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Manager's Guide to Multiple Formats

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Produced through the Assistive Devices Industry Office of Industry Canada for the Government of Canada. Financial support from the Treasury Board Employment Equity Positive Measures Program Intervention Fund.

This Guide is available in alternate formats.

Her Majesty the Queen in Right of Canada 2003

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Dear Ms Laughton:

I am writing as Chair of the Council on Access to Information for Print-Disabled Canadians to offer congratulations on the publication of The Manager's Guide to Multiple Formats. As you know, the Council's mandate is to provide advice, identify funding requirements, monitor progress and make recommendations to improve access to print information. Members of the Council include, but are not limited to: consumers and consumer groups, publishers and multiple format producers (private and not-for-profit sectors), educational institutions and public libraries.

The Manager's Guide is an excellent resource for government managers in ensuring people with disabilities exercise their right to information. The Guide is supported by the Council as a vital tool in educating and assisting federal government managers in producing government publications that can be used by all Canadians.

The Task force on Access to Information for Print-Disabled Canadians found that three million Canadians, or about 10 per cent of the population, are print-disabled. Print disabilities prevent people from reading standard print due to a visual, perceptual or physical disability. As a result, they require print materials in multiple formats such as Braille, audio and large print, and accessible electronic resources, to meet their information needs.

This guidebook provides the planning tools needed by managers to produce multiple formats, not only for people with visual disabilities, but also for people with hearing and learning disabilities. Today's explosion in multimedia technologies makes the need for universal access even more significant.

The Council views the guidebook as a timely resource capable of making a major difference in the lives of many of our citizens. The enhanced participation in society that will inevitably result can only benefit us all.

The Manager's Guide will have application beyond the Federal Government, assisting a variety of agencies to upgrade access to their information. Congratulations again on the appearance of this much needed resource.

Yours sincerely,

Paul Whitney,
Chair, Council on Access to Information
for Print-Disabled Canadians.

Acknowledgements:

The publisher wishes to acknowledge the many hours spent by the volunteer reviewers in helping to edit the guide, often taking away precious time from their own business affairs to ensure the guide's relevance and accuracy.

Through development of the guide, invitations were forwarded to appropriate government departments, private sector firms and groups representing people with disabilities, for feedback and advice.

We thank all those who responded and offered their expertise, time and commitment.

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A. About the Guide

The Manager's Guide to Multiple Formats provides updated guidelines on how to develop and deliver accessible published government materials.

The guidelines have been developed under the Communications Policy of the Government of Canada that states government information must be broadly accessible throughout society.

The following sections are outlined in the Guide:

- Accessible Web Sites
- Audio Format
- Braille
- Computer Diskettes
- Described Video
- Large Print
- On-Screen Text
- SignWriting

This listing is by no means static. Developers of information technology are constantly making improvements and introducing new formats.

The Guidelines are accompanied by an appendix that lists helpful contact information, follow-up references and sample format specifications.

The Guide has been developed in consultation with federal government managers, groups representing people with disabilities, individual consumers and multiple format producers.

Definition: The term "multiple format" refers to any non-traditional publishing format. It replaces the previous terms "alternate format" and "alternative format."

B. Why the Guide is important

Good customer service

Your clients increasingly access information in many different ways.

Formats beyond the conventional printed page are in demand because of an explosion in information technologies combined with a more diverse audience.

Our aging population is one key factor in changing demographics. According to Statistics Canada, by 2026, one out of every five people will be a senior. As people grow older, the rate of disability increases. Over 26% of seniors have low vision or are blind while 40% have a hearing disability.

In the population as a whole, the Canadian Hearing Society reports that hearing loss affects over three million Canadians. That same number, or about 10% of the population, have learning disabilities, according to the Learning Disabilities Association of Canada.

Providing information in formats that all Canadians can access means reaching all of your potential audience. That's good customer service.

A Matter of policy and law

The Communications Policy of the Government of Canada requires that multiple formats be provided to ensure equal access to public information.

In addition, Section 15 of the Canadian Charter of Rights and Freedoms prohibits discrimination based upon race, national or ethnic origin, colour, religion, sex, age, or mental or physical disability.

The Canadian Human Rights Act states it is against the law for any employer or provider of service that falls within federal jurisdiction to make unlawful distinctions based on mental or physical disability.

The Common Look and Feel (CLF) Policy from Treasury Board makes it mandatory for all Government of Canada web sites to be accessible to all users.

In addition to these federal examples, a growing number of provincial and municipal regulations require that multiple formats be available as needed.

C. Getting started

There are a number of preparatory steps to consider in producing multiple formats.

Publication development

Each publication should be produced in such a way that adaptation to another format can be accommodated easily and quickly. This is accomplished through the following steps.

Use Plain Language:

A recent survey by the Decima polling firm discovered that 75% of Canadians find information from government programs too difficult to understand.

Keeping your text as clear and as easy to read as possible is not only beneficial for clients with learning disabilities and low literacy skills, it improves comprehension for all clients and will make adaptation to other formats easier.

All technical terms and acronyms should be fully explained.

Produce a Full-Text Template:

At the same time a published product is developed, all of the graphical and multi-media elements should be fully explained in text by the original authors. This is called a "Full-Text Template." It is simply a text file that contains all the original text plus text that describes any non-text content such as pictures, graphs, and even multi-media if applicable.

The full-text template is used as the master document from which all other formats can be produced.

The template system has a number of advantages:

Accurate and seamless conversion to other formats.

