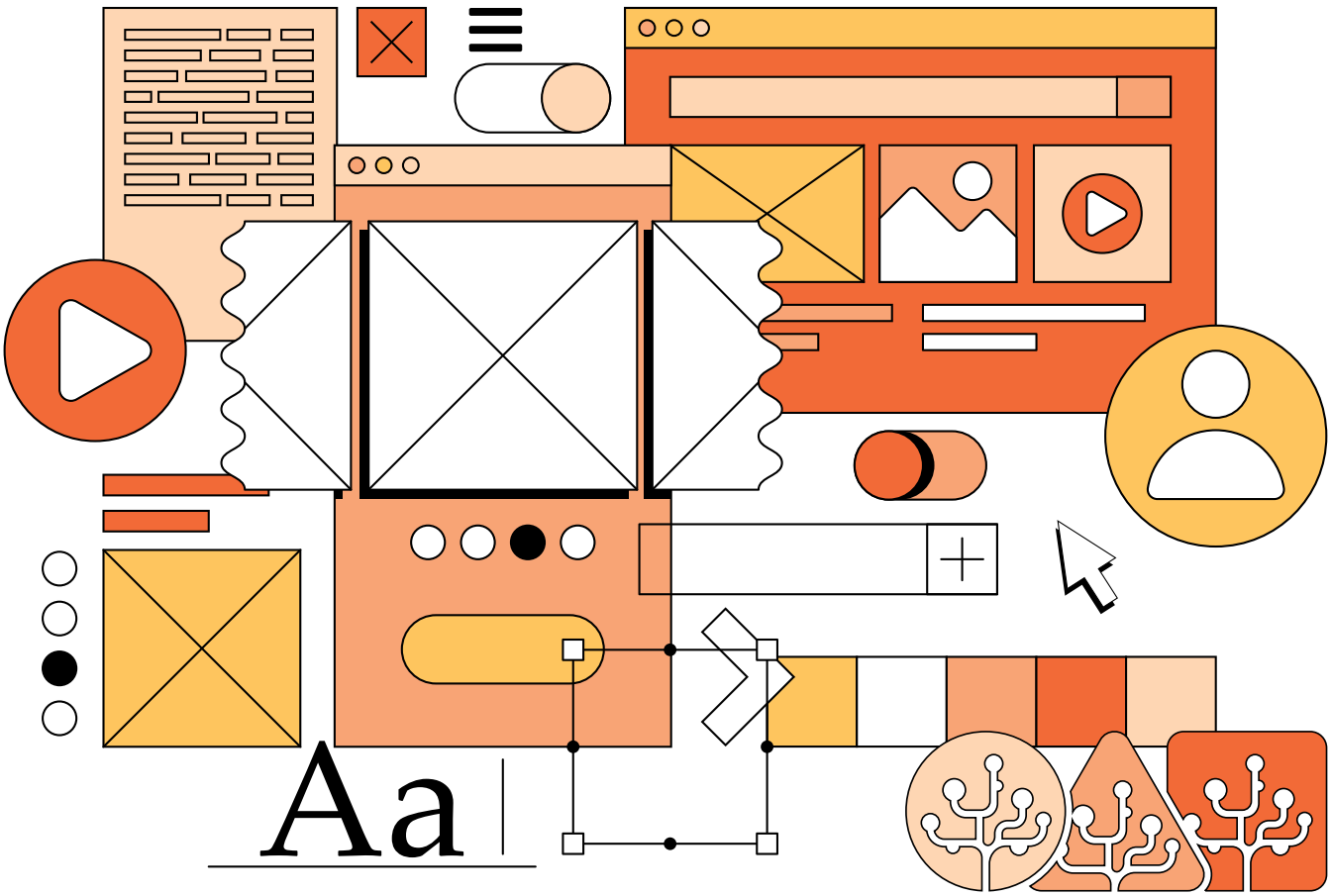

Georgia's Orchard Web Design System: Groomed for Good Harvest

GEORGIA TECHNOLOGY AUTHORITY

AWARD CATEGORY: Information Communications Technology Innovations

STATE: Georgia

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EXECUTIVE SUMMARY

Walking the rows of a peach orchard in middle Georgia, you come across a lone tall pine. It towers over the rest and seems to shout, "I'm not from around here." Leaves you wondering.

