Information Technology Bulletin
Commonwealth of Pennsylvania
Governor's Office of Administration/Office for Information Technology

ITB Number:	**ITB-APP005**	
ITB Title:	**Commonwealth of Pennsylvania Website Standards**	
Issued by:	**Deputy Secretary for Information Technology**	
Date Issued: May 3, 2006		**Date Revised: October 25, 2010**
Domain:	**Application**	
Discipline:	**Website Development**	
Technology Area:	**Internet**	
Revision History Date:	**Description:**	
10/25/2010	**References added for Web Analytics**	

Abstract:
The purpose of this Information Technology Bulletin (ITB) is to facilitate enterprise-wide interoperability and standardization for Internet, Intranet, and Extranet (IIE) facing websites.

The Commonwealth has chosen an enterprise approach to provide cost-effective, quality IIE services.

General:
This ITB applies to all departments, boards, commissions and councils under the governor's jurisdiction. Agencies not under the governor's jurisdiction are strongly encouraged to follow this policy.

Policy:
All agencies are to follow the formats and standards included in this policy for both internal and outsourced creation and implementation of IIE websites.

Portal Requirements
All new website development efforts are to comply with the Commonwealth Portal Standards referenced in ITB-APP029 *Portal Technology Standards*.

Information Technology (IT) Accessibility Requirements
Agencies, boards, councils, and commissions are responsible for ensuring their IIE websites are designed to all web design and application development requirements specified in ITB-ACC001 *Information Technology Accessibility Policy*.

General Web Page Design Guidelines
Design websites with the target audience in mind, not personal preferences.

Each website is to:
- Be easy to read;
- Be easy to navigate;
- Be accessible to a wide range of users;
- Follow defined enterprise branding specifications; and
- State the page title on each page.

Web page layout and design are to be consistent throughout the entire site. Website administrators and content publishers are to place strong emphasis on the quality of the content presented. Artwork/graphics presented on the website are to compliment the content, but not overwhelm it. Effective web design is dedicated to providing useful, rather than trying to distract visitors with "effects." Web content publishers, therefore, are not to overly rely on extraneous effects (e.g., special plug-ins) for message presentation. Content is to be logically presented in a consistent manner throughout the site and to provide intuitive navigation.

Commonwealth Branding Standard for Agencies under the Governor's Jurisdiction

In an effort to present constituents with a cohesive, Commonwealth-branded interface for web services, web design guidelines have been developed for use on Commonwealth websites. The guidelines help to deploy a branded and universal graphical user interface, while still allowing the agencies to maintain a degree of autonomy and creativity on agency sites. These specifications can be found in STD-APP005A *Commonwealth of Pennsylvania Website Standards*.

Navigation

Website navigation is to:

1. Be consistent throughout the entire website.
2. Allow visitors to find desired information quickly and easily.
3. Adhere to web standards by indicating which link is currently selected and which links have been previously selected.
4. Use Hypertext Markup Language (HTML) text, rather than graphical text, for key content including navigational items and page headers.
5. Provide a shortcut (a "skip main navigation" hidden pixel) on every page that follows the home page. This allows users to skip repetitive navigation on the page through keystroke.

Pages are to contain local navigational links at both the beginning and end of the page layout. All pages are to provide a link to the organization's home page. All agency websites are to have a link back to the Commonwealth's home page located at www.pa.gov.

Page Size

A web page size is to be kept between 40 kilobytes (KB) to 60KB in order to provide reasonable download time. A 75KB web page, however, will still enable a relatively fast download time on a 56KB per second/V.90 modem. Page length is to be limited to no more than two 800- by 600-pixel screens worth of information.

Hypertext Links

Link descriptions are to aid users to locate relevant information. Links are to use text that is descriptive and intuitive - even when read out of context (e.g., avoid "click here" as text for a hyperlink). In addition, hyperlinks are to be checked and maintained regularly to verify their validity as broken hyperlinks may cause users to question the reliability of the site.

