



Rapid Response

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Rapid Response Research Service Hardware and Software to Reduce Paper Use

Requestor: City of Portland

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Request

The City of Portland wants to know the best technology and programming opportunities for the quest toward a paperless office. (The City is already addressing many of the common behavioral changes, such as: reusing paper printed only on one-side, copying and printing double-sided, electronic document/fax sharing, and, minimizing printing of emails, documents, and websites).

Background

According to reduce.org:

- The average office worker uses **10,000 sheets** of copy paper each year.
- The United States alone, which has less than 5% of the world's population, consumes 30% of the world's paper.
- Over 40% of wood pulp goes toward the production of paper.
- Printing and writing paper equals about one-half of U.S. paper production.
- The costs of using paper in the office can run 13 to 31 times the cost of purchasing the paper in the first place.

Greenprint's Report, [How to Reduce Printing Costs](#) by 17%, states that 56% of people aged 45-54, print internet material as a way of archiving.

This information suggests heavy use of paper for business purposes. Some good news is that more and more businesses are working toward reducing paper use and becoming more aware of the impacts of paper use. There is extensive information on the web relating to behavioral changes and policies to reduce paper use. As an example, see the City of Portland's [Follow the Paperless Path](#).

Another example is the State of Washington's [Paper Recycling and Conservation Act](#), which was signed into law in May 2009. The Act includes requirements that the state government:

- Reduce printing and copy paper use by at least 30 percent, beginning no later than July 1, 2010.
- Restrict future leases or purchases of printers and copiers to models that will efficiently use 100 percent recycled content white sheet bond paper.

Aside from behavioral changes, there are also hardware and software options that may assist in the quest to reduce office paper use. Some suggestions are provided below.

Disclaimer: PPRC does not endorse or take responsibility for functionality of any products discussed below.

Scanning

Scanning can be an important part of the strategy for an office to reduce the need for paper copies. Scanning technology is advanced, and scanners are available as stand-alone units, or as a capability in many brands of multifunction devices.

Scanners allow documents to be scanned to e-mail or file. Depending on the capabilities of the scanner, files can then be edited, e-mailed, faxed (by PC), and/or archived. One model with scan-to-email or scan-to-repository, allows users to scan a document, select an email address, and send the document one of two ways: either attached as a PDF file or placed directly into a repository. Using scan-to-repository, the email recipient receives a Web link to the document residing on the network. Another benefit of scanning is the ability to archive and retrieve documents by converting them to a searchable pdf file.

Software

There are plenty of software and built-in program features options that can assist in document sharing, revision, and presentation – all by computer instead of paper. Some options and features include:

- Use revision /change tracking features in word processing software. You can edit documents on screen instead of printing out drafts and making hand-written comments.
- Use [“N-up”](#) or “multiple-up” settings to print up to 4 document pages per sheet, although this may sometimes prove to be too small of print for some readers.
- Use collaboration websites and software: Google Groups, Google Apps, SharePoint, TeamSpot are some collaboration software and tools that allows work and ideas to be shared over the web and your personal computers. Exchange documents without having to print them out.
- Send bids, RFPs, invoices, orders, etc. online (saves envelopes, postage and time too!)
- Check out [Greenprint’s software](#) – which claims to eliminate extra pages and other tasks.
- Use document editing software to be able to print labels directly on the back of a flyer – such as a tri-fold mailer - to avoid using labels or an envelope.
- [“Save Paper, Save Money: 5 Free Software Downloads That Spare Your Printer”](#) is an article from TreeHugger at www.treehugger.com, a leading media outlet dedicated to driving sustainability.
- Use embedded fax software to send/receive faxes via the PC.
- Connectivity software makes it easy to connect work stations to printers or multifunction devices. Network connectivity is another distinguished feature of certain multifunction units, which enables scan-to capabilities, as well as additional security.
- If possible, within printing software, consider programming a printer dialogue box before each print job is sent, asking the sender if “Do you really need to print this document?” This may get irritating to users, but may also be a good check.
- Change all network computer print preferences to double-sided printing.

- For scanning, some or all of the following program capabilities may be helpful in the quest to reduce paper:
 - Scan-to-email
 - Scan-to-file
 - Efficient document archiving and retrieval system
 - Optical character recognition (OCR)
- On print devices, check for auto delete functionality which deletes abandoned print jobs in the print queue.
- Consider electronic signature software and pads for the capture, binding, authentication, and verification of electronic signatures in digital documents. Tablet PCs also allow transfer of signature to electronic documents.
- Use [print-on-demand or publish-on-demand](#) services or technology. Print manuals, catalogs, newsletters and even books ONLY as needed.
- Use online survey services such as Survey Monkey in lieu of hard copy surveys.
- Create [word processing](#) or pdf-based input forms that allow digital data entry, digital work processing and digital storage. *One example of pdf-based software is [pdfDocs formfiller](#).*
- Use webinar interfaces and other virtual meeting type programs, which allow an online presentation rather than paper copies.

Hardware Features/Programming/Suggestions

In asking this rapid response question, The City of Portland also expressed interested in some of the desirable features and strategies relating more directly to the purchase and use of equipment.

Electronic Signature Capability

- A signature pad device, or tablet PCs allow for electronic signature, which may eliminate the need for a paper copy of signed documents.

Scanning Capabilities

- Color scanning
- Document feeder - allows rapid scanning of multiple pages
- Scan-to-email
- Scan-to-file
- Optical character recognition (OCR)

Fax

- Program fax machines (and printers) not to print cover or confirmation sheets.
- Eliminate fax cover sheets by using fax post-its.

- Work with suppliers/clients/contacts to encourage electronic correspondence.

Multifunction Devices (MFD) or Multifunction Printing or Multifunction Peripherals

- Choosing the right multifunction unit can be challenging, with the oversaturation of the market and hundreds of models available from high-end to personal units. Output speeds range anywhere from 6 to 110 pages per minute. This online article, [Today's High-End Multifunction Devices Improve Workgroup Efficiency and Reduce Your Document Costs](#), By Franky McCoy, offers sound advice on selecting multifunction printing devices – and discusses decision factors based on the user(s) needs.
- One reported drawback of MFDs when it is the only print/scan device in the office is that if the printer or copier function is not working; it can halt scanning or other functions until repair is complete.

Meetings and Presentations: LCD Projectors /Video-Teleconference Technology

- Use LCD projectors or video-teleconferencing capabilities in conference rooms and classrooms reduce the need for printed presentation or curriculum materials.
- Post meeting notes, handouts and slideshows online, rather than distributing them at meetings.

Additional Environmental Considerations for Reducing Impacts of Documentation

- Consider using a lighter weight paper. Less weight means using less paper.
- Reduce trim size. Shaving 1/4 inch off your book, magazine or catalog might save thousands of pounds of paper per year. Lower weight also reduces postage costs.
- Toner saving features: Some printer devices have a toner save mode which reduces consumption by up to 20% - without appreciably affecting print quality. And, for non-crucial documents, reduce the quality of print (aka "fast draft" under Print Properties) which reduces toner consumption.
- Purchase low-ozone emitting devices.
- Purchase Energy Star equipment and use power standby options.