Same with state government websites. When you hit one that doesn't share the family resemblance, it shakes your confidence. Not just in the validity of that website, but in the government services or information you're after.

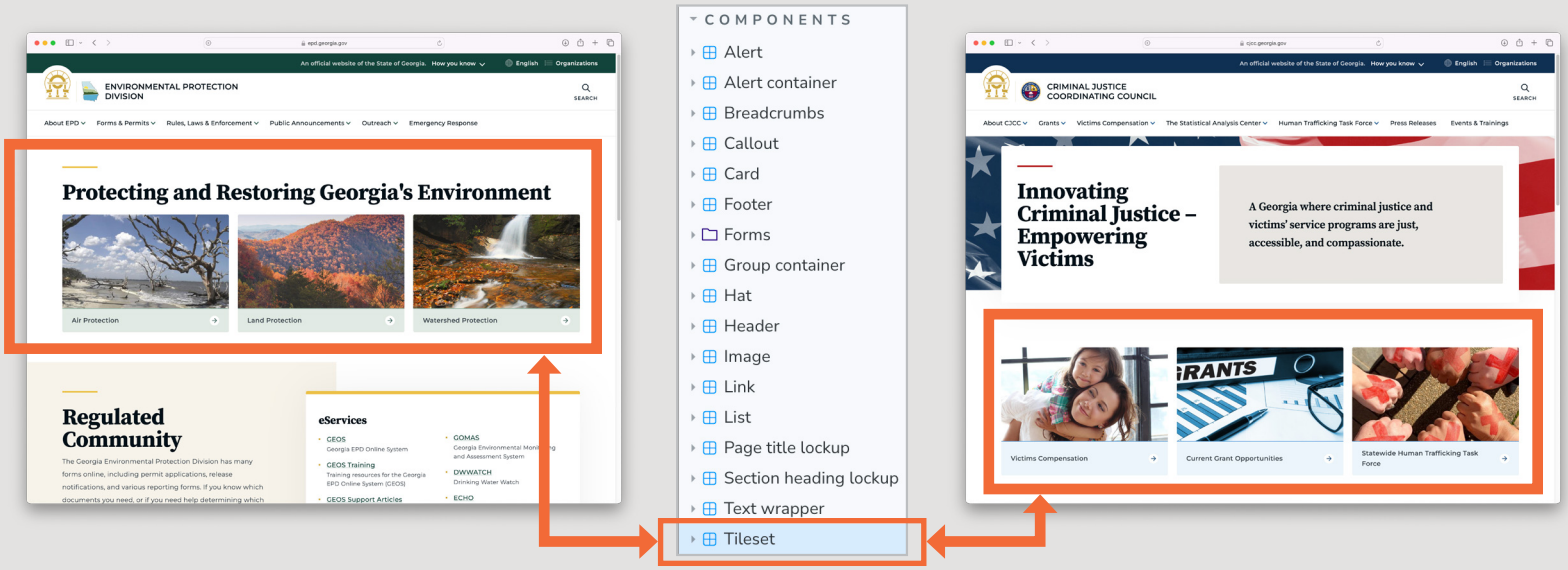
That's why the Georgia Technology Authority (GTA) created Orchard, (https://digital.georgia.gov/services/orchard-design-system) the state's comprehensive web design system. Georgia recognized a need for continuity across its 100-plus state government websites and web applications. Continuity that enhances the user experience for its citizens – the people served. They're not big on agency names and logos. It's services they're after, and a consistent experience across varied agencies' websites improves service delivery. With Orchard, that consistency is built in.

Devised and implemented by GTA's Digital Services and Solutions team, the web design system is much more than a style guide or a set of templates. It's a collection of reusable components, accompanied by clear standards for their use. Components can be assembled to build a variety of applications, always preserving a consistent look and feel. Orchard serves as a single source of truth for web design. It promotes web accessibility and consistency, it accelerates web development, and it enhances collaboration among development teams across agencies. All that together builds credibility for government entities and fosters trust among constituents.

Orchard is compliant with the WCAG 2.1 AA international standard for web accessibility. Adopting the design system automatically makes front-end code and design accessible. Accessibility ensures all citizens, including those with disabilities, can access and benefit from state services.