As web pages are created, correct links to pages depend on the correct directory and the file structure. Use relative links instead of absolute links when linking to pages within a Commonwealth website (e.g., a relative link (index.html) would be found,

while an absolute link (http://www.state.pa.us/pavisit/index.html) would not be found, if the directory or server site name was changed).

Page Organization

Use headings, lists, and consistent structure. Use cascading style sheets (CSS) for layout and style whenever possible. Test the pages to identify any accessibility issues after the style sheet is created to ensure accurate transformation in case the style sheets are turned off.

Scripts, Applets, & Plug-Ins

Any plug-ins or applications (e.g., Shockwave or portable document format [PDF]) are to be clearly identified. Include a notice to alert the users (and include a link to download the applet) of the reliance on these features in the web page presentation. Test the features to identify any accessibility issues. Provide alternative content in the event that active features are inaccessible or unsupported. Indicate links and file size of PDF files (e.g., PDF 250KB) to provide users with an expectation of download time. Additionally, it is good practice to do the same for Microsoft Word, PowerPoint, Excel and other native file formats.

There are several mistakes that designers can make when adding plug-ins (a software extension that provides added capabilities to the browser):

- Failing to include a warning to the visitor in advance that a plug-in is needed to view the site, and advising where the visitor can download it.
- Creating a link to the plug-in creator's web page, without notifying the visitor that linking to that web page will relocate the visitor from the original Commonwealth's website.

Some solutions to keeping the visitors' attention:

- Code the link to the plug-in to open a new browser window when clicked, rather than losing the web page. To meet accessibility requirements, warn the user. For information, see the ITB-ACC001 *IT Accessibility Policy.*
- Obtain direct access to the plug-in's File Transfer Protocol (FTP) site so website users only see the Commonwealth's website as the plug-in downloads.

White Space and Web Page Layout/Design

"White space," also known as "negative space," describes open space between design elements. White space is more than merely a background – it is an integral component of web page design. The effective use of white space is an important layout technique often overlooked by inexperienced designers. An inadequate amount of white space can lead to unreadable text, reduced graphics emphasis, and reduced page aesthetics due to a lack of balance between the elements on the web page.

Tables

Ensure that tables meet accessibility requirements as set forth in ITB-ACC001 *IT Accessibility Policy.*

"Assistants"

If word processing or other "assistants" are used, carefully preview the completed HTML coding. If "assistants" are used to convert databases and spreadsheet data, check the size of the converted pages. If the pages are too large and slow to load, edit the pages to reduce the file size.

Website Naming Conventions

Websites are to follow the website naming conventions set forth in ITB-NET005 *Commonwealth Domain Naming Standards (DNS) and Configuration*. This ITB states that all Internet accessible services that are provided by agencies will be registered within either pa.gov or state.pa.us domain. All internal, Windows-based systems are to participate in a subzone of LCL (i.e., PA.LCL).

Directory Structure and Filenames

Use lowercase letters for all filenames. Standardize on a naming convention for the filenames to reflect the content of the files. Be consistent in and with extensions. Do not include special characters (e.g., @, %, &) or spaces in naming of the files or directories. Use of underscore (_) or dash (-) is preferable to the use of special characters.

Plan the website directory structure. Do not place all files in a single directory unless there are only a few files and no additions are anticipated.

Acronyms and Terminology

Where possible, continue to simplify and distinguish terms. For example, spell out acronyms to reduce potential confusion or lack of clarity for users not familiar with government organizations/services.

Graphics and Animations

Download time is to be considered when including graphics on a page

- Graphic file sizes are to be limited to 30KB wherever possible.
- Graphics are to be saved in a Graphics Exchange Format (GIF) or Joint Photographic Experts Group (JPEG) format.
- List the actual width and height information in the anchor reference to the graphic to improve the page formatting time. (Example. img src="sample.gif" width=412 height=137 alt="Sample"). The alternate (alt) attribute is to provide a description of the graphic.
- Verify all use of graphics and animations follows Commonwealth Accessibility standards identified in ITB-ACC001 *IT Accessibility Policy*.

