

STATE OF VERMONT
Agency of Administration

STANDARD STC State Technology Collaborative	ORIGINAL POLICY ADOPTED BY STC DATE: 1/1/06	ORIGINAL POLICY NUMBER
	EFFECTIVE DATE	ASSOCIATED DOCUMENTS Web Common Look and Feel Policy & Standard

STATUTORY REFERENCE

OR OTHER AUTHORITY: **Web Common Look and Feel Policy**

APPROVAL DATE:

APPROVED BY: **Secretary of Administration**

POLICY TITLE: **Web Look and Feel Standards for Mobile Devices**

POLICY STATEMENT:

Implementation Timetable: 3 months from effective date

Performance Criteria:

Performance Criteria and Implementation Guidelines are necessarily technology-dependent and will be updated as technologies evolve and change. The web technologies considered the current standards as of this version include:

Markup Language Support - XHTML Basic 1.1 [XHTML-Basic] delivered with content type application/xhtml+xml.

Character Encoding - UTF-8 [UTF-8]

Colors - 256 Colors, minimum.

Style Sheet Support - CSS Level 1 [CSS]. In addition, CSS Level 2 [CSS2]@media rule together with the handheld and all media types

HTTP - HTTP/1.0 [HTTP1.0] or more recent [HTTP1.1].

Script - No support for client side scripting.

Implementation Guidelines

1. Background

1.1. Presentation Issues

The State of Vermont Web Look and Feel Standard specifies that all state Web sites be designed to look best on desktop size displays, and exploit capabilities of desktop browsing software. Web pages designed this way experience display problems or actually fail on a mobile device. Pages will often not appear laid out as intended and context and overview are easily lost. This type of page also requires excessive scrolling to be visible, especially if the top of the page is occupied by images and navigation links. This also means that the user does not have sufficient initial feedback to tell if they have reached the information they wanted.

1.2. Input

Mobile device input is often difficult, especially when entering text. Most mobile devices don't have a

pointing device, some lack back buttons. All pages should, therefore, provide a 'back' button or link.

1.3. Bandwidth and Cost

Mobile networks are slower than fixed data connections and have higher latency. This can lead to long retrieval times. Mobile data transfer costs the user money. This creates the problem that a mobile user may spend considerable time and money downloading a Web page that is not useable on their device. Loading pages formatted for desktop browsers contributes to poor usability and adds to the cost. The maximum total page size recommended is 20 kilobytes

1.4. User Goals

Mobile device users have different goals when using the Web than their desktop counterparts. Pages that offer immediate and goal-oriented content will better serve their needs. Mobile users are also not usually interested in viewing large files or in casual browsing.

1.5. Device Limitations

Most mobile browsers do not support scripting or plug-ins. Mobile devices have minimal processing power. This causes page rendering may take much longer than on a standard computer. This causes not only a delay in viewing the content but causes the device to use much more power than it would under normal operations, shortening battery life. These devices also have little memory available. Exceeding memory capacity can result in partial loading of content and other problems for the user.

2. Technical Specifications for Mobile Enabled Web Content (from W3C)

2.1. Usable Screen Width - 120 pixels, minimum.

2.2. Markup Language Support - XHTML Basic 1.1 [XHTML-Basic] delivered with content type application/xhtml+xml.

2.3. Character Encoding - UTF-8 [UTF-8]

2.4. Image Format Support – JPEG & GIF 89a

2.5. Maximum Total Page Weight - 20 kilobytes.

2.6. Colors - 256 Colors, minimum.

2.7. Style Sheet Support - CSS Level 1 [CSS]. In addition, CSS Level 2 [CSS2]@media rule together with the handheld and all media types

2.8. HTTP - HTTP/1.0 [HTTP1.0] or more recent [HTTP1.1].

2.9. Script - No support for client side scripting.

3. Mobile Device Web Page Look and Feel

3.1. Navigation

- 3.1.1. All state Web pages intended for use on a mobile device will include navigational controls in the topmost area of the page. Users should be able to see page content once the page has loaded without scrolling.
- 3.1.2. All state Web sites will use consistent navigation throughout the site.
- 3.1.3. The standard “least number of clicks” rule used in Web design does not apply to mobile devices. Because the user has to “click” to switch between hyperlinks in a list it may actually require less keying to navigate several layers of navigation than it would to scroll through a long list of choices.
- 3.1.4. The user should also be provided “up” and “down” links to skip entire sections of long documents.
- 3.1.5. When using a mobile device users often must select links, form controls and objects by use of tabbing. It is therefore crucial that as the user tabs through the page the various fields and objects are selected in a logical order. Ranking hyperlinks by frequency of use will also improve

the experience for the user.

3.2. Keyboard Short Cut

Since keyboard short cuts can ease the use of Web pages over mobile devices they should be used for all significant links on each page. The same shortcut should be used across the enterprise for common links such as the home page. Keyboard short cuts can be created using the accesskey attribute.

3.3. Phone Number Links

State Web Site should make use of the fact that most mobile Web users view pages via a phone. This allows the user to quickly and easily make phone calls if online phone numbers are linked to dial automatically.

