trained on the application and use of the TCO tool and analysis, further building departmental capacity in the total cost of ownership approach in the evaluation of Green Procurement options. The pilots produced mixed results with some showing potential benefits and others were considered either to be not viable or required further analysis (refer to the attached Summary of Pilot Findings - Appendix 'A' for specific details).

7. Integrating Environmental Considerations

Several key activities in Phase 1 focused on changing TTC's purchasing processes, as well as

the integration of environmental considerations into key contracts. Specific activities and results in this area included:

- Integration of general and specific environmental considerations into 4 of the TTC's commission-wide procurement contracts (System Contracts). These include, Janitorial Products (\$11 Million over 5 years), Stationery and Office Supplies (\$9 Million over 5 years). In terms of Janitorial Products, 120 out of a total of 279 products listed have been identified as having potential to be replaced with "Green" alternatives and will be investigated over the next year.
- Plan for the integration of general and specific environmental considerations into the remaining applicable 15 System Contracts.
- Incorporated environmental considerations into the requirements of the following multi-year contracts:
 - CADD Workstations;
 - Waste Electronic Equipment Disposal ;
 - Disposal/Re-Refining of Waste Oil;
 - Purchase of Carpeting; and
 - Window Cleaning Services.
- In November 2007, the Purchasing and Sales Section (P&S) of M&P began a pilot project that involved implementing a series of initiatives to reduce paper consumption and the purchase of paper with 100% post consumer recycled content. Environmental benefits achieved by M&P's paper pilot project through the use of 100% recycled paper were calculated for the period beginning November 2007 to December 31, 2008. The results demonstrated a number of environmental benefits, savings and reductions on the following life cycle impact categories such as reductions in: wood use, total energy consumption, greenhouse gases, wastewater and solid waste. It is estimated that this project resulted in a reduction of approximately 11.4 metric tonnes in wood use (approximately 64 trees), a savings of approximately 83 MJ in total energy, an avoidance of approximately 5000 kg of Greenhouse Gases, an avoidance of creating approximately 154,000 litres of wastewater generated in the manufacturing process and a reduction of approximately 2.3 tonnes of solid waste also generated in the manufacturing process. The Purchasing and Sales Section represents approximately 10 % of total paper consumption at the TTC. P&S was able to reduce its paper consumption by approximately 23% over the time frame of the pilot. As 100% Recycled paper is approximately 30% more expensive than regular (non-recycled) paper, the pilot resulted in net increase of \$2,400 in costs. During Phase 2, P&S will be investigating methods to measure this higher cost against the environmental benefits to determine the overall life cycle costs of this initiative.
- In addition:
 - All departments were requested as part of the 2010 Operating Budget to develop Green Procurement goals and objectives; and

- Green Procurement purchase opportunities within the TTC's Master Specifications (Engineering Department) for facilities were identified for consideration.

8. Developing a Communication Plan

A number of communication activities were undertaken to raise awareness amongst staff including:

- The development and launch of a Green Procurement page on the intranet site for staff and the TTC's internet website for vendors and the public. This included information on the Green Procurement Policy, implementation plan for Phase 1 and will include the Phase 2 plan ;
- A on-going series of monthly articles in the Coupler to update TTC staff on Green Procurement efforts as well as to provide general information on Green Procurement;
- Meetings with the City of Toronto and Toronto City Summit Alliance (in regard to the Green Procurement Leadership Council which is made up of both private companies and public organizations); and
- Working on the development of a Green Procurement tracking database which will be developed and finalized in Phase 2. This database will allow the identification of products where Green Procurement alternatives have been found as well as to share information with TTC staff and other companies/organizations regarding these products.

9. Establishing the Plan for Phase 2 of Green Procurement

Through the execution of Phase 1, the Steering and Working Committees have learned some key lessons that have been included in the proposed Phase 2 plan. These are:

- A measurable goal and timeline is required for integrating environmental considerations into current annual and multi-year contracts for goods and services;
- Further implementation of Green Procurement may require additional labour and non-labour resources;
- There are opportunities that exist for Commission-wide environmental considerations that could be implemented in key product areas (i.e. packaging, lighting, paper, furniture, IT equipment, etc) for Phase 2; and
- Implementation of the Green Procurement Policy is challenged due to competing demands on staff time, which includes the implementation of the Commission's Safety initiatives through Work Safe - Home Safe as well as the increase in capital and operating project activity.