Orchard underscores Georgia's commitment to digital maturity. The web design system is foundational to the state's efforts to improve government's digital services. It's a true expression of the counsel, **"Do the right thing, and do the *thing* right."** And at a time when government looks to harness emerging technologies like artificial intelligence, Orchard helps lay the groundwork for a bountiful harvest.

Reusable components in Orchard promote a consistent look across agency websites.



Accessibility is not just the law. It benefits *all* website users. And it's built into Orchard.

IDEA

WHAT PROBLEM OR OPPORTUNITY DOES THE PROJECT ADDRESS?

Georgia, like other states, delivers a smorgasbord of information and services online, from tax filing and vehicle registration renewals to health services and voting information. The interactions between a state government and its constituents are broad and complex. Add to that constituents' higher expectations for seamless, accessible online experiences, and implementation of a cohesive web design system becomes not just beneficial but necessary.

A web design system, at its core, is a collection of reusable components and standards intended to guide the design and development of digital products. For state governments, adopting such a system isn't just about aesthetic consistency. It represents a strategic approach to enhancing digital governance, fostering accessibility, and ultimately, improving the constituent experience and trust in government service delivery. With the implementation of Orchard, the Georgia Technology Authority systematized web design to help the enterprise provide consistency and better user experience for its constituents.

WHY DOES IT MATTER?

A well-implemented web design system ensures a valuable kind of predictability. For constituents, it means every digital interaction provides a consistent experience. Whether it's on a mobile app, a website or an online portal, the look, feel, and function remain uniform. This consistency builds trust and confidence in government digital services. It limits confusion, reduces the level of work asked of users, and makes navigation intuitive across different platforms and services. Orchard delivers those benefits, plus enhanced accessibility and inclusivity. Accessibility is a legal and moral imperative for state governments. A design system embeds accessibility standards in every component, ensuring that digital services are usable for all constituents, including those with disabilities. That promotes more inclusive digital environments, catering to the needs of every individual, enhancing the overall user experience and ensuring compliance with legal standards.

Web design systems can produce significant cost avoidance. That's smart for any government entity committed to good stewardship. Financial implications of non-compliance with legal requirements of digital properties can be substantial, often far exceeding the investment needed for a design system.

The state of Georgia invested $300K in Orchard, which powers 90+ digital properties (websites plus online services) across 75 state agencies producing around 55 million annual page views.

Implementing a web design system can help steer websites away from pitfalls:

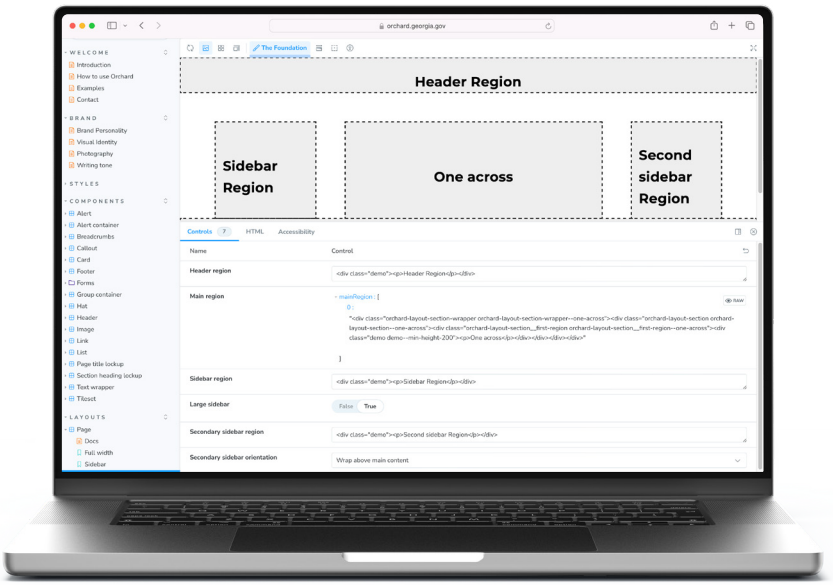
1. **Inconsistent User Experience (UX):** Without a design system, every state agency may develop digital assets independently, leading to inconsistencies in the user experience. This can confuse citizens and reduce the overall usability and trust.
2. **Increased Development Time and Costs:** State agencies risk reinventing the wheel by creating their individual design solutions rather than capitalizing on existing components. This can slow the development process and increase the cost since more resources are required to design, develop, and test these independent solutions.
3. **Difficult Maintenance and Scalability:** A lack of a unified design system makes maintaining and updating digital properties more complex. As each team may have implemented different technologies and design patterns, making changes can be labor-intensive and prone to errors. This complexity also affects the scalability of applications, as integrating or scaling up features becomes more cumbersome.
4. **Lower Design and Code Quality:** Without standardized guidelines, the quality of design and code can vary significantly across agencies. This inconsistency can lead to a poorer overall product quality.
5. **Impacted Brand Identity:** Consistency is crucial for brand identity. Without a coherent design system, an organization's digital products might not effectively communicate the brand's intended message and values, potentially weakening brand recognition and trust.
6. **Legal Liability:** Under Title II of the Americans with Disabilities Act (ADA), "state and local governments' services, programs, and activities must conform with web accessibility standards and be accessible to people with disabilities."