Image Maps, Graphs and Charts

The use of client-side image maps is preferable to server-side maps. If a site chooses to use a server-side image map, include redundant text links to assist users who may choose to tab through links without the use of a mouse. These links also assist users who turn off graphic images on their browsers and those users with search engine indexing problems.

Graphs and charts offer visual representation of specific data and are to meet Commonwealth Accessibility standards identified in ITB-ACC001 *IT Accessibility Policy.*

Advertising

Non-Commonwealth advertisements or web page sponsorships are not to be used until a business case is presented to, and approved by, the Deputy Secretary for Information Technology.

Cookies
Persistent cookies are only to be used with web analytics tools that do not collect personally identifiable information. Many individuals and organizations view cookies as an invasion of their privacy.

Frames
Frames are not to be used when creating new IIE websites. If frames are used within existing sites, agencies are to ensure the websites are redesigned to meet Commonwealth accessibility standards identified in ITB-ACC001 *IT Accessibility Policy.*

Multimedia
Sound and video files, as well as streaming audio and video, may be added to sites provided that:

- All multimedia files are developed in compliance with ITB-ACC001.
- Users receiving complete file transmission instructions are notified of file size;
- Multimedia files support Microsoft Windows Media Player, Real One Player, or other equivalent media players.

Since streaming media requires higher bandwidth availability for satisfactory performance, agencies considering using streaming media are to contact the OA/OIT/Bureau of Infrastructure and Operations in advance to discuss options.

Legal Review
Agency program managers are responsible for working with their respective Chief Counsel to:
- Verify the agency's right to use all software applications, information, graphics, photographs, and text on the site;
- Evaluate potential liability associated with site content.

Content Review and Approval
The responsibilities for content review and approval are as follows:
- Agency communications offices are responsible for the user interface design and the placement of content into the structure of agency websites. Agency communications offices are to collaborate with business owners for the creation and approval of content.
- Information technology offices are responsible for implementing the user interface design and facilitating the process of maintaining content on agency websites.
- Communications offices are responsible for collaborating with information technology offices to develop technically feasible user interface designs that conform to Commonwealth standards.
- Agency websites are to follow the Commonwealth Style guides issued by the governor's office.

Search Engines
The enterprise search engine standards are Oracle Web Center Interaction and Verity Ultraseek. OA/OIT Bureau of Services and Solutions is responsible for management and administration of this product in association with the Commonwealth Technology

Center/Enterprise Server Farm (CTC/ESF) managed by the OA/OIT Bureau of Infrastructure and Operations. The Verity Ultraseek product is installed at the CTC/ESF. In addition to using the Verity Ultraseek product, agencies may use the search functionality provided in content management and portal development products used to create IIE websites. For more information, see ITB-APP003 *Search Technology Standards*.

Resolution

Resolution is the image quality measured in the number of pixels that comprise the image. It is commonly referred to as pixels per inch (PPI). Because images are to be viewed on a screen, all web graphics are to be no larger than 72 ppi. A higher ppi does not improve the graphic effect and creates longer download times.

Refresh Schedule:

All standards identified in this ITB are subject to periodic review and possible revision, or upon request by the Enterprise Architecture Standards Committee (EASC).

Exemption from This Policy:

In the event an agency chooses to seek an exemption, for reasons such as the need to comply with requirements for a federally mandated system, a request for waiver may be submitted via the Community of Practice Procurement and Architectural Review (COPPAR) process. Requests are to be entered into the COPPAR Tool located at WWW.COPPAR.STATE.PA.US. Agency CIO approval is required. Contact your agency CoP Planner for further details or assistance.

Questions:

Questions regarding this policy are to be directed to ra-oaitb@state.pa.us.

Policy Supplements:

STD-APP005A: Commonwealth of PA Website Standards

References:

ITB-ACC001: IT Accessibility Policy
ITB-APP003: Search Technology Standards
ITB-APP029: Portal Technology Standards
ITB-NET005: Commonwealth Domain Naming Standards (DNS) and Configuration
Commonwealth Style Guide