No additional expenditures to create full-text explanations after a product is developed.

Compatibility with technologies that depend on text for information transfer.

Details on how to produce a full-text version are contained in the section entitled "Full-Text Templates".

Finding suppliers

Consult your institution's procurement office for multiple format suppliers.

You can also obtain sources for suppliers in the appendix. When contracting suppliers, follow the Government of Canada Contracting Policy.

Budgeting and inventory

Publication budgets should be flexible:

Use a cost-effective approach that includes multiple formats according to demand. Monitor the number of requests you are receiving for multiple formats to determine future budget requirements.

In some circumstances, it may be appropriate to combine two formats into one. For example, a print product could be produced in large print.

Remember to always budget for extra copies needed for the Depository Services Program.

Produce upon request:

Multiple formats are produced upon request. Consider multiple format production even before requests are made if you anticipate requests based on content, audience and promotion.

All requests for information in a format the client can access must be met. Consultation with clients on what format is accessible is the key to a successful transaction.

Catalogue filing and numbering

DSP Copies:

Quantities of Government of Canada publications must be sent to the Depository Services Program (DSP). Copies are then distributed to a network of libraries, Members of Parliament and Senators.

In the case of multiple formats, there are designated libraries that have indicated an interest in obtaining specific formats to better serve their clients.

Separate ISBN for each format

The DSP is also contacted to obtain a Government of Canada Catalogue Number and ISBN (International Standard Book Number) or ISSN (International Standard Serial Number). Each format requires a separate number.

Pricing and promotion

All formats priced the same:

All formats of an information product must have the same price. Similarly, if the conventional product is free, so too must be all of its multiple format equivalents.

Promote availability:

There are a number of ways you can promote the availability of multiple formats.

Include a message in all products: "This publication is available upon request in accessible formats." This message can be produced in Braille and large print.

Include varied media in your advertising campaigns: Reach people with disabilities by using a mix of media advertising including radio, television, web sites, Internet news groups and radio reading services.

Register with 1 800 O-Canada (1 800 622-6232): The Government of Canada's toll-free information line (TTY 1 800 465-7735) is used by many people with disabilities to obtain government information.

Preparing order desks

Integrating Multiple Format requests:

Multiple format requests should be accepted at all the same order points as conventional products, including product catalogues, toll-free numbers and web sites.

Obligation to provide a format that is accessible:

Order desk personnel should ask clients what format they require for access. In some cases, a full-text electronic version can be e-mailed if the client has e-mail access.

Avoid referring all clients to the web as a one-stop solution because, as popular as the web has become, not all clients have web access or the ability to properly navigate the web.

Accept requests sent in a Multiple Format:

Clients may use a multiple format to request a publication. Be prepared to accept orders in this way.

Inform everyone in the publishing process:

Share the Guide with everyone involved in the development and distribution of publications including front office people, authors and

editors, graphic designers, webmasters, project managers, communications people and order desks.

Inform both staff and outside contractors.

D. Full-text Templates

Possible Purposes Include:

Use by multiple format suppliers to produce different formats.

Seamless conversion from one format to another, including conventional products (such as print to web).

Clients requesting a document by e-mail or diskette.

In order for an information product to be quickly and easily adapted to any format upon request, it is strongly recommended you produce a full-text template. The template should be produced at the same time as the original conventional product. This saves time and money that would otherwise be spent later on conversion.

The template is an electronic text file with all visuals, including charts and illustrations, and multi-media components such as video and audio, fully explained in writing.

As a result, visual components become accessible to people who are blind or have low vision using, for example, Braille, audio and accessible web formats; while audio becomes accessible to people who are deaf or hard of hearing using, for example, captioning.

The template serves as the "script" for all formats and is therefore useful not only for multiple formats but also in converting one conventional format to another, such as print to the web.

No version of a product, including the conventional format, should be released until the template is ready (much in the same way a product would not be released until available in both official languages).

A full-text template should be produced for existing publications that are promoted.

Original authors to provide text explanations

The people who write the original product should be the same people writing the text explanations. This removes the task of others trying to provide an accurate interpretation.

Use table of contents to organize

The template organizes all text with table of content sections and not page numbers. This is because formats developed from the template will not have the same page numbering. Large print documents, for example, will have more pages than a conventional print product. Keep the listing of content as simple as possible.

Not all graphics require explanation

Graphics used for visual appeal, such as designer lines, do not require accompanying text. Many photographs, also used for visual appeal and which may not have particular relevance, can be given very short descriptions.

Identify the text explanations

Make clear what visual element a text explanation is for, and when the explanation begins and ends.

Charts, graphs, tables and maps

In explaining complicated visuals, first identify the format, such as "chart," then provide the title and purpose followed by the meaning of the data.

Use explanatory captions

In the case of captions, the full text explanation and original caption can be one and the same. The caption explains what is happening in the photograph or illustration.

Make reference if the explanation is in the text

It is not necessary to provide a separate text explanation if the explanation is already provided within the body of the publication text. In these cases, make a reference to the visual within the text.

Example of text explanation

To illustrate the practice of writing text explanations, here is a brief example.

Headline: Canada's population ages

Photograph One: Elderly man and woman standing in front of a younger couple.

Photograph One Caption: Statistics Canada estimates that one in four of us will be over age 65 by the year 2026.

Body Text:

The baby boomers - those born in the two decades after the Second World War - will have the most profound impact on Canada's demographics in the next 25 years.