WHAT MAKES IT DIFFERENT?

The Orchard design system is built to solve real problems - both for state agencies and for Georgians trying to access state services.

When constituents interact with government, trust is crucial. Oftentimes, constituents are sharing personal information or facing issues where time is of the essence. They want to know for sure that they are in the right place, dealing with legitimate government applications. A simple but powerful trust builder is consistent design, branding and overall functional experience as users move through their journey. If they start on a website which directs them to a transactional application, the application should be a continuation of the overall experience, rather than an entirely new interaction. Colors, fonts, writing tone, brand markers and functional experience should be consistent. The Orchard design system is built to ensure a consistent experience for end users, reducing barriers to trust and allowing smoother and faster completion of the task at hand.

State agencies may use in-house developers or vendor partners to develop custom transactional applications. Often, accessible, consistent front-end design is treated as a luxury rather than a requirement due to time and cost constraints. Many times developers are responsible for the front-end design, rather than user experience and design professionals. The result is a fractured user experience across the user journey. The Orchard design system is situated to bring design and user experience consistency to transactional applications without adding significant time or cost to the overall project development cycle. Orchard provides ready-to-use code snippets and cascading style sheets (sample at right) to ensure front-end elements are consistent with state design parameters, including digital accessibility requirements.



Orchard is one of the first state-level web design systems.

It goes beyond encouraging development teams to “view source” or try to emulate standard designs. It provides more than a style guide. It comprises ready-to-use approved assets for development teams to tap into for a polished and functional design without significant time or cost investments.

WHAT MAKES IT UNIVERSAL?

The Orchard digital design system’s systematized citizen experience aligns with NASCIO’s State CIO #1 priority: Digital Government/ Digital Services. Orchard also plays a crucial role in aligning with Section 508 of the Rehabilitation Act and the Web Content Accessibility Guidelines (WCAG) standards, both aimed at making digital content accessible to all users, including those with disabilities.

Orchard includes components that are designed with accessibility in mind from the outset. These components conform to WCAG standards, ensuring features like sufficient color contrast, keyboard navigability, and ARIA (Accessible Rich Internet Applications) labels are incorporated, making the digital environment usable for people with various disabilities.

Since Orchard provides a unified set of components and guidelines, the system ensures that accessibility practices are consistently applied across all digital products. This uniformity helps avoid the common problem of varied accessibility across different parts of a website or application, facilitating full compliance with Section 508 and WCAG across an organization’s digital presence. When accessibility standards evolve, updating a single component in the Orchard design system can propagate those changes across all digital properties that use the system. This centralized updating mechanism simplifies the process of maintaining compliance with current accessibility standards, such as those defined by WCAG 2.1 or upcoming 2.2 versions.

