

5. Get it produced.

Preparation.

- 1. Work closely with your printers/vendors throughout the process. A well-conceived production plan minimizes surprises, waste, added costs and mistakes.
- 2. Before sending your final design out to be produced, create a list of instructions and specifications (See "Print estimate/specification" tool). This exercise gives you a chance to double check dimensions, ink, paper, etc., while also providing the vendor with clear written instructions.
- 3. Carefully determine quantities to be printed in order to avoid overruns or reprints. Miscalculation here can be a large source of waste.

Printing.

Work with certified Great Printers. Great Printers go beyond compliance with environmental, health and safety requirements to reduce waste and pollution in day-to-day printing plant operations. For a listing of Minnesota Great Printers see www.pimn.org/environment/greatprinter.htm

Reduce negative impacts of lithographic printing through the following:

- dryography (waterless)
- computer-to-plate (CTP)
- direct imaging (DI)
- vegetable-based, low-VOC press washes

Specify only when it greatly increases functionality or effectiveness:

- embossing
- die-cutting
- engraving

Avoid whenever possible, may make paper difficult to recycle:

- spot varnish (specify vegetable-based)
- aqueous coating

Avoid altogether, generally renders paper unrecyclable:

- foil stamping
- lamination
- UV coating
- thermography

6. Send it out.

- 1. Use targeted, updated mailing lists and request address corrections.
- 2. Avoid air and rush delivery when possible.
- 3. Specify addresses to be applied directly onto pieces via ink-jet. Demand water-based, high-resolution ink jet technology over solvent-based ones.

7. Follow up.

- 1. Seek feedback from the client, vendors, etc., about what was successful and what could be done better next time. See "Printer follow-up form"
- 2. Stay up to speed. To make wise choices, you must know your facts and options.
- 3. Keep learning, exchange information with others, support and participate in relevant organizations—like ODO!

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Project worksheet. Use this worksheet, along with accompanying tools, to aid in the planning, design and production of ecologically-minded print projects.

client: _____ project: _____ date: _____

1. Define the problem.

Begin by answering a few questions about the project.

purpose (inform, sell, etc.)? _____

audience (social, economic, etc.)? _____

restrictions (budget, format, regulations, etc.)? _____

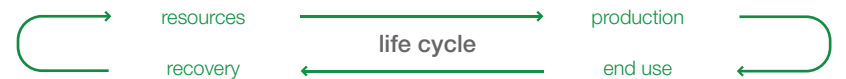
special requirements? _____

useful lifespan (a week, a year, etc.)? _____

quality of life? (durable vs. consumable, fixed vs. changeable, etc.) _____

2. Plan the life cycle.

Everything you create has a past, present and a future. Now that you have defined the problem, begin planning for a closed-loop, sustainable life cycle.



Resources. Source reclaimed (used, recycled) and renewable (for any virgin content) resources that are sustainably managed. Resources should also be recoverable after end use. See "Online resources" tool.

Production. Seek out socially-responsible manufacturers that utilize clean production technologies, resources and practices. Choose manufactures that are nearest the end user when practical to reduce transportation impacts.

End Use. Seek out the cleanest, most efficient and effective solution. (See 3.)

Recovery. Begin to plan for your project's end of life. Think about how you can enable end users to complete the cycle by designing for resource recovery (i.e. label recyclable materials and include any needed instructions).

3. Design the solution.

As a designer, you can have far more positive impact at the creative stage, long before anything is recycled.

Start with a powerful idea. Creative, deliberate solutions can be far more effective than those that rely solely on excessive use of resources.

Carefully select a medium/format. Take what you have learned from defining the problem and brainstorm the most effective and least resource-intensive medium/format in which to solve it. For instance, a problem may be solved just as well with an e-mail as with a postcard.

Estimate scale based on content. Using volume of content as a guide, determine the approximate scale of a chosen format. For example, it would be wasteful to design a 24-page brochure for twelve pages of content.