According to Statistics Canada, in 2000, about one out of every eight people in the population was aged 65 and older.

Illustration One, Section A: Aging Population

Text description: This illustration shows the increase in older Canadians between 1970 and 2000, starting with one in 10 people over age 65 in 1970, one in ten in 1990 and one in eight in 2000.

End of text description.

E. Accessible Web Sites

Possible Purposes Include:

Access to publications for people using screen readers.

Providing text transcripts of multi-media content.

Multi-media content as an alternative to text for people with learning disabilities and low literacy skills.

Real-time distribution of information.

The Internet has opened up a whole new world of information for many people with disabilities.

For people who are blind or have low vision and for some people with learning disabilities, the Internet is an opportunity to access information previously available only in print format. Through the use of a wide range of new technologies such as screen readers that interpret text, web pages can be quickly converted to Braille, audio or large print.

For people who are deaf or hard of hearing, e-mail and chat rooms have become alternatives to the telephone.

Just as significant is the emergence of multi-media on the web in which video and audio are used to convey information as an alternative to text.

In short, the Internet is helping to provide universal access to information.

However, there are two important points to consider in the delivery of web information.

Not everyone has access to the Internet: While it is true more people are going online every day, the Internet cannot be viewed as the answer to providing access for all clients. Automatically directing every enquiry to the web would not be appropriate. Be sure to first ask clients if they have web access.

The web needs to be made accessible: Full access through the Internet is only possible when web pages are produced so they can be accurately converted to other formats. For example, if a text explanation does not accompany a graphic, the meaning behind the graphic cannot be interpreted by a person using a screen reader.

Due to the popularity of the Internet, the role of government webmasters has become critical to information delivery.

Barriers to web accessibility

If a web site has not been designed with accessibility in mind, there are many barriers faced by people with disabilities.

Common accessibility problems include:

Images without alternative text.

PDF files not also available in HTML format.

Uncaptioned audio or undescribed video.

Lack of alternative information for users who cannot access frames or scripts.

Tables that are difficult to decipher.

Poor colour contrast.

Text sizes and styles that cannot be easily changed by the user.

Content not presented in a logical reading order.

Mandatory web site design for accessibility

Government of Canada (GoC) web sites must follow the Common Look and Feel (CLF) Policy issued by the Treasury Board of Canada.

The CLF Standards and Guidelines are designed to ensure that all Canadians, regardless of ability, geographic location or demographic category, are given equal access to information on GoC Web sites.

Accessibility requirements include text equivalents for non-textual elements, such as graphics, images, navigational aids and sound tracks.

The accessibility requirements of CLF are based partly on a set of international web guidelines produced by the "Web Accessibility Initiative" (WAI) of the World Wide Web Consortium (W3C). Canada is a sponsor of WAI.

Testing your web sites for accessibility

There are a number of services, both public and private, that will test your web sites for accessibility.

Demonstrations of the accessibility of federal government web sites can be arranged through the Web site Accessibility Testing Service (WATS) established by the Chief Information Officer's Branch of the Treasury Board Secretariat.

Won't accessibility make web sites less attractive?

Accessible web sites can be just as attractively designed as those that are inaccessible. The guidelines ensure that all kinds of web sites, including those using multi-media, work for all users. The goal is not to be different, but rather to be flexible enough so that users with different needs and equipment can still access the information.

Why can't I just produce a text-only version for web sites?

While viewed as a solution several years ago, producing a separate version of your web site as text-only is not recommended for several reasons:

It is not needed on accessible web sites.

It sends the wrong message, treating your audiences differently.

Text-only pages are often not updated at the same time as "primary" pages or as often.

Text-only pages often do not contain the same information as the "primary" pages.

What about PDF files?

Although newer software to produce files in Portable Document Format (PDF) is designed to increase accessibility, using PDF as the only format for a publication is not appropriate.

Ensure that an accessible HTML format accompanies all PDF files.

Does it cost more to make web sites accessible?

Not if you plan ahead. Building accessibility into the architecture of a web site from the beginning will eliminate the need for costly changes later.

Some aspects of accessibility, such as the use of style sheets that automatically format all text in the same way, will save time and money.

The cost of producing accessible web sites will vary greatly, depending upon the size of the site, the complexity and the authoring tools used for design. These same variables would also apply to non-accessible sites.

F. Audio Format

Possible Purposes Include:

Access to printed publications for people who are blind or have low vision.

Internet posting.

Access when reading print is not possible (ie: when driving) or is cumbersome (ie: when touring exhibits).

Enhanced comprehension for people with learning disabilities or low literacy skills.

The audio format typically uses a professional narrator to read text heard on cassette tape. Users navigate through sections of the tape using index tones.

The standard format is 2-track audio providing audio on each side of a cassette tape that can be played on any commercially available cassette tape player. (A number of organizations distribute 4-track audio to increase the amount of programming that can be put on a single cassette but this format requires special playback machines).

Audio can enhance comprehension for people with learning disabilities, people with low literacy skills and for new Canadians unfamiliar with Canada's official languages.

For people who are blind or have low vision, audio information removes the challenge of interpreting computer files that contain graphics, have multiple columns and other complicated design components that are unfriendly to screen reading devices.

G. Braille

Possible Purposes Include:

Access to printed publications for people who are able to read Braille.

Braille is a reading system of raised dots. Named after its inventor, Louis Braille, the system's basic "Braille cell" consists of six dots grouped in two vertical columns of three dots each.

