NCDIT | NORTH CAROLINA DEPARTMENT OF INFORMATION TECHNOLOGY

State of North Carolina
Digital Accessibility and Usability Standard

N.C. Department of Information Technology

Version 1.1

January 16, 2025

Document Information

Revision History

Date	Version	New or Revised Requirement	Description	Author
April 5, 2024	1.0	New	Standard Published	Chris Brittingham
Jan 16, 2025	1.1	Update	• Clarified Third Party website requirements in Scope. • Updated the ADA Title II link to the approved regulations.	Chris Brittingham

Document Details

Department Name	Digital Solutions
Owner	Amy Hepler (Lead UX/Accessibility Developer)
Title	Digital Accessibility and Usability Standard
Publication Date	January 16, 2025
Document Type	PDF
Document Number	1
Version	1.1

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Purpose

This standard offers guidance for designing and delivering websites and digital services to prioritize a digital-first public experience[1] in the State of North Carolina. It outlines statutory requirements, clarifies mandates, and expands on best practices for the state's digital assets.

With over 10.2 million constituents served annually, the majority of interactions occur online and increasingly on mobile devices. Recognizing the shift to digital channels as the primary means of engagement, state agencies are urged to develop and design their websites and digital services to meet the public's expectations for high-quality, user-friendly experiences that are seamless, accessible, and secure by design. This approach aims to enhance customer satisfaction, trust, and overall experience.

Content Lead

North Carolina Department of Information Technology (NCDIT) – Digital Solutions Team

Scope

Except as otherwise provided, this standard applies to all North Carolina state agencies' websites and digital services that are:
- Maintained by an agency directly or by a contractor or other entity on behalf of an agency; and
- Intended for use by the public

State agencies are also encouraged to apply the requirements of this standard to internal-facing websites and digital services, such as social media sites, to the greatest extent practicable.

This standard does not apply to content posted by a third party where the third party is not posting due to contractual, licensing, or other arrangements with a public entity.

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[1] Digital-first public experience principles are informed by the White House, Office of the Federal Chief Information Officer, Delivering a Digital-First Public Experience

Accessibility Standards for Websites and Digital Services

State agency websites and digital services serve agencies' missions, aiding users in finding necessary information. Agencies should adhere to the requirements and principles described below for a unified, high-quality, digital experience that is simple, seamless, and secure across agencies for all users.

A. WCAG 2.1 (Level AA) Compliance

In designing websites and digital services, agencies must strive from the start to maximize access and usability, aiming to cater to the broadest audience. All agency websites and digital services must adhere to the official WCAG 2.1 (Level AA) compliance standards, in accordance with federal guidelines and Americans with Disabilities Acts Title II, for accessibility.

WCAG 2.1 requires that all websites and digital services follow four main principal guidelines. Each guideline has success criteria and associated techniques for HTML, CSS, SMIL, client-side scripting, server-side scripting, Flash, PDF, Silverlight, and ARIA. Although the WCAG 2.1 compliance standards may initially seem overwhelming, the WCAG Quick Reference offers practical implementation techniques and guidance. The main principles are as follows:

1. **Perceivable:** Information and user interface components must be presentable to users in ways they can perceive.
    - **1.1.x** Provide text alternatives for any non-text content so that it can be changed into other forms people need, such as large print, braille, speech, symbols, or simpler language.
    - **1.2.x** Provide alternatives for time-based media.
    - **1.3.x** Create content that can be presented in different ways without losing information or structure.
    - **1.4.x** Make it easier for users to see and hear content including separating foreground from background.
2. **Operable:** User interface components and navigation must be operable.
    - **2.1.x** Make all functionality available from a keyboard.
    - **2.2.x** Provide users enough time to read and use content.
    - **2.3.x** Do not design content in a way that is known to cause seizures.
    - **2.4.x** Provide ways to help users navigate, find content, and determine where they are.
    - **2.5.x** Make it easier for users to operate functionality through various inputs beyond keyboard.
3. **Understandable:** Information and the operation of the user interface must be understandable.
    - **3.1.x** Make text content readable and understandable.
    - **3.2.x** Make Web pages appear and operate in predictable ways.
    - **3.3.x** Help users avoid and correct mistakes.
4. **Robust:** Content must be robust enough that it can be interpreted reliably by a wide variety of user agents including assistive technologies.
    - **4.1.x** Maximize compatibility with current and future user agents, including assistive technologies.

