

Cartography Information Sheet

Cartography Services

Cartography is the art, science and technology of making maps, together with their study as scientific documents and work of art. In this context maps may be regarded as including all types of maps, plans, charts, cross-sections, three dimensional models and globes representing the Earth or any celestial body at any scale.



Historically cartography involved labour intensive means of capturing, interpreting, and drawing maps more like a craftsmen, but today it is virtually a totally digital process. Despite this, Tennyson Graphics prides itself on continuing the craft, employing two qualified cartographers who well understand the nature of both the technical aspects and design aspects of the production of all types of maps.

Tennyson Graphics has a well-earned reputation for excellence in the world of cartography. We offer a full range of prepress services from map design through to colour proof and separations. As a result our customers have learned to expect very fast results which exactly meet their specifications.

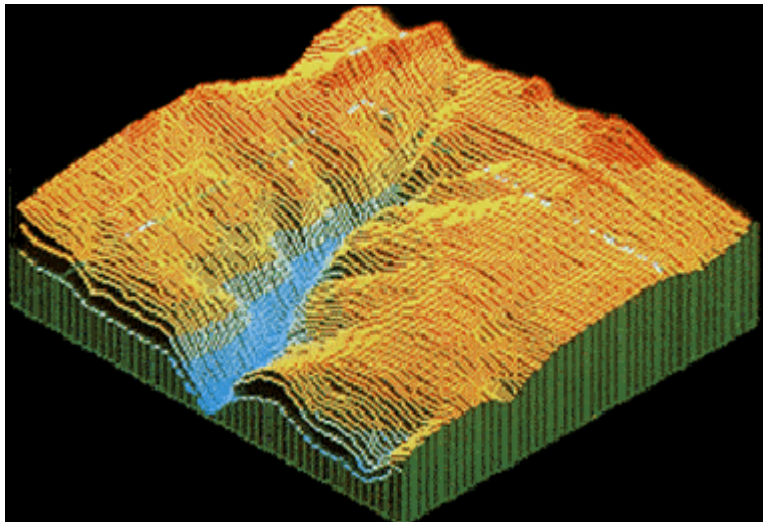
- **Map Design** - let our graphic artists and cartographers come up with a design for you.
- **High Resolution Scanning** - B&W scanning up to 1010mm x 1850mm (39.5" x 73" approx.) in resolutions from 100 to 2540 dpi approx. Color artwork can be scanned in resolutions from 100 to 800 dpi approx. for sizes up to 840mm x continuous.
- **Digitization** - converting map images into a digital format by raster scanning and vectorization. Contour information can have height values assigned, and DTMs created.
- **Color Separations** - highly accurate CMYK or special color separations from digital data up to 1010mm x 1850mm, with screen rulings up to 300 lpi. We have vast experience with atlas work, topographic and special thematic map projects.
- **Digital Proofing** - up to A0 size (840 x 1160mm) on various stock. Being a digital proofing system infers that no film is needed. The color profile has been matched closely with the Chromalin Proofing System, but other color profiles can be produced if required.
- **Hill Shading Artwork** - with the special mix of art and science, Tennyson Graphics has very successfully produced hill-shading artwork for several atlas productions.

Cartography Information Sheet

Scanning & Vectorization

Tennyson Graphics can convert your conventional map data into accurate vector data. This process consists of five steps:

- **Raster Scanning** - Tennyson Graphics uses one of six precision scanners to get the best possible scan from the original artwork. The choice is dependent on the application. We can scan original B&W artwork up to 1010mm x 1850mm in resolutions from 4 to 100 points/mm (100 to 2540 dpi approx). Color artwork can be scanned in resolutions from 4 to 160 points/mm (100 to 400 dpi approx) of sizes up to 840mm x continuous.
- **Pre-Vectorization Editing** - this includes some automatic editing of the file to clear the background noise, to separate lines unintentionally touching (especially contours), eliminating spikes, as well as some freehand correction of the image.
- **Vectorization** - if line thicknesses are not required, lines can be reduced to a one-dimensional skeleton, by automatic thinning, which produces simple, accurate x,y coordinates. If required, line thicknesses can be classified into different overlays.
- **Vector Editing** - editing features include the perfecting of line intersections; closing gaps and converting dashed lines into continuous solid lines; and recognizing of arcs, splines and text. Other important vector editing abilities include: vector data sets can be transformed into various formula-defined projections; up to 10,000 polygons can be identified numerically for applications such as thematic mapping; and Tennyson Graphics has the capability for contour value labelling, and that data then can be converted to a digital terrain model (DTM).
- **Digital Output** - after vectorization and any further editing functions such as those described above, the x,y coordinates data can be output in a format to suit. Common formats being EPS, IGES, DXF and SIF.



Color Separations & Proofing

Color Separation

Tennyson Graphics can produce CMYK or special color separation up to a size of 1010 x 1850mm (39.5" x 73" approx.) using the large-format Scitex Electronic Laser Plotters. Screen rulings and registration are controlled digitally for utmost accuracy. Our maximum output resolution is 2540, enabling Tennyson Graphics to supply film screens up to 300 lpi, positive or negative on film thicknesses of 4 thou or 7 thou. Accuracy of our laser plotters is ± 25 microns over the entire plot area of 1010mm x 1850mm.



Digital Proofing

Tennyson Graphics uses the IRIS color proofing system for digital color proofs. Our maximum sheet size is 841 x 1189mm (A0 size) for gloss, matte or semi-matte paper stock. We can print onto various other media including canvas and linen.

Being a digital proofing system infers that no film is needed unlike chemical or machine proofing systems. The color profile has been matched closely to Chromalin proofing, other color profiles can be easily produced if required.

Cartography Information Sheet

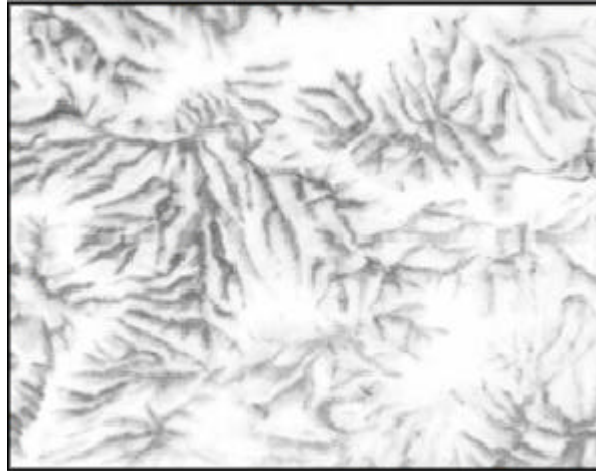
Hill Shading

Tennyson Graphics has produced original hill shading artwork for in several large atlas projects. This combines two of our best talents - fine art skills and cartography.

We have a large library of atlases which we can use to research which technique would suit your purpose. We use a variety of sources to reference the hill-shading, and in conjunction with your map data (specifically coastline, water features, and preferably other physical data such as contours and mountain peak information) we set to work on this exacting, slow process. Once a sample area has been completed and approved, we progress to the main project.

To maintain consistent style through out an atlas project or series of maps, it is necessary that the artwork is completed by the one artist. This makes it a rather slow process, however hill shading can commence as soon as the data, mentioned above, is available.

Tennyson Graphics can provide the artwork to you as drawn (top picture), but we prefer to supply it as an overlay that you can combine with your black (usually) separation or supply the complete black separation. The reason for this is that there are several adjustments that may need to be made to improve the readability/legibility of text, such as selecting the best gray tone for the shading or creating a clear "halo" around text (see right).





Cartography Information Sheet

Further Information & Links

Downloads

[Cartography information contained in this website](#)

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Contacts

[Tennyson Graphics International Pty Ltd](#)

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Australian Contacts

[Australian Defence Imagery & Geospatial Organization](#)

[Ausway Street Directories](#)

[ESRI Australia](#)

[Geoscience Australia](#)

[Melbourne Map Centre](#)