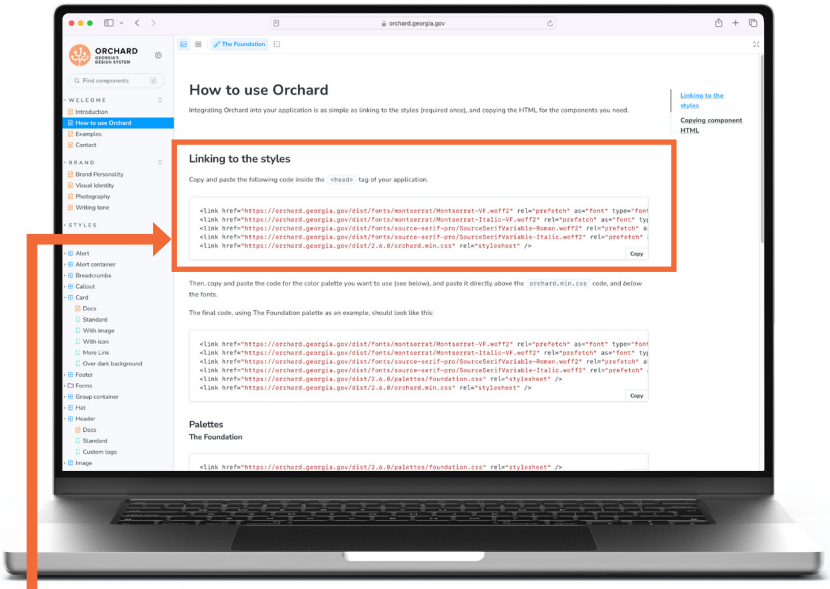
IMPLEMENTATION

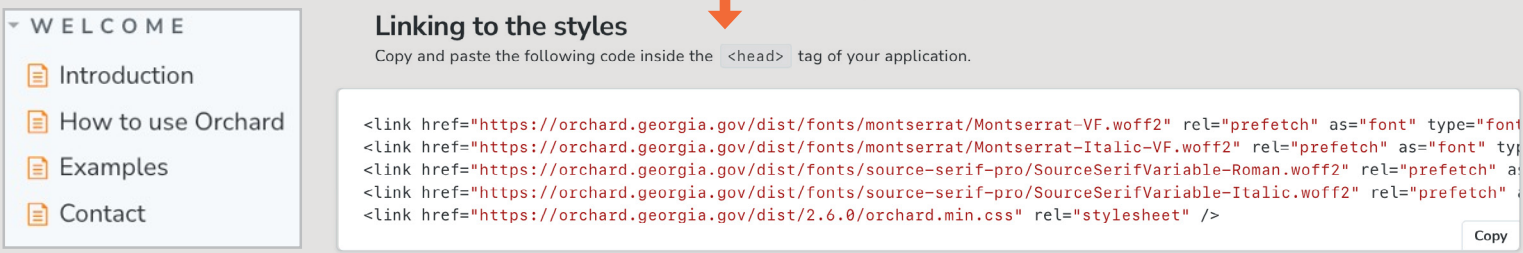
WHAT WAS THE ROADMAP?

The Orchard design system is available to all state agencies, with the aim of delivering consistent, usable, functional design elements for use in any of the state's digital products. The Georgia Technology Authority's Office of Digital Services & Solutions (DS&S) planned and built Orchard in parallel with a design refresh for websites housed on GovHub, the state's enterprise web content management system.

DS&S worked with long-time private-sector technical partner, Lullabot, to implement Orchard based on the updated design of GovHub websites. The team mapped out key components in GovHub which should be made available via Orchard.

Following an Agile approach, the team prioritized the components to develop a Minimum Viable Product (MVP) plan. The MVP included components in code but also included thorough usage guidance (like shown here) to help developers know when and how to use each component for optimal user experience.





Once the MVP features were complete, the team made Orchard available to state agencies and vendor partners. Development continues on Orchard as a living product. The team expects to continue to roll out more features and seek out feedback to help formulate a long-term product roadmap.

WHO WAS INVOLVED?

The State Chief Digital and AI Officer, who leads DS&S, advocated for adopting a web design system on strength of the efficiency and inclusivity it could facilitate. It could also promote accessibility and improve delivery of public services, both well aligned with broader digital transformation strategy. A range of contributors then created Georgia's Orchard web design system, collaborating on everything from initial concept to full implementation and maintenance.