Based on the results and the lessons learned from Phase 1, a Phase 2 plan has been developed (Appendix 'B'). The activities in this plan are in addition to any specific departmental activities related to Green Procurement Policy implementation which will be included in departmental goals and objectives for 2010.

At the Commission Meeting of April 27, 2009, the Commission requested information regarding Green Procurement requirements for products such as high speed copiers, convenience copiers, fax machines, laptops and desktops that the TTC purchases. The response to this request for information is included in Appendix 'C' – High Speed Copiers and Office Equipment.

The continued services of Five Winds are required to facilitate the implementation of Phase 2 of the Green Procurement Policy. Staff has established a budget of \$385,000 to cover the cost of Five Winds' involvement in Phase 2 based on specific tasks. The budget includes a contingency of approximately 20% to cover additional work that may arise during the contract term. As funds have not been budgeted in either 2009 or 2010 for this expenditure, staff require Commission approval in the amount of \$385,000. However, due to an under-expenditure of \$110,000 in Phase 1, the purchase order with Five Winds needs to be increased by only \$275,000. During the completion of Phase 2, staff will be phasing out the degree of involvement of Five Winds as staff becomes more knowledgeable and experienced with Green Procurement issues.

JUSTIFICATION

Award of the above contract will ensure the uninterrupted service of the consultant to assist in the implementation of Phase 2 of the Green Procurement Policy.

June 29, 2009
9-118-52

Attachment – Appendix 'A'
Appendix 'B'
Appendix 'C'

Appendix 'A'

Summary of Pilot Findings

Context and Process: seven pilot projects were identified by departments that addressed a range of purchasing situations: operational changes, new equipment purchases, and retrofits of existing facilities and systems. Some of the pilots supported existing projects and purchasing decisions, while others examined new situations. Each pilot project team calculated costs, identified environmental benefits, and assessed the technical feasibility of one or more alternatives to an existing product/system. The teams then evaluated the initial equipment costs and the recurring annual operating costs with a Total Cost of Ownership Excel-based tool, specially customized for the TTC. This tool provided summaries of the payback period, or time required to recoup the cost of TTC's initial investment to purchase and install new equipment. The potential annual cost savings include direct costs for consumables, utilities and waste disposal costs and do not include improved labour efficiency although these benefits were tracked. To facilitate learning the pilot coordinators met to share lessons learned and discuss results.

Pilot Project	Project Scope	Potential Environmental Benefits	Payback Period ¹	Potential Cost Savings ²	Recommendations
LED Flashlights vs. Conventional Radar Units	The 400 daily users from across TTC	7,400 kg waste eliminated/year	1 to 2 Months	\$545,000 to \$745,000 <i>Note: savings is based on the assumption that the 400 users switch from the Radar to LED flashlights. This scenario is unlikely at this time.</i>	<i>The TTC is already starting to use the LED flashlights, where appropriate. Further analysis is needed to determine the needs of all users and whether suitable LED replacements are available that will have the full functionality (i.e. hands free) of the radar flashlights.</i>
LCD Computer Monitors to replace CRT monitors	Annual replacement of 400 monitors	600 kg Greenhouse gas emissions reduced/year	1.4 years	\$6,000	<i>Rerun analysis once new IT waste disposal costs are determined</i>
Reusable Pallets vs. Wooden Disposable Pallets	Replacement of 75 pallets over 5 years (at 1 M&P warehouse)	480 kg waste eliminated/year	4 years	\$2,700 <i>Note: Savings based on only 75 pallets</i>	<i>Proceed with a pilot field test as the TTC receives thousands of pallets and also disposes of thousands of pallets every year.</i>

¹ Time required to recoup the cost of TTC's initial investment to purchase and install new equipment.

² Savings are annual direct costs for consumables, utilities, and waste disposal costs. Potential indirect cost benefits through improved labour efficiency were also identified, but are not included in the table.