These patterns, identifiable to the touch, represent letters of the alphabet, small words, contractions, numbers and punctuation signs.

There is English Braille and French Braille. Grade 1 Braille is the most basic representation of letters, numbers and punctuation while Grade 2 combines approximately 300 contractions and is the most commonly used.

Proof-reading Braille

It is important to proof-read Braille not only to catch errors which may have been made in the full-text template but also because errors can occur during conversion. Use trained Braille proof-readers.

Also consider the use of a disclaimer to explain errors in the conventional print product converted to Braille. Here is suggested wording:

"Errors that appear in spelling, grammar or punctuation, and breaks in text continuity are Brailled as printed."

Can Braille be produced in-house?

Using special software and a Braille printer, it is possible to print short text documents in Braille on your own. However, be aware that you will need someone proficient at using the equipment, Braille transcribing and Braille proofing.

In-house production may be appropriate for letters and basic communication with clients. But using a professional Braille supplier is strongly recommended for publishing projects. Even then, do not assume all Braille output is accurate. Just as there are editors and proof-readers for standard print, you should consider independent Braille proof-readers.

Can Braille be used with computers?

A wide range of devices allow Braille users to access information on a computer screen. Refreshable Braille displays, for example, consist of small pins which move up and down to form Braille letters in accordance with single-column text on a screen.

While these devices can read text, they cannot interpret graphics (or text that has been produced as a graphic). Increasingly popular are devices that combine Braille display with synthesized speech output giving blind users faster and more accurate interpretation of the computer screen.

Is it possible to produce a Braille graphic?

In some cases, as with flow charts and mathematical diagrams, a Braille illustration can be produced. Consult your Braille supplier.

H. Computer Diskettes

Possible Purposes Include:

Distribution of the template or large print version.

Access for clients who have no e-mail or web access.

Portable electronic storage in the form of CDs, DVDs, Zip disks, traditional floppy diskettes and other methods, is necessary to deliver computer files to clients that do not have web or e-mail access.

Many people do not have web or e-mail access for affordability reasons or their particular disability prevents them from being able to use these services.

It is important, therefore, to make diskette and CD formats available as options for information delivery.

I. Described Video

Possible Purposes Include:

Access for viewers who are blind or have low vision.

Access for viewers unable to see video for any reason.

Enhanced messaging.

Audio for Internet distribution.

Described video, also known as audio description, has all relevant action scenes and on-screen text (such as credits) in a video, TV program, web-based multi-media or movie described and read by a narrator.

Not only does this provide access to viewers unable to see the video, it can be used to enhance or emphasize messages in educational or promotional videos for all audiences.

Canada's major TV networks are increasingly required to include described programming in their prime-time schedules.

Described video can be "open" or "closed". When "open," the descriptive audio can be heard by all viewers. When "closed," viewers must turn on the TV set Second Audio Program (S.A.P., also known as the second audio channel for stereo broadcasting) for access.

J. Large Print

Possible Purposes Include:

Access for people with low vision.

Improved access for people with low reading skills.

Used to emphasize important information.

Large print publications use a set of guidelines that improve readability beyond standard design and formatting. This includes a larger point size for characters plus the use of non-serif fonts, increased spacing and improved contrast.

There is no universally accepted standard for large print point size. A recommended standard for general publishing is 16 points for body text and higher point sizes for titles and subheadings.

The aging trend means that more people than ever before have low vision. For this reason, it may be practical to have the original publication produced in large print (which can also reduce budgets). Short promotional brochures, information pamphlets and executive summaries may fall into this category.

Why can't I just use a photocopier?

Using a photocopier's zoom feature to increase font size for clients requiring large print is not recommended. Photocopying can result in poor reproduction quality and cut off text making the document harder to read.

What about the use of illustrations in large print?

Large print publications should use enlarged graphics but maintain the same contrast, clarity and colour as the original version. Graphics containing text and captions should use the same large print guidelines as other text.

If possible, avoid wrapping text around graphics.

K. Multi-Media

Possible Purposes include:

Access for people with disabilities.

Improved access for people with low reading skills.

Multi-languages.

Present information quickly.

Multi-media production for computer users has become a popular method to package information in more appealing, engaging and for some people, interactive ways. Publications can be turned into mini-movies complete with sound, video, text and graphics making learning more effective, enjoyable and rewarding.

Popular methods used to distribute multi-media production include Compact Disc and the Internet.

Making Multi-Media Accessible

Thanks to a technical language known as SMIL or "Synchronized Multimedia Integration Language," additional or alternate content can

be built into some multi-media productions. These may include alternate language audio tracks, text for open captioning and described video tracks.

SMIL and other similar technical languages can therefore make information in multi-media productions accessible to a greater number of people.

By offering a range of choices for content, users can utilize those that are the most appropriate or convenient. For example, SMIL can allow text display of multi-media not only for people with disabilities but also users who prefer a silent environment.

In cases where additional content tracks cannot be included or are not present (as with many older multi-media productions), a separate text equivalent should always accompany the multi-media production.

L. On-Screen Text

Possible Purposes Include:

Access for viewers who are deaf or hard of hearing.

Multi-languages.

On-screen text converts the spoken word and other audio contained in videos, TV programs, web-based multi-media and movies to text.

There are different types of on-screen text. The following three are commonly used.

Subtitling: Subtitles are used to communicate the spoken word in a different language. They can also be used for audiences who are hard of hearing.