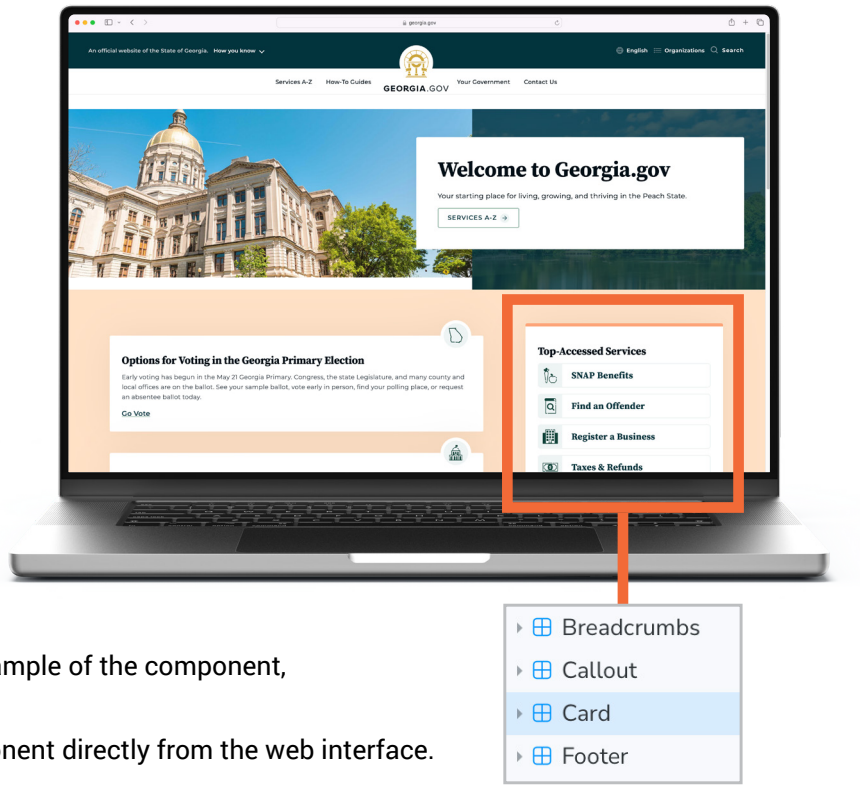
DS&S web designers, developers and UX/UI professionals designed and created the technical architecture of the system. External experts helped with branding, design systems, and accessibility standards. Collectively they ensured the system is scalable, accessible and meets the needs of various user groups. They established guidelines, created reusable components and documented best practices.

Digital content managers at state agencies provided practical insights into usability and functionality. As the primary users of state digital services, citizens were asked for feedback (gathered through surveys, focus groups, and public testing sessions) on usability. These groups provided feedback during the testing phase, helping identify user-centric refinements that were then made before the design system went live.

HOW DID YOU DO IT?

Orchard was a joint effort of numerous individuals and skill sets. Design strategists, production designers, technical architects and developers, user experience analysts, and a technical writer all contributed hundreds of hours of work to get to the beta launch.

Orchard is built using StoryBook, a widely used open-source tool for UI development. DS&S chose Storybook to demonstrate the Orchard patterns because of its ease of use and ubiquity in the space. It allowed the following:



- The ability to modify parameters directly from the web interface, allowing implementers to add their own data to the component.
- Easily show copy/paste HTML code for each component, complete with customized data. This allows implementers to integrate into whatever technology they use.
- In-context usage documentation along with a live example of the component, as in the example of a card shown here.
- Automated accessibility tests shown for each component directly from the web interface.

Orchard offers code in plain HTML/CSS/JS:

- The code to integrate is pure, native web languages, and hence technology- and framework-agnostic. This allows Orchard to be used in as many places as possible.

Orchard includes automated versioning:

- Orchard automatically generates a versioned, publicly available packaged release every time developers merge their code to the main branch. This allows developers to work without interruption and allows Orchard consumers to upgrade when they're ready, without fear of their existing code breaking.

Orchard uses modern CSS:

- Orchard leverages several modern cascading style sheets (CSS) features, such as Grid, Container Queries, and Logical Properties to help ensure components are attractive, flexible, and resilient in as wide a range of situations as possible.

Orchard components are accessible by default:

- Care has been taken to bake in accessibility to each component at the code level, and to describe any concerns or context relevant to that component's accessibility in the supporting documentation.

Orchard uses Renovate for automated dependency updates:

- Renovate reduces risk, improves code quality, and cuts technical debt while improving time to release by automatically ensuring all dependencies are kept up to date.

