

MAJOR TOPOGRAPHIC PROJECT

CHILLIWACK, BRITISH COLUMBIA



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In Canada there exist a couple of major issuers of topographic maps: *The National Topographic System* and *Toporama* (produced by the Atlas of Canada). Their maps are an all purpose product aimed at general use with a coverage that spans the country. NTS produces maps at scales of 1:50 000 and 1:250 000 allowing for choice in detail. The *Toporama* maps designed by the Atlas of Canada utilize NTS data but have crafted this centennial project using their own set of symbology.

While these two sources provide generic, informative maps; each has drawbacks. The overall aim of *Artography* is to address these shortcomings by providing an alternative for those users whose needs are not met. This new topographic line will be accurate, attractive and affordable.

An example of this new product will be demonstrated though the mapping of Chilliwack, British Columbia.

TOPOGRAPHIC MAPS:

Topographic maps, broadly defined, are maps that represent landform relief by the use of contour lines and/or a hillshade as well as man-made features. These small scale maps are distinguished by their primary aim to inform the reader of the geographic and cultural features that are present in a given location. The users of these maps are diverse ranging from industrial companies such as mining and oil to large scale urban planning and recreation.

CHILLIWACK, BRITISH COLUMBIA:

Initial settlement of this portion of British Columbia occurred around the approximate time of 1782. Over the intervening years, the river bank was swollen with in influx of both miners and gold seekers resulting in the eventual shift from the shores to an area farther inland. These would become the first real centres of Chilliwack. The township of Chilliwack was established in 1873 boasting a sophisticated steamboat ferry system and good arable land. As the settlement continued its expansion the centre of gravitation inland became known as Five Corners. By 1887 with the population spreading, the more popular name of Chilliwack took root and was thus renamed. The district and town of Chilliwack merged together in 1980 forming what was referred to as the District of Chilliwack. In 1999 yet another name change befell the area – instead of District, the town and surrounding parts became simply, the City of Chilliwack also changing the spelling of the name.

Today, the population of the city is approximately 80 000.

DETAILS AND OBJECTIVE

In order to understand the concept of the new line of `Artography Topographic Maps it is necessary to itemize the issues it will be addressing and the solutions that it presents. Each drawback is followed by an action of improvement `Artography will undertake to create a more cohesive and understandable product. The current design of topographic maps fails the user in a number of ways:

⚡ The colour choice prevalent in the majority of existing topographic maps is both unattractive and difficult to view for extended periods of time.

✓ **Solution:** *Choose an appropriately contrasting and sensible colour scheme that will be unobtrusive and easy to read.*

⚡ Text placement leaves much to be desired in that it is often hard to match the feature that is being labeled with its proper text. This overall lack of precision can be confusing to the reader and inadvertently cause them to infer inaccurately the various names of features on the map.

✓ **Solution:** *Issue quality control over text placement with special attention to rivers, streams and brooks. Choose typefaces that are contrasting: legible serif font for hydrography, a sans serif for land based features and built up areas, a condensed font for landform features such as mountains and spot heights.*

⚡ The symbology on current topographic maps can also be misleading. Either the symbols do not adequately represent the features or their placement is suspect e.g – improperly angled building such as churches and other buildings of interest. Not only do these building symbols dominate and overlap streets, they are also highly saturated throwing off the overall balance of a residential or built up area.

✓ **Solution:** Design a more intuitive symbology that facilitates interpretation of symbols on the map and lends readability.

⚡ Legends that appear on existing topographic maps appear as a generic set taking up the entire flip side of the map. This can be confusing as many of the features described do not actually appear on the map sheet the reader might be referencing. Also the extent of the legend is vast, requiring a reprinting on the opposite side of any given page. This increases the overall cost of the product where it might not be necessary.

✓ **Solution:** *Create a logical, practical legend that itemizes only the features found on that particular map-sheet. Present the legend in a legible and easily interpretable manner.*

⚡ Topographic maps currently on the market tend to be quite large in their dimensions relegating them to being viewed either on a wall or large table. If the reader needs to reference the map in a different environment, their size is a hassle.

✓ **Solution:** *Construct the map to fit on a smaller more easily portable page size, in this case A2. This not only allows for easy transport, but cuts down on the overall cost of printing.*

The main problems that result from these three issues are a loss of functionality, legibility and accuracy. In order for the user to obtain the information they need, the product has to get the essentials across in a direct, easily interpreted manner. With the proposed solutions to these issues, 'Artography aims to remove the obstacles occurring in other current series' of topographic maps.

MATERIAL	COST	EQUIPMENT	SOFTWARE
Plotting/printing*	\$13.65 per plot	HP5500 Plotter	ArcMap 9.3.1
		HP Compaq 8510w	CorelDraw X4

*Final product printed on an A2 sheet [16.5 x 23.4 in]
 [1.4 x 1.95 ft]
 @ 5.00/ sq ft
 \$13.65 per print

TASK	HOURS	COST @ 40\$/HR
Research	8	\$320
Data Gathering	8	\$320
Data Import	10	\$400
Data Clipping/Layout	8	\$320
DEM Creation	5	\$200
Hillshade	15	\$600
Line Generalization	15	\$600
Point Generalization	8	\$320
Area Generalization	8	\$320
Text Generalization	10	\$400
Symbology Design	25	\$1000
Text Design	15	\$600
Sheet Surround	15	\$600
Quality Control	15	\$600
<i>Total Hours</i>	170	
8 drafts + 3 plots		\$136.50
<i>Total Cost</i>		6,936.50

For detailed information regarding tasks, method and estimated completion times, please refer to the following Gantt chart and Flow Chart.