- **Test for Accessibility:** Agencies must integrate accessibility testing into website updates and releases, addressing detected issues before code deployment. Testing should encompass automated scanning, manual testing completed by users, and usability testing with people with disabilities, when appropriate, as well as testing with users of adaptive technologies, as automated tools have limitations in detecting all issues. Manual testing is essential to ensure comprehensive coverage of accessibility requirements.

- **Promote Accessibility and Welcome Feedback:** Agencies should develop and publish an accessibility statement that provides a public feedback mechanism to contact the agency in

case a user encounters problems and wishes to seek assistance or report an accessibility issue.

B. Consistent Visual Design and Agency Brand Identity

Public trust in the State government for unique and reliable information and services is crucial. Clear distinction is essential to ensure individuals know when they are accessing state information, using government services, or communicating with a representative of the State Government.

- **Add an official state website identifier:** Use the identifier to minimize confusion, indicating that the website is an official government site and highlighting the advantages of secure connections and privacy. Refrain from applying the identifier to test sites or those not intended as official government websites. View a functional example on nc.gov. The identifier reads as follows:
  - On devices larger than 575 pixels:
    "An official website of the State of North Carolina" should be displayed in the upper left hand corner.
    - It is recommended to follow the nc.gov official state website identification followed by a collapsed security/privacy component.
  - On devices smaller than 575 pixels, the identifier may be shortened:
    "An official website of NC"
    - It is recommended to follow the nc.gov official state website identification followed by a collapsed security/privacy component.
- **Use a state government subdomain:** Agencies should use an nc.gov subdomain (I.e. "sitename.nc.gov") for public-facing websites and digital services that are used for official communication. It is permitted, but not encouraged, to register domains such as .com, .org, and .net to mitigate against cybersquatting. These URLs should redirect to the canonical nc.gov URL. See NCDIT Domain Management Guidelines for more information.
- **Streamline user experience:** Simplify the user experience by minimizing unnecessary interruptions such as pop-ups, modals, overlays, and messages that impede task completion. Only incorporate such elements when essential to the overall user experience, such as a warning before permanently deleting an item.
- **Do not alarm users in ways that erode trust:** Agencies should carefully craft legal, security, and error messages to avoid undermining trust and hindering user engagement. Notices related to access, authorized use, or monitoring should be communicated clearly without adopting a tone that might deter users, ensuring a welcoming atmosphere for appropriate interaction with the website or digital service.

C. Authoritative Content that is Easy to Understand

State agencies provide unique and essential information to serve diverse purposes and audiences. Maintaining high information quality is crucial for public trust, clarity, and efficient government operations. To prevent outdated or inaccurate content, agency websites and digital services require regular internal reviews to ensure information remains timely, accurate, and free from duplication.

1. One Answer

- **Remove outdated content:** Agencies must promptly rectify outdated or inaccurate content. When removing content, agencies should create redirects (e.g., HTTP 301) to direct the public and search engines to new or more accurate content.
- **Retire duplicate websites and digital services:** Agencies should eliminate redundant websites and digital services. Each website, digital service, and piece of content should align with the organization's goals and cater to identified user needs.
- **Get user feedback on content:** Agencies should provide and monitor a feedback option for users to report satisfaction with web content and help identify issues like inaccuracy,

outdatedness, lack of clarity, or duplication. Continuous monitoring, measurement, and optimization of content are encouraged to ensure the public receives accurate information and helpful answers.

- **Utilize landing pages:** Avoid creating standalone websites ("micro sites") for marketing, advertising, and public awareness campaigns that unnecessarily duplicate information or functionality found on the agency's principal website. Instead, agencies should use the URL for the authoritative web page or tool on the agency's principal website in their campaigns (e.g., [agency].nc.gov/find-services).