Determine actual size. Working backwards from stock press sheet sizes, determine the most efficient final dimensions for your design. Minimize trim waste through imposition or by avoiding bleeds. Ask your printer for help with special requirements like gripper margins, grain direction, etc. (See “Print estimate/specification” tool.)

Use resources wisely. Utilize both sides of paper, limit number of inks and ink coverage, gang projects together on press when possible, etc. Choose materials appropriate to function, lifespan and quality of life (See 1.).

Maximize functionality. Combine otherwise separate functions into a single piece (i.e., postcards with a built-in, perf-out rolodex card and brochures that incorporate a mailing panel—eliminating the need for an envelope). Expand function by building in a second use (i.e., paper swatch books that also function as sketchbooks). Extend the useful life of a piece by designing it for reuse (i.e., refillable milk jugs that may be reused many times over). Remember that reusable materials too must also be recovered at the end of their useful life.

Avoid frills. Don't add extras (i.e., foil stamping, thermography, UV coatings, lamination, varnishes, embossing and diecuts) unless to greatly extend the functionality or effectiveness of a design. Extras can be overkill from a design standpoint, consume additional energy and resources and, in some cases, can be problematic in the resource recovery process.

Work smart. Proof on-screen. Use e-mail, PDF's and the internet where appropriate. Reuse office paper—print on both sides and/or use for scratch paper. Set up an office recycling program. Create an office purchasing policy to buy recycled, recyclable and/or non-toxic products, and energy-efficient computers (Energy Star) and lighting. Turn off idle computers and utilize/support renewable energy sources such as wind and solar.

4. Specify resources.

Paper. Specify papers high in post consumer recycled content (non-deinked when possible) and processed chlorine free (PCF). Any virgin content should be derived from tree-free fibers (kenaf, hemp, etc.) and whitened totally chlorine free (TCF). Look for papers that are produced cleanly (i.e., renewable wind energy).

mill	paper name:	color:
<i>(see “Online resources” tool for sites that list environmentally-preferred papers)</i>		
pre consumer waste recycled content:	%	<input type="checkbox"/> TCF <input type="checkbox"/> PCF
post consumer waste recycled content:	%	<input type="checkbox"/> PCF <input type="checkbox"/> non-deinked
tree-free virgin content:	%	<input type="checkbox"/> TCF
basis weight:	lb.	<input type="checkbox"/> cover <input type="checkbox"/> text <input type="checkbox"/> other
<i>(specify the lightest appropriate weight)</i>		
finish:	<input type="checkbox"/> uncoated	<input type="checkbox"/> coated one side <input type="checkbox"/> coated
<i>(specify uncoated whenever possible)</i>		

Ink. Specify vegetable oil-based, low-VOC (Volatile Organic Compound) inks. Avoid colors that contain heavy metal compounds. Use recycled inks where possible.

Pantone Matching System (PMS) ink number(s):			
<i>(see “Online resources” tool for sites that list ink colors that contain heavy metal compounds)</i>			
<input type="checkbox"/> vegetable oil-based:	(<input type="checkbox"/> soybean <input type="checkbox"/> other)	<input type="checkbox"/> recycled ink	
min.	% vegetable oil content (by weight)	max.	% VOCs
<i>(specify 20% minimum for sheet-fed inks)</i>		<i>(specify 5% max.)</i>	

Adhesives & bindings.

Pasted binding. Specify pasted binding (similar to saddle stitch binding but without metal staples which must be removed during recycling) over saddle stitching when possible. Ask your printer to source paste that is water-based, vegetable-based, non-toxic and disperses in water.

Saddle stitching. When saddle stitching is a must, consider specifying one instead of two staples. Keep in mind, anything made from metal must be mined and processed, and so should be used sparingly.

Perfect binding. Specify water-soluble over solvent-based glues, hot-melts and toxic vinyl acetates (found in many padding compounds).

Labels. One alternative to crack-and-peel pressure-sensitive adhesives which may hinder recycling and employ a throw-away, silicone-coated liner sheet is gum arabic. Gum arabic is the same type of compound used on the back of lick-and-stick stamps and is water soluble, starched based and easily removed during recycling.