Closed Captioning: Closed captioning is the addition of text inserted into the video portion of the signal using an encoder and made visible through the use of a decoder. Television sets with screens larger than 14 inches since 1995 contain a caption decoder chip.

Open Captioning: Open captioning is the decoding of words visible on-screen without the use of a decoder or any assistive device.

M. SignWriting

Possible Purposes Include:

Access to printed publications for people who are deaf and read SignWriting.

"SignWriting" is a writing system using visual symbols to represent the handshapes, movements and facial expressions of American Sign Language, Langue des Signes Québécoise and other signed languages. It is still relatively new in its usage.

Many people who use Sign Language in person are able to read and write standard text. It is therefore rare that you would receive a request for a publication in SignWriting although this may change in the future if SignWriting replaces standard text as the preferred format among deaf users that communicate mainly by Sign Language.

SignWriting is currently used mainly to teach signs and signed language grammar to beginning signers. It is also increasingly used as an alternative to standard text in teaching grade school students whose command of sign language is greater than that of printed English or French.

Multiple Format Checklist

This checklist is an abbreviated form of the more detailed "Manager's Guide to Multiple Formats" and its accompanying appendix of resources.

Produced through the Assistive Devices Industry Office of Industry Canada for the Government of Canada. Financial support from the Treasury Board Employment Equity Positive Measures Program Intervention Fund.

All Canadians have the right to public information in a format they can access. This right is protected by the Canadian Charter of Rights and Freedoms and other federal legislation.

The Government of Canada Communications Policy requires that public information be made available in multiple formats (formats other than traditional publishing) for access by people with disabilities.

Making publications available so they can be accessed by as many people as possible not only conforms with laws and policies, it's also good customer service.

Today's aging population, explosion in information technologies and increasingly diverse society have left the printed page as only one of many ways to deliver information.

Different Methods of Publishing

This checklist examines some of the more commonly used formats and communications methods used in today's society.

Accessible Web Sites: Some people who are blind or have low vision use "screen reading" software that can convert written text on web sites into other formats they can access, such as audio or Braille. However, the screen reading technology cannot interpret graphics or text that appears in graphical form. For this reason, web sites need to be made accessible by ensuring that all visual and multi-media components are available in text.

A number of measures to make federal web sites accessible are mandatory under the Government of Canada's Common Look and Feel Policy.

Audio: Publications produced on cassette tape are appropriate when the print version cannot be accessed. A professional narrator reads the text navigated by users through tone indexing that marks new sections.

Braille: Braille is a reading system of raised dots. Named after its inventor, Louis Braille, the system's basic "braille cell" consists of six dots grouped in two vertical columns of three dots each. There is English Braille and French Braille. Grade 1 Braille is the most basic representation of letters, numbers and punctuation while Grade 2 combines approximately 300 contractions and is the most commonly used.

Computer Diskettes and other portable electronic storage methods: For people who cannot be sent publications in electronic format via e-mail or over the web, diskettes may be a solution. There are a range of storage formats including CDs, DVDs and ZIP disks.

Described Video: Described video, also known as audio description, has all relevant action scenes and on-screen text (such as credits) in a video, TV program, web-based multimedia or movie described and read by a narrator. Described video can be "open" or "closed". When "open," the descriptive audio can be heard by all viewers. When "closed," viewers must turn on the TV set Second Audio Program (S.A.P., also known as the second audio channel for stereo broadcasting) for access.

E-Text: E-text, or electronic text, refers to publications in which all graphical components, including relevant photographs, charts and illustrations, are fully explained in text and stored electronically for distribution by e-mail, web page or diskette.

Large Print: Large print publications use a set of guidelines that improve readability beyond standard design and formatting. This includes a larger point size for characters - 16 points is recommended - plus the use of non-serif fonts, increased spacing and improved contrast. The aging trend means that more people than ever before have low vision and require large print. For this reason, it may be practical to have the original publication produced in large print.

Multi-Media: Multi-media productions developed using Synchronized Multimedia Integration Language (SMIL) (and other similar programming languages) can feature multiple content layers. These may include alternate language audio tracks, text for open captioning

and described video tracks, expanding the options for accessing the information.

On-Screen Text: On-screen text converts the spoken word and other audio contained in videos, TV programs, web-based multi-media and movies to text. The text can be in the form of subtitles used to communicate the spoken word in a different language or in the form of captioning for people unable to access audio. Closed captioning is seen with a decoder while Open captioning is visible without a decoder.

SignWriting: "SignWriting" is a writing system using visual symbols to represent the handshapes, movements and facial expressions of American Sign Language, Langue des Signes Québécoise and other signed languages. SignWriting is currently used mainly to teach signs and signed language grammar to beginning signers. It is also increasingly used as an alternative to standard text in teaching grade school students whose command of sign language is greater than that of printed English or French.

How to Prepare for Multiple Formats

Use Plain Language: Keeping your text as clear and as easy to read as possible is not only beneficial for clients with learning disabilities and low literacy skills, it improves comprehension for all clients and will make adaptation to other formats easier.

Produce a Full-Text Template: At the same time a published product is developed, all of the graphical and multi-media elements should be fully explained in text by the original authors. This file is known as the "full-text template" from which multiple formats can be produced in an accurate and seamless way. The template is a multiple format in itself, representing e-text that can be used for distribution.