2. Plain Language

- **Write content in plain language:** Agencies should use plain language for any document that is necessary for obtaining any state service or benefit, provides information about a state service or benefit, or explains to the public how to comply with requirements the Federal Government administers or enforces.
- **Write and test content for the intended audience:** Agencies should write online content for the intended target audience and should routinely review online content to make sure it is easy for the audience to read and understand, aiming for clarity at an eighth-grade reading level.
- **Write content in conversational language:** Agencies should use clear and concise sentences; avoid slang, jargon, and acronyms; and use logical organization and informational headings. Agencies should write conversationally, like regular people talk to each other.
- **Avoid unnecessary "legalese":** Unnecessary legal and bureaucratic jargon may inhibit public comprehension and should be avoided on websites aimed at the public.

D. Information and Services that are Discoverable and Optimized for Search

Search functionality is a fundamental and expected part of websites and digital services. External search engines play a crucial role in public access to state information online. To enhance discoverability, agencies' websites should be well-structured, include descriptive metadata, employ machine-readable content, and adhere to search engine optimization (SEO) practices.

- **Use on-site search functionality:** Agencies' public-facing websites must contain a search function that allows users to easily search content intended for public use. This search function should be a site-wide global search.
- **Design search-engine optimized content:** Agencies should structure public content for effective crawling and indexing by search engines. Best practices, such as using sitemaps, robots.txt files, and descriptive metadata in commonly parsed fields, should be employed to enhance web content visibility.
- **Promote the "right" content:** Agencies should prioritize strategic SEO efforts aligned with the target audience. Given the varying importance of content, optimizing it appropriately is crucial to avoid negative user experiences. Conducting keyword research and analyzing third-party search results help agencies understand how the public seeks information, enabling optimization for better alignment with user queries.
- **Optimize content for discoverability and utility:** Optimize online content for efficient navigation, without forcing the user to understand bureaucratic jargon or unnecessary information that hinders understanding.

E. Secure by Design, Secure by Default

State agencies must integrate application security considerations into every phase of website and digital service design and development.

- **Encrypt in transit:** Agencies must encrypt all web traffic, both internal and public-facing, using HTTPS. Agencies should "preload" their registered .gov domain as HTTPS-only in modern web browsers.

- **Provide secure and usable authentication:** State websites and digital services that require authentication should be both secure and easy to log into. Public-facing agency systems that support multi-factor authentication (MFA) must give users the option to use phishing-resistant authentication. To ensure a diversity of options for public access, agencies should permit a variety of authentication methods. Agencies shall not require users to periodically rotate their passwords.
- **Design secure digital services and experiences:** When developing software, agencies should follow and automate security best practices to ensure security is considered throughout all stages of the design and development lifecycle, to the greatest extent possible.
- **Conduct regular security assessments and testing:** Agencies should regularly assess the risk to websites and provide commensurate security testing of those sites based on that assessment. The assessment should consider the potential impact of a security incident on vital transactions or core services provided to the public, access to timely information, government and vital external operations, and public trust. Agencies should perform manual penetration testing, where appropriate, based on threat analysis and the criticality of the underlying system.
- **Allow users to safely report security issues:** Each agency should have a vulnerability disclosure that applies to all its internet-accessible websites and digital services, even those that are not intentionally made available to the public. The vulnerability disclosure should be linked to the [Statewide Cybersecurity Incident Reporting Form](). This disclosure must allow the public to report potential security vulnerabilities and provide that the agency will not pursue legal action based on activities that represent a good faith attempt to comply with the policy. While agencies may list their registered domains as a reference, they must not limit the scope of the disclosure to specific websites or use an allow list to restrict the range of users who may submit reports.

F. User-Centered Design

State websites and digital services should be designed and delivered with users at the center of the experience while aligning with agency goals.
- **Start with users' wants and needs:** Agencies should conduct generative user research to identify pain points and opportunities for improving existing experiences or to design new digital solutions.
- **Engage users throughout design and development:** Agencies should assess the entire user experience of their websites and digital services to minimize public burden.
    - Seek actionable feedback from diverse user groups throughout development, from initial design to usability testing and performance monitoring.
    - Establish processes for qualitative feedback from actual users, avoiding reliance solely on web analytics or frontline staff perspectives.
    - Conduct user research directly with the real-life user base.
- **Test with a representative cross-section of users:** Agencies should continually conduct usability testing for websites and digital services, validating ease of use and user satisfaction. In response to identified pain points and challenges, make incremental, iterative changes to address real-time user needs and enhance usability or functionality.
- **Make data-driven design and development decisions:** Agencies should improve website and digital service functionality through data-driven decision-making, including measuring task completion, analyzing user flows and behavior with web analytics, assessing satisfaction via feedback surveys, optimizing web pages for performance, and researching user burden.
- **Ensure language accessibility:** Numerous members of the public engaging with government entities possess limited English proficiency (LEP) or communicate in languages other than English (LOTE). Agencies should seek to align the languages of their websites and digital services with the preferences and requirements of their constituents.
    - For important agency related information, agencies should utilize human-based multilingual content creation and test with native language speakers to verify

