

Architecture Standard

Purpose:

The Standards Team takes a broad approach to defining the Architecture Standard by describing what the architecture should be capable of doing.

Collectively, these standards are intended to:

- Make website navigation easier and more intuitive for users
- Ensure search engines index web pages properly, making it easier for users to find information on the site
- Make the website accessible and usable by users of the site

The Architecture Standard definition of the configuration of servers is an Information Technology Division responsibility and will be addressed by the Technical Team.

Policy:

The hardware architecture should be:

Scalable – capable of modification depending on emerging needs, policy changes or technological advances that offer opportunities for improvement.

Appropriate to handle normal high-volume traffic, but also capable of handling spikes in traffic during intermittent high volume events such as elections, new programs, changes in programs due to laws, or changes in external circumstances.

Reliable – consistently available to users: stable, usable and accessible

The standard for information architecture includes:

Separating presentation from content to allow the greatest flexibility, maintainability and consistency of the presentation (look and feel), by using a centralized design. Separating content from presentation enables the Secretary of State to make changes to the look of its web page without re-entering content and layout. This centralized design is accomplished through the use of cascading style sheets (CSS). When using CSS, linked style sheets must be used instead of embedded style sheets. Absolute font sizes should be avoided; instead specify that the base font size will be defined by the user's preference setting. Also, pages should continue to work when style sheets are disabled. This Architecture Standard does not define either the presentation or content of web pages; another WGG team establishes the presentation and content guidelines for the Secretary of State.

Search engine optimization (SEO) is accommodated by the use of meta description tags and semantically correct code. To ensure information can be found through commercial search engines like Google and Yahoo, meta description tags and semantically correct code must be used by web developers.

The practices used for Search Engine Optimization is closely associated with the concept of “scent of information” and applies to Naming Conventions discussed below.

Use of semantically correct code: Web developers must use semantically correct code (html) because it ensures the web page is accessible, that the web page will render correctly (appear correctly formatted to the user/viewer), and commercial search engines can index the page properly. Using semantically correct code influences how the page is indexed by commercial search engines. For example, correctly coded headings are given more prominence in a search index than incorrectly coded text that looks like a heading, creating terms or keywords that can be used to find that page more easily.

Meta Description tags: A key component used by search engines is the meta description tag. The meta description tag contains a short description about the contents of the web page. Search engines use this meta description to index the page and to provide summary information in search results.

Naming conventions are intended to allow users to intuitively determine what search terms to use to find which web page they are looking for on a website. Therefore, web developers should use plain English, “meaningful names” to title files and folders, avoiding jargon/abbreviations not widely known and understood by the public. For example, the county elections officials page is currently named "elections_d.htm." A better approach would be to use the file name “county-elections-officials.htm". The latter file name is more descriptive and is more likely to lead users to the web page they are looking for using intuitive search terms.

For ease of use and maintenance, standardized naming conventions should be used. Naming conventions should also follow the guidelines and practices listed below:

- File and folder names should be as concise and descriptive as possible.
- File and folder names should use full words or standard abbreviations.
- Web developers must eliminate the use of underscores (_) in favor of hyphens/dashes (-).
 - Correct: service-options.htm
 - Incorrect: service_options.htm

- File and folder names must use all lower case letters (no capitalization of words).
 - Correct: service-options.htm
 - Incorrect: Service-Options.htm
- File and folder names must contain no spaces
 - Correct: service-options.htm
 - Incorrect: service options.htm
- All applicable file extension names should be named as “htm” files not “html.”

Coding Standards

1. Validation - The California Secretary of State website is designed to the XHTML 1.0 Strict specifications as defined by the WC3. All new and existing pages must aim to validate against these specifications. One of the following tools should be used for the purpose of validating, after the web page design is complete, that the code used is WC3 compliant:

Dreamweaver validation tool (embedded as a feature within software)

XHTML Validator

CSS Validator

2. DOCTYPE Declaration - In order to conform to XHTML 1.0 Strict, every (X)HTML page on the site must start with the following DOCTYPE declaration:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
```

This will ensure the highest degree of compatibility with past, current, and future browser technology.

3. Character Set - All pages must use the Unicode UTF-8 character set

```
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
```

All special characters must be marked up using the correct named entity of Unicode equivalent in order for the page to display correctly across browsers and to validate.

4. Browser Support - It is not feasible for the Secretary of State to attempt to support an unlimited number of browsers, so the criteria that the Secretary of State should use when determining which browsers to support should include:

- Visitor usage – any browser used by 10% or more of visitors to the Secretary of State website should be supported.

- The ability to test developed web pages in multiple browsers and/or versions – web developers must view pages in multiple browsers to ensure all pages render correctly in all supported browsers. A “virtual” browser should be installed on the Secretary of State system, so the web developer can test a web page that has been developed before its release to ensure that the web page renders properly.

There must also be a regular schedule of review to validate browser support by checking Secretary of State web logs and search engine web logs to determine changes in user preferences and to note trends in browser usage. The review should occur at least every three months.

5. Title and Descriptors - To encourage ease of navigation and good search engine ranking, all pages should contain a unique title and description.

Page titles should be simple, descriptive and distinct, avoiding internal jargon. Titles should be defined with at least two parts. The first part is specific to the page – what is the page about? The second part should be – California Secretary of State.

Examples:

```
<title>Business Programs - California Secretary of State</title>  
<title>Election Results - Elections & Voter Information - California  
Secretary of State</title>
```

Page descriptions should describe the content and purpose of the page in one to three short sentences.

Example:

```
<meta name="Description" content="This page lists contact information  
for the California Secretary of State." />
```

6. Images - Alternative text is required for every image element on the site. Alternative text must provide an adequate description of the content or function of the image.

Image sizes defined in HTML code must be accurate. Accurate width and height attributes are required to ensure the page is optimized for the fastest download by the website visitor.

If the image is purely decorative, the alt text can be left blank.

7. Links - Each link on a page should use unique text as well as describe the destination of the page to which it is linking. Links such as "Click Here" or "More" should be avoided.

Links that open in a new window must not be used because such links do not meet our accessibility standards.

Links to downloadable documents, such as Portable Document Formats (PDFs), should contain the document size, format, and specify that the link is a download rather than a link to another web page.

8. Tables - Tables are reserved for data and should not be used for page layout. Data tables should be marked up using appropriate meaningful elements such as: <th>, <td>, <thead>, <tbody> and <tfoot>. And appropriate meaningful attributes such as: summary, id and headers. Using appropriate and meaningful elements ensures the table will meet our accessibility standards.

9. Screen Colors - Screen colors used in the Secretary of State web pages should fit into the 32-bit range.

10. Screen Resolution - In full-screen mode, the Secretary of State web pages should display on a screen resolution of 1024 x 768 with no right-to-left scrolling.