Pilot Project	Project Scope	Potential Environmental Benefits	Payback Period	Potential Cost Savings	Recommendations
Tankless Hot Water Heaters vs. Conventional Units	Heaters to meet the hot water needs of one station (Bessarion)	None, existing power supply configuration precludes utility savings	None	None	Monitor for technology improvements that would allow for the application to work with existing electrical infrastructure or new installations.
LED Lighting vs. fluorescent lighting at subway station retrofit	Specific experimental application at St. Andrew Station	Cannot be determined based on pilot of current generation of LED lighting	None with current generation of LED lighting	Further analysis is required for subsequent generations of LED lighting	Monitor progress in LED technology. Consider testing of LEDs where appropriate, in other applications (e.g. external lighting and signage)
Hand Dryers vs. Paper Towels	265 Hand dryers (70 stations)	35,000 kg waste eliminated/year 9,900 kg Greenhouse gas emissions reduced/year	5 years	\$110,000	Consider proceeding with a field test at one station and determine if electric hand dryers are acceptable from a hygiene perspective
Bio-based hydraulic oil vs. petroleum oil	Analysis for 86 elevators	Use of oil based from renewable resources; however, full life cycle benefits are unclear	None	None	Monitor for life cycle improvements that could improve the feasibility of bio-oil as appropriate.

Interpreting the Pilot Results

To fully understand the results and implications of the pilots the project summaries should be reviewed. Cost and environmental benefits identified are estimates only and are based on data used for the pilots and actual benefits and costs will vary from this analysis. Some key information that needs to be considered for the pilots where further investigation may be warranted is described below:

LED Flashlights: The analysis limited to the 400 daily users and could be expanded to include the additional 1000 intermittent users. The LED flashlights do not currently provide the same hands free function as the radar lights – to address this a conservative proxy of a rail mount accessory was used in the analysis however, it is expected that the TTC will be able to source comparable products in the near future. The key source of cost savings were the reduction in consumables, i.e. high rates of bulb, battery and unit replacements for the radar flashlights.

LCD/CRT computer monitor switchout: The TTC's IT Services Department has been replacing CRT monitors with LCD monitors as part of its normal life cycle maintenance strategy. The research and data collected internally by the IT Services Department was used for the total cost analysis. Cost savings are primarily from reduced energy use and lower storage costs of LCD monitors. The new Ontario Electronic

Stewardship program will increase waste disposal costs and this may increase the payback period and reduce the annual cost savings. It may also be possible, if LCD prices continue to decrease, that overall savings may increase.

Reusable pallets: This analysis was limited to the potential replacement of 75 disposable pallets in a single warehouse over 5 years, through the use of 150 reusable pallets. The most significant cost savings is reduction in waste disposal. Reusable pallets are more durable and have a longer lifespan than disposable pallets, but cost more and while there may be an upfront purchase price for the pallets, it could be absorbed by the suppliers.

Hand Dryers vs. Paper Towels: The pilot explored opportunities for installing hand dryers in the employee washrooms in subway stations. The most significant savings were in reducing waste disposal, lowering the amount of labour time associated with maintaining the paper towels system, and reducing costs for consumables (e.g. paper towels). Implementation considerations should address any hygiene questions and the need to re-wire certain washrooms to accommodate hand dryers.

LED Platform Lights: This pilot looked at the experimental application of a LED lighting system replacing one section of the traditional fluorescent system at St. Andrew Station platform. The primary goal of the pilot installation was to technically evaluate the performance of new emerging technology (LED) and pending successful evaluation, adopt to current light fixture and installation standards. Given the limited scope of the pilot project, there is some indication that future generations of LED lighting may have the potential to reduce energy, material and maintenance costs; however, there are outstanding cost and performance considerations (i.e. illumination levels, replacement cost, disposal cost) with the current generations of LED lighting. The TCO tool can only be used after LED lighting is determined to be acceptable for the application.

APPENDIX 'B'

TTC Green Procurement: Phase 2 Draft Implementation Plan

Background

This Plan has been developed to support the continued implementation of the Green Procurement Policy. It assumes implementation of the policy over three Phases as shown below.