accuracy and to understand cultural context, when possible. This is the goal that state websites should strive to meet.
- If human-based content verification is not possible, agencies should utilize machine translation services (e.g., services where a computer algorithm translates text automatically into another language without human assistance or review, similar to Google Translate features).

G. Mobile-First Design that Scales Across Varying Device Sizes

Publicly targeted state websites and digital services must be accessible and usable across various devices and platforms. The majority of the public now accesses state information and services online, with a growing trend towards mobile devices.
- **Design mobile-friendly and device-agnostic websites and digital services:** Agencies should ensure public-facing websites and digital services are mobile-friendly, allowing easy navigation and access on smartphones, tablets, or other mobile devices to the extent possible.
- **Design mobile-first experiences:** Agencies should prioritize mobile-first design principles for developing or revamping public-facing websites and digital services. This ensures responsiveness across various devices, screen sizes, and popular mobile browsers.
- **Test on mobile and tablet devices:** Agencies must conduct functional tests for websites and digital services on desktops, laptops, mobile devices, and tablets, assessing both usability and performance. While testing on actual mobile devices is ideal, modern browsers with emulators and viewport constraints serve as acceptable substitutes during development, particularly when resources are limited.
- **Optimize for performance:** Agencies should regularly analyze websites and digital services for load speed, aiming for optimal performance with high page speeds, low load times, and small page sizes. Utilize techniques like minification and image optimization and eliminate unnecessary plugins. Special attention should be given to low-bandwidth users who rely on mobile devices and cellular connectivity to interact with the government online.

H. Other Digital Experience Requirements

1. Software Development Principles

Complex systems can make websites and digital services costly and difficult to manage and maintain over time. Building around principles of agility, reliability, scalability, maintainability, interoperability, and simplicity can reduce these burdens.
- **Default to static websites:** For websites or digital services without the need for a dynamic back-end service, agencies should favor "static" architectures. These architectures serve static files at specific URLs instead of dynamically executing code, resulting in a smaller attack surface. Static websites are cost-effective and load faster, particularly for users with low-bandwidth internet, as they do not execute server-side code.
- **Default to HTML:** HTML is the standard for web document display, offering benefits like accessibility, assistive technology friendliness, dynamism, and ease of maintenance. Agencies should primarily use HTML for web content instead of other formats like PDF or DOCX, designed for printing or preserving layout, unless a specific user need requires an alternative format.

2. Required Links

Agencies must include the following links to information on legal compliance, points of contact, and other relevant topics in the footer of their principal website or sub-agency websites.
- nc.gov
- Accessibility statement

- [Privacy Policy](#): All state government websites are encouraged to link to the following privacy statement addressing the collection, use, disclosure, and security of information that may be obtained when you visit North Carolina government websites.
- Website Feedback
- [Disclaimer & Terms of Use](#)

Privacy

State agencies must prioritize and safeguard personal information privacy throughout the information lifecycle on agency websites and in digital services. This involves identifying and addressing privacy risks associated with these products and providing clear, accessible notices about the collection, use, maintenance, and dissemination, of personally identifiable information (PII) in accordance with state and federal laws and state policy. Effective communication and transparency, within the agency and externally through its websites, is crucial to ensuring public awareness and understanding of privacy.

A. Fair Information Practice Principles (FIPPs)

The State of North Carolina adopted the FIPPs in May 2022. The FIPPs provide guidance to agencies about how to reduce privacy risks and fairly handle personal information entrusted to the state. The FIPPs support the creation of reliable records to inform decision-making. State agencies should be guided by the FIPPs in their data collection and use. The eight FIPPs can be found in this memorandum: [Adoption of Fair Information Practice Principles](#).

