

## Printing Devices & Imaging Equipment

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### *Did you know?*

*Replacing an office copier, four laser printers and a fax machine with a single multifunctional device can reduce energy consumption by approximately 40 percent. (U.S. Environmental Protection Agency).*

## Minimum Sustainable Recommendations

Request suppliers to provide printers, photocopiers, faxes and multifunction devices (MFD) that meet the following criteria:

- Printing devices and imaging equipment must be at least EPEAT Silver Certified.
- For MFDs and printers, vendor must provide the following information:
  - Life expectancy per printed page for all consumables including drums, cartridges, fuse kits, document feeder kits, roller kits, and image kits.
  - Details of their take back program and the recycling of all packaging materials.
  - A lifecycle cost analysis considering the cost of the device(s) from initial purchase through deployment, maintenance, support, management and disposal. The evaluation should include the cost of the initial hardware as well as all other factors including the cost of consumables (paper and toner) and energy consumption.

Bid documents must communicate to suppliers the expectation to purchase goods made from electronic manufacturers that are working towards a “conflict mineral free” supply chain. Ask that they provide the manufacturer’s policy and proof of their involvement in programs aimed to establish a conflict-free supply chain of Tantalum, Tin, Tungsten and Gold (3T+G).

Print devices and imaging equipment must follow universal design features to accommodate a variety of users to ensure conformance with the Accessibility for Manitobans Act <http://universaldesign.ie/What-is-Universal-Design/The-7-Principles/>. The supplier must provide a description of the accessibility features of the products being offered. The features must address and provide solutions to accessibility barriers including, but not limited to:

- **Physical**
  - Difficult to reach
  - One hand only
  - Use of a walking aid
  - Cannot use fingers
  - Limited strength
- **Cognition**
  - Memory issues
  - Learning difficulties
  - Language barriers
- **Emotions**
  - Tension and frustration
- **Sensory**
  - Blurred vision
  - Low vision
  - Difficulty viewing small text and numbers
  - Colour differentiation
  - Hearing difficulties

This document contains key considerations and suggestions for sustainable specifications and standards. Use of these specifications are intended to be guidelines for public sector procurers. Mention of any company name or product does not constitute or imply endorsement.

### Other things to consider

Work with your Information Technology (IT) Department, analyze existing hardware and IT systems and select additional hardware, software and network options (if applicable) to further reduce and track the paper use associated with the devices. Considerations should include:

- Request fax software to send/receive faxes via the personal computer.
- Request scanning program capabilities such as:
  - Scan-to-email
  - Scan-to-file
  - Document archiving and retrieval system
  - Optical character recognition (OCR)
- Request auto-delete functionality to delete abandoned print jobs in the print queue after a specified period of time.
- Request electronic signature software for the capture, binding, authentication, and verification of electronic signatures in digital documents.
- Integrate document applications software within the IT infrastructure to enable highly efficient automated processes.
- Purchase software that tracks paper usage by department, user or device to provide statistics on duplex and single sided printing to support device use management.

Also consider moving towards a paperless office. Use a document processing systems that can reduce or eliminate the need for paper documents.

### What are the issues?

The environmental impacts of printing devices such as laser printers, copiers and fax machines occur from the device itself (hardware), as well as the consumables (toner and paper).

The two of the most significant environmental impacts associated with the device are:

- The amount of energy required to produce and operate the device. This depends on the type of device, the marking technology (e.g., thermal imaging, InkJet), the operation mode (sleep mode, active mode), the printing speed and the device size.
- The quantity of heavy metals such a lead, mercury, cadmium, chromium and bromated fire retardants in the device, associated wires and cables. These chemicals pose risks to workers during the manufacturing process. As well, when the devices are disposed of in landfills, surrounding soil and water supplies are at risk.

In addition to the impacts noted above, it is important to address issues associated with manufacturer use of conflict minerals. Many of the electronic devices used every day such as cell phones, computers and cameras, may contain conflict minerals such as gold, tantalum, cobalt, tin and tungsten. These materials are often extracted against a backdrop of human rights abuses and armed fighting.

There is also air and noise emissions generated when the printing device is in operation and may have a negative impact on the indoor environment. Air quality is affected by the ozone generated from the printer, and the solvents and dust from the toner. Noise emissions, determined largely by printing speed and the device design, structure and quality, can be a significant concern in an office environment.

The Accessibility for Manitobans Act and its related standards require entities to identify and prevent barriers to accessibility in operations. For a person who has a physical, mental, intellectual or sensory impairment, a barrier is anything that interacts with that impairment in a way that may hinder the person's full and effective participation on an equal basis. Ensuring that goods and services we procure do not create new accessibility barriers is therefore important.

## What are the options?

Your office needs will help you determine your device requirements. Consider a multifunction device which combines a printer, fax, scanner, copier and document management into one package. Multiple capabilities from a single print engine means less energy consumed. One print engine idling uses less energy than three print engines (fax, copier and printer) idling. In addition, one device reduces the need for wiring and cables further reducing our use of natural resources.

The EPEAT program provides certification for “office machines” which includes printers, photocopiers, faxes, multifunction devices and mailing machines. This third party certification program addresses many of the environmental challenges associated with the manufacture and use of office machines. The criteria also restricts hazardous substance use during manufacture, requires improved energy efficiency (ENERGYSTAR) and stipulates the use of design criteria, extending the products life through reuse and recycling.

The criteria also requires that paper, toner, and ink saving criteria include:

- Automatic duplexing (double-sided) capabilities and be programmable by the end-user such that the duplexing mode may be set as the default mode.
- “N-up, “Multiple-up” capabilities to print up to four document pages per sheet.
- The devices can use post-consumer recycled paper and remanufactured printed cartridges, with no hardware restricting replacement cartridges to those from the Original Equipment Manufacturer (OEM);

Emissions reductions associated with sustainable print devices can result from the selection of features that reduce paper use. Switching printing practices to duplexing alone will significantly reduce the use of paper, thereby saving trees and saving landfill space. Printers equipped with duplexing trays and corresponding double-sided copying policies can reduce paper use by 30 to 35 percent.

Selecting printers with duplexing capabilities and assuming employees use this feature 30% of the time, an office with 15 employees can, on average, reduce paper consumption from 150,000 sheets per year to 105,000 sheets. Using

[www.papercalculator.org](http://www.papercalculator.org), an office with 15 employees can expect an emissions savings of 475 kg of CO2 equivalents per year.

From an accessibility perspective, a number of features can be implemented to reduce barriers and enhance accessibility of printing devices. Both modifying the built environment (i.e. ensure displays are within sight of people of all heights including people sitting in wheelchairs and scooters, etc.) and incorporating technical specifications to enhance the functionality of printing devices and programming the device to enhance accessibility. This document focuses on the technical specifications of the item itself.

To prevent barriers, the product should follow the seven principles of universal design (Equitable Use, Flexibility in Use, Simple and Intuitive Use, Perceptible Information, Tolerance for Error, Low Physical Effort and Size and Space for Approach and Use). <http://universaldesign.ie/What-is-Universal-Design/The-7-Principles/>