Phase 1 (complete) July 2008 – June 2009 Developing capacity and tools	Phase 2 July 2009 – December 2010 Instituting processes, procedures and systems	Phase 3 January 2011 - onwards The way we do business
<ul style="list-style-type: none"> • Establishing management structure and oversight • Engaging key departments • Identification of priority opportunities for integration green procurement • Training key personnel • Conducting pilot projects • Initiating changes to procurement processes • Developing support and communication mechanisms 	<ul style="list-style-type: none"> • Systematic integration into procurement processes across all departments • Fully engaging vendors • Establishing procedures to measure and quantify benefits • Developing standards • Developing a green information system • Outreach to other organizations/peers • Developing and incorporating environmental considerations into all specifications as standard revisions to bid documents 	<ul style="list-style-type: none"> • Established management tracking systems • Full integration into purchasing processes and specifications • Ongoing communication of results • Continue outreach and collaborative efforts • Ongoing training of new employees as required

Phase 2 (July 2009 – December 2010) – the subject of this Plan – will focus on systematic integration of Green Procurement into selected procurement processes and procedures managed by Materials and Procurement and utilized by all departments. It also includes the development of Commission-wide standards, performance measurement systems and continued management oversight. This builds on the work done in Phase 1 to establish the required infrastructure, communication links and internal capacity for the Policy implementation. It is anticipated that the Phase 2 projects that will be undertaken will lead to environmental benefits and may, in some cases, reduce costs.

By the end of Phase 2 it is expected that Green Procurement will be effectively “hardwired” into TTC purchases processed by Materials and Procurement. Note, the Plan also assumes all Departments are integrating Green Procurement through their 2010 Goals and Objectives.

Phase 2 activities will continue the Commission's commitment to improving purchasing practices by integrating environmental considerations into appropriate purchasing process (including revisions to related bid documents) , as industry and technology advances become available. It also recognizes that as a major purchaser of goods and services the TTC continually seeks opportunities to encourage and influence markets for Environmentally Preferable Products and Services while remaining fiscally responsible, ensuring a competitive bidding process and maintaining the continued safe operation of the Commission. It is expected that Phase 3 of Green Procurement which will begin on January 1, 2011 would require minimal involvement of external consultant services.

Phase 2 Objectives:

The July 10, 2008 Commission Report on the Green Procurement Policy outlined Phase 2 to include "...a strategy, plan and schedule and define the requirements for a progressive and sustained approach to the implementation of the GPP to include environmental considerations into all appropriate Commission purchases." To this end, Phase 2 has the following objectives:

1. Establishing a timeframe for integrating environmental considerations into major specification and purchasing activity of annual and multi-year contracts as standard practice. This will include a plan for existing contracts expiring over the next two years as well as a plan for any new contracts as they arise. All contracts effective January 1, 2011 will include appropriate environmental considerations.
2. Establish 10 TTC wide environmental considerations on key product categories and activities (e.g. packaging, furniture, lighting, IT equipment, etc.).
3. Quantify the environmental and cost benefits of the TTC's Green Procurement activities where applicable and feasible. This will be done through the finalization of a Green Procurement Information System to track green initiatives.
4. Execute 3 collaborative innovation projects with vendors to achieve mutual environmental and cost benefits (e.g. reduction/alternative packaging, energy, chemicals, waste, etc.).
5. Execute 5 new pilot studies to support Materials and Procurement in selecting environmentally preferable products or services.
6. Ongoing training of current and new staff with procurement and specification responsibilities on Green Procurement and Total Cost of Ownership tools and techniques. The TTC will take over the training of all staff over the course of Phase 2.
7. Communicate lessons learned, progress and benefits achieved to internal and external stakeholders. Integrate operational procedures with members of CUTA, APTA, GP Council and the City of Toronto for normal business practices.

Overview:

To achieve the above objectives a range of activities are recommended. These are outlined below and organized into four components:

1. Action and Innovation

2. Capacity Building and Training
3. Communication
4. Implementation Management

Component 1 - Action & Innovation

The activities in this component support the achievement of Objectives 1 through 4 above. Specific activities under this component are:

Activity 1 – Change Key Procurement Processes

- i. Continual review of all TTC's procurement procedures, approvals and authorizations to ensure seamless integration of business practices.
- ii. Develop appropriate bid evaluation techniques where Green Procurement considerations are involved.
- iii. Develop a guide and process for Departments to apply the procedures into purchasing activity where appropriate.
- iv. Standardize the approval process with the TTC's Safety Department for evaluation/approval of environmental responsible products to help vendors and departments evaluate and accelerate the adoption of innovative, green products/services/equipment.
- v. Rationalization and consolidation of the various supply and disposal contracts for fluorescent lamps, electronic components and disposable batteries.