B. Privacy by Design (PbD)

Privacy should be incorporated into agencies' website creation from the beginning and throughout the data and website lifecycle. Information about PbD, including the 7 foundational principles to operationalize PbD, can be found under the Guidance tab on the [NCDIT Privacy Laws, Policies and Guidance page](#).

C. Privacy Policy

All websites must post a clearly visible privacy policy. If an agency website's privacy policy differs from the [nc.gov Privacy Policy](#), the below guidelines must be followed:

1. Websites

Agencies must post Privacy Policies on all public-facing websites and digital services (including their principal, sub-agency, component, and program websites and digital services). For each website, agencies must post a link to that website's Privacy Policy on any known, major entry points to the website as well as any webpage that collects PII. A Privacy Policy must:
- Be written in plain language and organized in a way that is easy to understand and navigate.
- Provide useful information that the public would need to know to make an informed decision about whether and how to interact with the agency.
- Be updated whenever the agency makes a substantive change to the practices it describes or data it collects.
- Contain contact information for submitting a privacy question or complaint. Agencies must provide appropriate agency contact information for individuals who wish to submit a privacy-related question or complaint.

To ensure appropriate risk management and compliance with applicable law and policy, agencies should consult their privacy officers and security liaisons at the earliest planning and development stages for websites and digital services that involve PII, complete a privacy threshold analysis, and ensure that privacy risks are tracked throughout the development and information lifecycles. A policy threshold

analysis is needed to address and mitigate privacy risks for websites or applications that collect PII. A review of the website privacy policy must be completed by the agency privacy officer/privacy point of contact and legal counsel.

2. Mobile Applications

For all mobile applications, a Mobile Application Privacy Policy will need to be completed using the [Mobile Application Privacy Policy Template](). A review of the website privacy policy must be completed by the agency privacy officer/privacy point of contact and legal counsel prior to posting.

Digitization of Forms and Services

Relying on paper-based processes hinders the digital experience that the majority now expects. Designing and modernizing forms, services, and processes with digital service delivery in mind ensures the transformative benefits of a digital government, such as increased convenience, cost savings, and higher public satisfaction and trust.

A. Forms

Forms are crucial for accessing North Carolina services. Digital forms, as web applications, offer advantages over paper forms, allowing for digital capture, validation, submission, and automated processing of structured information. Well-designed digital forms enhance accuracy, usability, security, and efficiency, and must be accessible while reducing costs and labor associated with paper document management.

- **Provide a digital option for forms:** Prioritize digital forms over paper or electronic ones whenever possible, making them available to the public to the greatest extent practicable. In cases of limited resources, focus on digital options for forms that directly support services or benefits with the most significant public impact.
- **Design digital forms first:** When revising forms with both digital and paper versions, design the digital form first and use it as a baseline for the paper form redesign.
- **Digitize paper forms:** Establish internal review processes to promptly identify non-digital forms and prioritize their digitization, focusing on forms with the highest impact on the public.
- **Keep digital forms digital, end-to-end:** Ensure information collected via a digital form stays digital throughout its lifecycle. Avoid unnecessary conversion or transformation into paper or electronic formats unless strictly necessary.

Customer Experience and Digital Service Delivery

Customer experience encompasses public perceptions and satisfaction with agency interactions, products, or services. Digital experience refers to technology-enabled interactions, covering both digital and traditional service channels. A seamless digital experience is crucial for customer trust and satisfaction, as modern service delivery relies heavily on digital channels. Agency success in digital experience involves a long-term strategy, investment in digital transformation, information technology modernization, and building a skilled digital workforce for public service delivery.

- **Apply customer experience principles:** Agencies are encouraged to apply leading customer experience and service delivery practices to all services.
- **Leverage customer feedback data:** Agencies should collect customer metrics for both digital and non-digital experiences, regularly measuring trust, confidence, and satisfaction. Utilize customer experience data and feedback for informed business decision-making and operations.
- **Provide transparency to users:** Agencies should design transparency into the information and services they provide so the public has a greater understanding of how agencies operate.

Regulations and Applicable Laws

The following reference sections in the N.C. General Statutes provide additional information with respect to compliance of state law:

- [N.C.G.S.143B-1320(a)(17)](#)

- [N.C.G.S 143B-1376](#)

- [N.C.G.S. 75-61(10)](#)

Standard Review Cycle

The Digital Accessibility and Usability Standard will undergo a periodic review at annual intervals, or as changes are required. Updates to the standard will be determined based upon the nature of the standard and requirements driven by need.