Find Suppliers: Consult your institution's procurement office for multiple format suppliers. You will find a listing of suppliers through the online Canadian Company Capabilities Database maintained by Industry Canada:

<http://strategis.ic.gc.ca/SSG/it05241e.html>

Adjust Budgets: Use a cost-effective approach that includes multiple formats according to demand. In some circumstances, it may be appropriate to combine two formats into one. For example, a print product could be produced as large print. Remember to always budget for extra copies needed for the Depository Services Program.

Produce upon Request: Using the full-text template, produce multiple formats upon request. You have an obligation to provide publications in a format clients can access.

Inform everyone in the publishing process: Share this guide with everyone involved in the development and distribution of publications including front office people, authors and editors, graphic designers, webmasters, project managers, communications people and order desks. Inform both staff and outside contractors.

How to Price, Promote and Accept Multiple Format Requests:

All formats priced the same: All formats of an information product must have the same price. Similarly, if the conventional product is free, so too must be all of its multiple format equivalents.

Promote availability: There are a number of ways you can promote the availability of multiple formats. Use varied media including radio and the web; register with 1 800 O-Canada (1-800-622-6232); advertise with radio reading services; and include a message on all products, such as "This publication is available upon request in accessible formats." The message can be produced in Braille and large print.

Accepting requests: Multiple format requests should be accepted at all the same order points as conventional products, including product catalogues, toll-free numbers and web sites. Ask clients what format they require for access. In some cases, a full-text electronic version can be e-mailed if the client has e-mail access. Avoid referring all clients to the web as a one-stop solution because, as popular as the web has become, not all clients have web access or the ability to

properly navigate the web. Also, be prepared to accept requests that come in via a multiple format.

Summary Checklist:

Have webmasters follow the Common Look and Feel (CLF) Policy.

See the CLF web site at:

<http://www.cio-dpi.gc.ca/clf-upe/>

Promote the availability of all publications in multiple formats.

Familiarize all order desks with multiple formats and prepare them for requests. Inform them that there is an obligation to provide information in a format clients can access.

Create a full-text template for all publications as publications are first developed.

Have a full-text template produced for all existing publications that are promoted and considered popular.

Provide full-text templates to multiple format suppliers to produce formats as they are requested. The templates are also a multiple format in themselves and can be sent to clients via e-mail or diskette as appropriate.

Follow your institution's procedures for securing appropriate suppliers. Use the Canadian Company Capabilities Database of Industry Canada.

<http://strategis.ic.gc.ca/SSG/it05241e.html>

Obtain ISBN numbers for each multiple format and file copies for legal deposit. Contact the Depository Services Program.

<http://dsp-psd.communication.gc.ca/ISBN/services-e.html>

For More Information:

For more details, consult the "Manager's Guide to Multiple Formats" and its accompanying appendix of references.

APPENDIX

Dated: March, 2002

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A. Web References

A1. Federal Policies

Common Look and Feel Policy and Guidelines

Treasury Board

<http://www.cio-dpi.gc.ca/clf-upe/>

Government of Canada Communications Policy

Treasury Board

http://www.tbs-sct.gc.ca/Pubs_pol/sipubs/comm/siglist_e.html

Government of Canada Contracting Policy

Treasury Board

<http://www.tbs->

[sct.gc.ca/pubs_pol/dcgpubs/Contracting/contractingpol_2_e.html](http://www.tbs-sct.gc.ca/pubs_pol/dcgpubs/Contracting/contractingpol_2_e.html)

Legal Deposit

National Library of Canada

<http://www.nlc-bnc.ca/6/25/s25-200-e.html>

A2. Format Standards Organizations

Braille Society of North America

<http://www.brailleauthority.org>

Canadian Braille Authority

<http://www.langara.bc.ca/cba/>

Digital Audio-based Information System (DAISY) Consortium

<http://www.daisy.org>

Web Accessibility Initiative (WAI)

<http://www.w3.org/WAI/>

A3. Legislation

Access to Information and Privacy Act

<http://www.canada.justice.gc.ca/en/ps/atip/index.html>

Canadian Charter of Rights and Freedoms

<http://www.canada.justice.gc.ca/en/justice2000/113mile.html>

Canadian Human Rights Act

<http://laws.justice.gc.ca/en/H-6/index.html>

A4. Plain Language

Plain Language: Clear and Simple

Human Resources Development Canada

<http://www.nald.ca/resource/rsc549.htm>

A5. Promotion

O Canada web site

http://canada.gc.ca/directories/infor_e.html

A6. Suppliers

Canadian Company Capabilities Database

Industry Canada

<http://strategis.ic.gc.ca/SSG/it05241e.html>

A7. Web Accessibility Testing

Web Site Accessibility Testing Service

Treasury Board

http://www.cio-dpi.gc.ca/clf-upe/1/wats/wats_e.asp

B. Specifications

B1. Braille

Format specifications from the Braille Authority of North America

(<http://braille.brl.org/formats>) and the Canadian Braille Authority

(<http://www.langara.bc.ca/cba>).

Human Resources Development Canada (HRDC) Specifications:

Master: High density 3 1/2" IBM-formatted computer diskette
MS-DOS Grade II Braille file
Formatted according to BANA standards for 8 1/2"x11" Braille paper
3/4" inside margins
30 characters maximum per line
25 lines maximum per page - page number only on line 25
Double-sided (interpoint) printing
Binding: documents of 2-10 sheets stapled top-left corner
Documents of more than 10 sheets cerlox binding
Large print and Braille cover page
Packaging marked "Free Matter for the Blind."