Activity 2 - Establish TTC wide environmental considerations for 10 key products categories or materials

- vi. Identify key product categories or materials (e.g. packaging, furniture, lighting, IT equipment)).
- vii. Establish stakeholders for participation.
- viii. Review existing external standards and best practices (e.g. Forestry Stewardship Council for paper, etc.).
- ix. Develop environmental specifications/standards, as appropriate.
- x. Implement and integrate specifications/standards into contracts as appropriate.

Activity 3 – Evaluate options and costs for Green Procurement Tracking System activities and benefits

- i. Develop scope and define requirements.
- ii. Evaluate technological options.

- iii. Examine other management systems within TTC to evaluate available management information.
- iv. Evaluate costs and resource implications.
- v. Develop recommendations and associated costs for designing, building and implementing the system.
- vi. Develop and implement system by December 31, 2010.

Activity 4 – Conduct 3 collaborative innovation projects with key vendors

- i. Initiate 3 projects with key vendors (e.g. Daimler, Bombardier, Harper)
- ii. Evaluate opportunities to reduce common environmental impacts and costs through green procurement products (e.g. reduced packaging, optimisation of logistics, recycled content).
- iii. Demonstrate benefits and development of a procedure for engaging vendors.

Component 2 - Capacity Building & Training

The activities in this component support the achievement of Objectives 5 and 6. These activities will ensure that staff involved in procurement (buyers, specifications writers, contract administrators, design engineers, etc.) improves the skills and resources to make sound green procurement decisions. Specific activities are as follows:

Activity 1 – Continue Delivery of Advanced Green Procurement Training

- i. Staff with procurement responsibilities in Departments not trained under Phase 1. M&P will take over the sole delivery of the training as of January 1, 2011.
- ii. New personnel in departments that require training (e.g. selected staff within Engineering & Construction).

Activity 2 – Development & Delivery of Total Cost of Ownership Training

- i. TCO Training. Specific TTC staff in key departments will be trained on the use of the Template to ensure consistent application of the principles, methodology and calculation of Total Cost of Ownership when evaluating product/service alternatives.
- ii. Establish TCO Support Function. The TCO Tool developed during the pilot projects in Phase 1 will require a “TTC owner” to maintain and be a centre of knowledge on its use and methodology.

Activity 3 – Execute 5 Green Procurement Pilot Studies

- i. Conduct 5 detailed green procurement pilot studies within Materials and Procurement utilizing TCO and other GP tools as appropriate. The outcomes of these studies will be specific recommendations on environmentally

preferable purchases with a comprehensive estimate of environmental and cost implications.

Component 3 - Communication

The activities of this component will support Objective 7 and ensure effective internal and external communications with key stakeholders who need to be informed about TTC's GP efforts. Specific activities include:

Activity 1 - Internal Communications:

- i. Develop and post additional content to the internal Green Procurement Website (internal) (e.g. TTC wide specifications/standards with environmental considerations incorporated, procedures, guidelines, best practices, clauses, new training materials, etc.).
- ii. Develop and circulate New Employee Package on Green Procurement in collaboration with Human Resources.
- iii. Develop and publish bi-monthly Coupler articles.
- iv. Develop and circulate bi-monthly Green Procurement Newsletter to all procurement and specification staff (e.g. GP newsletter).

Activity 2 - External Communications:

- i. Develop and post additional content for external Green Procurement website pages (part of M&P external WebPages) as appropriate.
- ii. Deliver 6 Vendor Engagement Workshops.
- iii. Participate in Vendor trade shows as available.
- iv. External collaboration and outreach to Canadian Urban Transit Association (CUTA), American Public Transit Association (APTA), Transportation Research Board (TRB), etc.
- v. Establish ongoing communication and collaboration with City of Toronto and other transit authorities and organizations (e.g. Green Procurement Leadership Council) on green procurement initiatives.

Component 4 - Implementation Management

The activities in this component will ensure management, oversight and successful achievement of the above activities and the Phase 2 Objectives. As in Phase 1, the Green Procurement Steering and Working Committees will have the responsibility for implementation of the Phase 2 Plan. Specific activities include:

Activity 1 – Monitoring and Reporting of Progress

- i. Monitor overall progress across Departments to ensure achievement of Objective 1 (i.e. All Departments integrate environmental considerations into all appropriate purchasing activity by 2012).