Any identified changes, or outdated information within the standard will be addressed promptly. This may involve revisions, additions, or removals as needed to ensure that standards remain current and relevant. The following roles provide leadership and management over this standard in accordance with the NCDIT Policy Management Policy:

• Secretary of the N.C. Department of Information Technology and State Chief Information Officer has approval authority.

• Chief Deputy State Chief Information Officer (or delegate) has policy management responsibilities.

Definitions

Accessibility

The "ability to access" and benefit from a system or entity. The definition focuses on enabling access for people with disabilities or enabling access through the use of assistive technology. NOTE: Accessibility should not be confused with "usability."

Agency

Any State government entity, department, division, board, commission, program, initiative, or separate unit of government created or established by constitution or law.

Assistive Technology

Assistive technology (AT) is any item, piece of equipment, software program, or product system that is used to increase, maintain, or improve the functional capabilities of persons with disabilities, who are aging or experiencing medical conditions.

Customer

Any individual, business, or organization that interacts with a state agency.

Digital Form

A web application that has the capability to capture, validate, submit, and process structured information digitally and in an automated manner.

Digital Service

Any transactional or informational service that is delivered over the internet across a variety of platforms, devices, and delivery mechanisms including web-based software, digital documents, multi-media, web applications, and mobile applications.

Languages other than English (LOTE)

Languages Other Than English refers to any language that is not English. It is commonly used in education to refer to the study or teaching of foreign languages.

Limited English Proficiency (LEP)

Limited English proficiency is a term used in the United States that refers to a person who is not fluent in the English language, often because it is not their native language.

Mobile Application

A software application designed and developed to be used on a mobile device (such as a smart phone or tablet) that uses the mobile device's operating system (e.g., Apple iOS, Google Android). This does not include websites and web applications that are optimized for mobile devices and are only accessed using a web browser on a mobile device.

Plain Language

Writing that is clear, concise, well-organized, and follows other best practices appropriate to the subject or field and intended audience.

Public-facing

Intended to be accessed and used by a member of the public or a customer. By contrast, "internal-facing" means intended to be accessed and used by state employees or contractors on behalf of an agency.

Usability

The quality or state of being usable. The ease of use by an individual user. The extent to which a product or service can be used by specific users.

User

Any individual that interacts with a website or a digital service, often to complete a task or transaction.

Web Application

A software program that is accessible using a web browser.

Website

A group of globally accessible interlinked web pages under a unique host name that is accessible using a web browser.

References

Mobile Application Privacy Policy Template

This mobile application privacy policy template incorporates the principles embodied in the Fair Information Practice Principles adopted by the State in May 2022.

Privacy Policy
For the
[INSERT NAME] Mobile Application

Overview

The overview should be a single paragraph that is used to describe the agency mobile application ("mobile app"). It should include the name of the agency that developed the app as well as the name of the mobile app, itself. This overview should also provide a brief description of the mobile app's purpose and function.

Information Collected

Provide the categories of individuals for whom information is collected (e.g. users of the app), and for each category, list all information, including PII and sensitive content (if any) that is collected by the mobile app. Details regarding the retention of information collected by the mobile app should also be addressed in this section.

Uses of Information

List each use (internal and external to the agency) of the information collected or maintained by the mobile app. Provide a detailed response that states how and why the different data elements is used.

Information Sharing

Discuss the external agency sharing of information, if any. External sharing encompasses sharing with other state and local government, federal government, and private sector entities.

Application Security

Discuss the technical safeguards and security controls, specific to the particular mobile app, in place to protect information that is collected and/or maintained by the mobile app.

How to Access or Correct your Information

Provide information about the processes in place for users of the mobile app to seek redress which may include access to records about themselves, ensuring the accuracy of the information collected about them, and/or filing complaints.

Analytics Tools

Discuss any analytics tools that the mobile app may use. This should include a description of any information collected through these analytic capabilities.

Privacy Policy Contact Information

Provide contact information so that users may provide feedback and/or ask questions in regards to this mobile app Privacy Policy. This contact information may include responsible office's phone number, email, and mailing address.