B2. Cassette Tape

Human Resources Development Canada (HRDC) Specifications:

Master: Digital audio tape (DAT) formatted for 2 track (1 7/8 per second) cassette.

Tone index: (50-60 Hz signals) audible in fast forward and rewind modes; single tone for section titles; two tones for illustrative material (figures, tables, charts, graphs, etc.)

Labelling: On side A - large print and grade II braille.

Packaging: Bubble mailing envelope or cardboard packaging marked "Free Matter for the Blind."

B3. Computer Diskettes

Human Resources Development Canada (HRDC) Specifications:

Master: High density 3 1/2" IBM-formatted or Zip IBM-formatted computer diskette

ASCII file (MS-DOS text)

Body text is formatted as a single column

76 characters maximum per line

Courier 10 point font (standard default)

Label: Large print and grade II Braille

Packaging: Cardboard diskette mailing package or cardboard box.

B4. Full-Text Template

Human Resources Development Canada (HRDC) Specifications:

A separate one-source master is created for French, English and any other language.

The document provided to create the one source master must be the final, edited electronic copy.

Electronic masters are designed to be compatible with World Wide Web accessibility criteria. (Consult www.w3.org/wai)

A hard copy of the conventional print document is provided for reference purposes.

Logos are supplied in electronic format.

Visual elements are described in narrative form.

Footnotes and sidebar information are incorporated in body text.

Body text is formatted as a single column.

Table of contents is included, if the document is lengthy or if the text contains references to page numbers.

References to page numbers in text are replaced by references to table of contents.

Forms, applications, questionnaires, etc. are adapted for compatibility in all formats and for ease of use.

Sensitive and classified information is protected.

B5. Large print

Human Resources Development Canada (HRDC) Specifications:

Master File: High density 3 1/2" IBM-formatted or Zip IBM-formatted computer diskette.

PostScript file as ASCII, formatted for 8 1/2"x11" paper - formatting conforms to professional graphic design and typesetting standards.

Sans serif fonts (such as Arial, Univers, Geneva, Helvetica Regular)

16 point type for body text, 20% leading (standard default); headings and subheadings proportionally larger and bold; upper and lower case for all text, including headings and subheadings.

Body text (single column only), headings and subhead type set flush left, ragged right (left justified).

One hard space only between sentences; no hyphenation of single words at ends of lines; no italics, underline to represent italics.

Page margins: documents of 1-15 sheets; 1" top, bottom, outside, inside; documents of more than 15 sheets; 1" top, bottom, outside; 1 1/4" inside.

Black print on 24lb - white smooth opaque paper; no screens.

Binding: documents of 2-15 sheets stapled top left corner; documents of more than 15 sheets - spiral binding.

C. Emerging Technologies

DAISY: A technology some believe has the potential of becoming an alternative to cassette tape is known as DAISY, which stands for "Digital Audio-based Information System". Using this technology, audio is both recorded and categorized digitally so that sections of an audio publication can be quickly located much in the same way tracks on a CD can be accessed.

Web Multi-Media: The ability to add captions, alternate language tracks and described video tracks to common web-based multimedia formats, such as Apple's QuickTime, Microsoft Windows Media and RealNetworks' media, is possible using new web languages such as the "Synchronized Multimedia Integration Language" (SMIL) from the W3C. For more information, see: <http://www.w3.org/AudioVideo/>.

MP3: Another audio technology is MP3 (the third generation of MPEG electronic files developed by the international "Moving Picture Experts Group"). Due to its ability to compress large video and audio materials into small files, MP3 is popular on the Internet where small files can be downloaded faster.

Multiple Format Tool Kit

The following links to accessible tools are for information purposes only and should not be interpreted as an endorsement of any particular tool or technology.

The list should also be considered a starting point since technologies are constantly being updated and introduced.

1. User Tools

Here is an introductory list of links to products and technologies that have accessibility features.

Web-based

Alternative Web Browsers: People with disabilities use a wide range of alternative approaches to accessing web pages that are different from traditional mouse-and-screen-based browsers.

Go to a comprehensive list of alternative web browsers prepared by the World Wide Web Consortium:
<http://www.w3.org/WAI/References/Browsing>

Multi-media players: If a multi-media production has been produced with accessibility in mind, the accessible file can be accessed in a number of multi-media players that have accessible features.

Go to the multi-media player list prepared by the U.S. based National Center for Accessible Media:
<http://ncam.wgbh.org/richmedia/>:

Also go to the multi-media player list from the World Wide Web Consortium:
<http://www.w3.org/AudioVideo/#SMIL>

Screen Readers and Talking Browsers: Screen reader technology is able to "read" web page text (and other computer text) so it can be converted to other formats such as audio and Braille.

Go to the University of Toronto screen reader listing:
<http://www.utoronto.ca/atrc/reference/tech/scread.html>

Off the Web

DAISY Audio: An emerging audio technology is DAISY or "Digital Audio-based Information System". Using this technology, a publication in audio format can be "tagged" so the user can quickly and easily navigate the publication's pages, chapters, sections and other components without the need to rewind or fast forward. It is similar to music CDs where the user can select a particular track with the touch of a button.

Go to the comprehensive list of products that will play DAISY recordings on the DAISY web site:
<http://www.daisy.org/tools/playback.asp>

Braille Embossers and software: A Braille embosser is a hardware device for "printing" a Braille document. Braille translation software is used to translate the text from the computer into Braille.