Example:

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<a href="tel:+12065450210">+1 206 545-0210</a>
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3.4. Link Target Identification

Use clear, concise, descriptive link text to help users decide whether to follow a link. Indicate the size of any file linked to. All file formats other than XHTML, GIF and JPG should be noted. Many mobile devices do not support certain file formats such as, PDF files, bitmap files, MS Office files, etc.

3.5. Image Maps

Image maps will not be used in designing state mobile ready pages.

3.6. Refreshing, Redirection and Spawned Windows

- 3.6.1. Each of these activities is likely to cause the user confusion, or add cost and delay to their interaction.
- 3.6.2. Some mobile devices use a separate window for input; this section does not refer to such windows.
- 3.6.3. Many mobile devices cannot support more than one window and consequently, attempting to open one will have unpredictable results.
- 3.6.4. Auto-refreshing pages are widely recognized as presenting accessibility problems. Auto-refreshing will not be used on state mobile pages.
- 3.6.5. Redirection adds to delay on slow links; so use a maximum of one redirect per page and limit the number of pages that are redirected.

3.7. Page Content

Ensure that content is suitable for use in a mobile context. Use clear and simple language. Limit content to what the user has requested.

3.8. Page Size

Divide pages into usable but limited size portions. Page size should take into account the memory limitations of mobile devices. Large pages take a long time to load and mobile devices have limits on page size. If pages are too short the user will need to load several pages to read the desired content.

3.9. Scrolling

Limit scrolling to one direction, unless secondary scrolling cannot be avoided.

3.10. Navigation Bars etc. (Extraneous material)

Material that is significant to the requested page should precede any content that is not. The user should be able to read the content of the page on initial view. Only a small portion of the area of the page should precede the actual content. Navigation should be kept to a minimum at the top of each page. There should be no decorative images or other material in this space.

3.11. Graphics

3.11.1. Do not use graphics for spacing.

3.11.2. Do not use images that cannot be displayed by mobile devices. Do not use large files unless critical information would be lost by use of a smaller format.

3.11.3. Background Images will not be used on state mobile ready Web pages.

3.12. Color

3.12.1. Whenever color is used as an indicator, use a non-color-based indicator as well. For example, required form fields could be identified with asterisks as well as color.

3.12.2. Background colors will be avoided since color schemes can create problems with legibility, but when necessary appropriately contrasting background and foreground colors will be used.

3.13. Page Title

3.13.1. All state mobile ready Web pages will have a short, descriptive page title.

3.13.2. Long titles may be truncated on a mobile device. For longer titles make sure the first few words are the most descriptive. For example, instead of "State of Vermont, Agency of Administration, Chief Information Officer" use "Chief Information Officer, Agency of Administration, State of Vermont"

3.14. Tables

Some mobile devices do not support tables. Therefore the use of tables should be avoided. Never use nested tables. Never use tables for layout. If table must be used then also provide an alternate way to view the content.

3.15. Fonts

Do not rely on support of font related styling.

3.16. Non-Text Items

3.16.1. Non-text items should be avoided. If such an element is required the non-text element must have a text equivalent.

3.16.2. Due to the bandwidth and time required to download images they should be avoided. If they must be used the text equivalent will display while the images are still loading, allowing the user to use the page without wait.

3.16.3. Many mobile devices do not support embedded objects or scripts. It is often not possible for users to add plug-ins to their mobile browser. Content must be designed with this in mind.

3.16.4. If images are used, specify the size of images in markup whenever possible. Resize images at the server when possible. By doing this the user's device will not have to re-flow the page once the images load. This will decrease the amount of time the user must wait to view the page as intended.

3.17. Measures

Do not use pixel measures or absolute units in HTML or style sheets. Instead use em or percentage measures. This allows browsers to adapt content to fit whatever size display is required.

3.18. Style Sheets

The Mobile style sheet should be used. Use style sheets to control layout and presentation. All pages must be able to be easily read without style sheets. Keep style sheets small.

3.19. Error Messages

Error pages must provide informative messages and a means of navigating back to useful information.

3.20. Cookies

No state mobile ready Web page should rely on cookies being available on the user's device.

3.21. Form Input

- 3.21.1. Mobile devices do not usually have an efficient user interface for entering text. When using forms on a Web page keep the number of keystrokes to a minimum, avoid free text entry where possible, and provide pre-selected default values where possible.
- 3.21.2. Label all form controls and associate labels with form controls. Position labels so they are visually related to their respective forms.

3.22. Resources

The following are a list of online resources that may prove helpful in developing mobile ready Web pages:

- W3C Best Practices, Mobile Web Best Practices 1.0 - <http://www.w3.org/TR/mobile-bp/>
- Google Mobile Emulator - <http://www.google.com/gwt/n>
- Emulator Images for Windows Mobile 2003-based Pocket PC Development - <http://www.microsoft.com/downloads/details.aspx?FamilyID=57265402-47a8-4ce4-9aa7-5fe85b95de72&displaylang=en>
- Emulator Images for Windows Mobile 2003 Second Edition software for Smartphone - <http://www.microsoft.com/downloads/details.aspx?FamilyID=791bae52-b057-4d72-b263-105534825ca5&displaylang=en>