- ii. Ongoing review of outcomes and progress against Phase 2 plan.

- iii. Ongoing training of Green Procurement Co-ordinator on performance measures, reports, etc. related to Green Procurement.
- iv. Report to the Commission, Management Group and Departments as required.

Activity 2 – Oversight

- i. Establish and set priorities to ensure interrelationship of Green Procurement to other corporate priorities, including the overall environmental management system.
- ii. Monthly Steering and Working Committee meetings.
- iii. Support Departments and Sections as required.

Activity 3 - Review and Co-ordination of Departmental Green Procurement Goals and Objectives

- i. Review each Department's 2010 Green Procurement Goals and objectives and suggest performance measures.
- ii. Consolidate reports on each Department's 2010 Green Procurement Goals and Objectives against established performance measures.
- iii. Support the establishment of Departmental 2011 Green Procurement Goals and Objective.
- iv. Revise Guide for Setting Green Procurement Goals and Objectives, processes and performance measurements as appropriate.
- v. Provide specific advice to Departments and Sections as appropriate.

Activity 4 – Management Engagement

- i. Conduct a half day training session for Commissioners, Senior Managers and Department heads on Green Procurement.
- ii. Establish Green Procurement presentations, case studies, key messages for Management's use in internal and external meetings.

APPENDIX 'C'

HIGH SPEED COPIERS AND OFFICE EQUIPMENT

At its meeting of April 27, 2009, the Commission approved the purchase of a Xerox DocuColor 7000 Digital Press from the Xerox Corporation. During the approval process, a question was raised by the Commission regarding environmental considerations with respect to this type of equipment as well as PC's, Copiers and Fax Machines (i.e. energy usage, environmentally friendly construction/disposal etc.).

The Xerox Corporation (Xerox) as well as the CompuCom Systems Inc. (CCSI) (TTC's supplier of desktops and laptops) and 4Office Automation (4Office) (TTC's supplier of copiers, fax machines) each have Green Procurement Policies that deal with such subjects such as environmentally sensitive materials, product longevity/lifecycle extension, energy conservation, packaging and materials selection.

With respect to the Xerox Digital Press, the desktops and laptops from CCSI and the copiers and fax machines from 4Office, all products do not contain harmful substances such as; cadmium, lead, mercury, brominated flame retardants and hexavalent chromium compounds. They are all compliant with leading international regulations on restricted substances such as the European Union Restriction of Hazardous Substances Directive (RoHS). In the case of the products purchased from Xerox and 4 Office, they do not contain substances of concern such as antimony, beryllium and phthalates. In the case of the products purchased from CCSI, these potentially harmful substances are all included in their timeline for phase-out between 2009 and 2015 by their manufacturer Hewlett Packard.

Regarding recyclability, the HP Compaq desktops purchased are 93.4% recyclable when properly disposed of at end of life, while the HP notebooks are 96.1% recyclable when properly disposed of at end-of-life. These products are designed with environmental sustainability in mind and can easily be dismantled for recycling/disposal.

Regarding energy use, the products from Xerox, CCSI and 4 Office are all compliant with Energy Star and Canada's Environmental Choice Ecologo criteria and meets the criteria for Energy Star 4.0.

The desktops are in compliance with the EPEAT standard at the Gold level, while the notebooks are in compliance with the EPEAT standard at the Silver level. EPEAT (Electronic Product Environmental Assessment Tool) is a system to help purchasers evaluate, compare and select electronic products based on their environmental attributes. The system currently covers desktops, laptops, workstations and computer monitors. Desktops, laptops and monitors that meet 23 required environmental performance criteria may be registered in EPEAT by their manufacturers. Registered products are rated Gold, Silver or bronze depending on the percentage of 28 optional criteria they meet above the baseline criteria. EPEAT operates an ongoing verification program to assure the credibility of the registry. It should be noted the EPEAT is working with a range of partners to develop standards for imaging equipment such as copiers, printers and fax machines by 2010.

In terms of packaging of the various products sold to the TTC, the materials used for packaging are cardboard and compressed cardboard which is made from recycled content. The wood used in packaging of the digital press is made from wood from damaged wood skids. All packaging materials can be recycled.