Go to the University of Toronto list of Braille embossers and software programs:

<http://www.utoronto.ca/atrc/reference/tech/brailleemb.html>

2. Developer Tools

These links point to resources for web and multi-media authors and developers.

Web-based

Accessibility Guidelines: A number of guidelines have been produced by the World Wide Web Consortium to help web site developers make their sites accessible.

Web Content Accessibility Guidelines: Explains in detail how to make a Web site accessible for people with a variety of disabilities.

Go to the World Wide Web Consortium's WCAG section:

<http://www.w3.org/TR/WCAG10/>

Authoring Tool Accessibility Guidelines: For software developers, explains how to make a variety of authoring tools support the production of accessible Web content, and also how to make the software itself accessible.

Go to the World Wide Web Consortium's ATAG section:

<http://www.w3.org/TR/ATAG10/>

User Agent Accessibility Guidelines: For software developers, explains how to make accessible browsers, multi-media players, and assistive technologies that interface with these.

Go to the World Wide Web Consortium's UAAG section:
<http://www.w3.org/TR/UAAG10/>

XML Accessibility Guidelines: For developers of XML-based applications (Extensible Markup Language), these guidelines explain how to ensure that XML-based applications support accessibility. XML is commonly used to format, package and retrieve content.

Go to the World Wide Web Consortium's XML section:
<http://www.w3.org/TR/xag.html>

SMIL Tools: The Synchronized Multimedia Integration Language (SMIL, pronounced "smile") enables simple authoring of interactive audiovisual presentations. SMIL is typically used for "rich media"/multimedia presentations which integrate streaming audio and video with images, text or any other media type. SMIL is an easy-to-learn HTML-like language, and many SMIL presentations are written using a simple text-editor.

Go to the World Wide Web consortium's section on Audio and Video:

Other Developer Tools: In addition to SMIL, there are other developer tools such as "Synchronized Accessible Media Interchange" that can be used to improve accessibility.

Go to the comprehensive list from the World Wide Web Consortium.
<http://www.w3.org/AudioVideo/>

Also go the World Wide Web Consortium's product listing:
<http://www.w3.org/WAI/References/>

Style Sheets: Style sheets are used to control all aspects of a web site's visual appearance, including the colours, sizes and placement of text and images on a page. One style sheet can ensure that text and presentation throughout a web site is consistent in format. But style sheets can also be created so that the user can adjust them. For

example, a person who is colour blind can adjust the sheets to show a page only as black and white.

Go to the World Wide Web Consortium web site on style sheets:
<http://www.w3.org/TR/WAI-WEBCONTENT-TECHS/#tech-style-sheets>

Online Forms: The escalation of e-commerce and information gathering through the Internet has resulted in many more online forms. HTML forms can often be made accessible with single column layout of controls, clear and meaningful labels and the use of accessible HTML coding. Many types of on-line forms are inaccessible either for technical reasons (the format is not understood by current assistive technologies) or design reasons (the form is highly complex). Much research is underway to make on-line forms both accessible and usable by people with disabilities.

Go to the the Common Look and Feel reference about forms:
http://www.cio-dpi.gc.ca/clf-upe/standards/1-1/form/form_e.asp

Pop-up windows and drop-down menus: Many web sites have become so large, they are using pop-up windows and drop-down menus to relieve the visual stress within crowded navigation schemes. Both of these methods were considered inaccessible because of their dependence on the use of a mouse and graphical browser techniques, but additional coding can make some pop-up windows and drop-down menus accessible to keyboard and screen-reader users.

Go to the Common Look and Feel reference on pop-up menus:
http://www.cio-dpi.gc.ca/clf-upe/standards/1-1/popup-menus/popup-menus_e.asp

Chat Forums: It is estimated that online chats and instant messaging will account for more personal and corporate communications than the telephone. Nearly 800 million instant messages are being sent each day in North America, a figure expected to exceed 5 billion in

the next few years (source: IDC, a global information technology consulting firm). The most accessible chat programs are those produced with HTML output. But a chat program developed with any technical language, including java, can be made accessible by keyboard control, making sure messages can be refreshed and scrolled by the user, and ensuring compatibility with popular screen readers.

Go to a sample of a fully accessible chat forum on the Special Needs Opportunity Windows web site of the University of Toronto:
<http://snow.utoronto.ca/chat.html>

Scrolling Text: The popularity of scrolling news tickers on all-news TV stations has led to scrolling text on the Internet. However, scrolling text is generally not accessible. If it is used, it should be accompanied by an accessible static version.

Learning-Friendly approaches: Many people become overwhelmed and discouraged by crowded web pages with confusing navigation. For people with learning disabilities, such web sites are particularly challenging. Ensure that your web site is easy to use with a logical progression of sections and without overly-long pages.

Off the Web

Captioning Software: A wide range of programs are available to produce captioning.

Go to the Canadian Hard of Hearing Association links page:
http://www.chha.ca/chha_index.htm

DAISY Audio: Digital Audio-based Information System or DAISY is an audio format that "tags" a digital publication so the user can quickly and easily navigate the publication's pages, chapters, sections and other components without the need to rewind or fast forward.

Go to the comprehensive list of production tools on the DAISY web site:

<http://www.daisy.org/tools/production.asp>

UEBC Braille: Technical writing in English Braille has been challenging because there are three American and three British codes. As a result, the International Council on English Braille has been developing a single standard known as "Unified English Braille Code" (UEBC).

Go to the ICEB web site:

<http://www.iceb.org/ubc.html>