Orchard files are static CSS/JS/Fonts served from a Cloudfront CDN:

- This ensures fast delivery, low latency, and security. Cloudfront distributions automatically benefit from AWS Shield, which protects against network attacks to ensure availability.

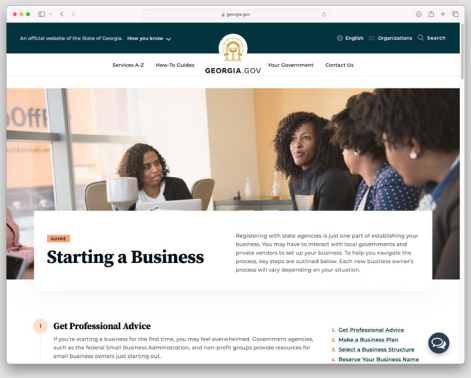
IMPACT

WHAT DID THE PROJECT MAKE BETTER?

Consider constituents who need to register a business in Georgia. They might interact with multiple state agencies, such as the Department of Revenue, Department of Labor, Secretary of State, and others that provide information on necessary permits or licenses. Without a consistent design, each website may appear as a separate entity, leading to a fragmented and frustrating user experience. This inconsistency can erode trust in state services.

Orchard addresses this issue by bringing consistency to the way information is presented and structured. Visual elements such as call-to-action buttons, lists, accordions, and page layouts are all driven from a single source of truth, ensuring a cohesive and mature digital presence across all agency websites. This seamless experience enhances the overall user experience and bolsters reliability of state services.

Consistency pays, especially when a service spans multiple websites.



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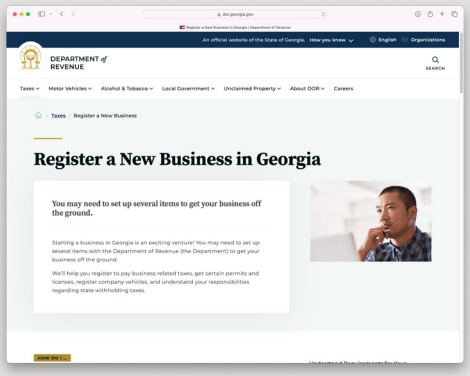
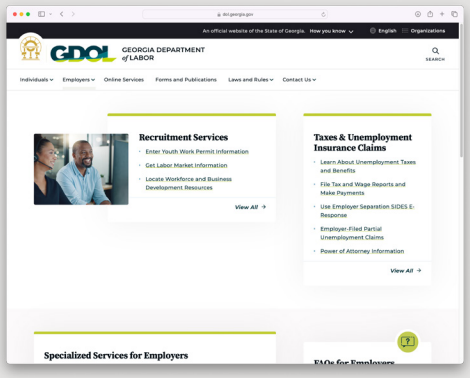


Georgia Department of Revenue



Georgia Department of Labor

Common elements like the state seal, parallel page layout, and like design elements allow citizens to quickly recognize they're on a state government website. That builds confidence. Plus, consistency means less work is required of them to learn to navigate the sites.

HOW DO YOU KNOW?

Orchard provides state agencies the features they need to ensure a consistent and accessible experience for Georgians at any stage in their user journey with state services.

Orchard brings brand and technology together for agencies to implement on websites, mobile apps, or web applications. From writing tone, image styles and font choices to CSS and HTML code snippets complete with ARIA labels and controls – Orchard makes it easier, faster, and less expensive for state agencies to develop custom applications.

Before Orchard, accessibility and brand consistency were too often secondary considerations. Either the development team didn't have the needed experience to implement completely, or the time/cost was out of reach for the agencies – accessibility and design were frequently "best effort" or "nice to have" considerations. Accessibility is the law. Consistent design is foundational to users' trust in state government. Both must be prioritized. Orchard offers agencies the means to do so without stretching development project timelines or ballooning costs.

WHAT NOW?

The Orchard design system is a living product, supported by a product manager and development resources. The team will continue to offer new components, focusing on those that improve design/UX consistency and accessibility in mobile or web applications. The product manager will draw input from application stakeholders across state agencies to plan the product roadmap for maximum impact.

Orchard has already proved well worth the initial investment. With the system now firmly rooted, the team can turn attention to growth and refinement, confident in the positive impact on digital service delivery. Orchard is bearing fruit for Georgia.