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**Response to Request for Quote**

Migrating and Re-Platforming Ben's Guide Website (Ben's Guide) – TECHNICAL

**Solicitation #: RFQ1751630 / 040ADV-25-R-0018**

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# Team Qualifications & Experience

**Team Canopy** (Prime: Canopy One Solutions Inc; Subcontractor 1: Stealth Solutions Inc; Subcontractor 2: Bravent LLC), led by Canopy One Solutions Inc., is proud to present a highly qualified, mission-aligned team with extensive experience delivering digital modernization solutions across federal, state, and commercial sectors. Canopy One Solutions is a CMMI Level 3 (Development & Services), ISO 9001, ISO 20000, and ISO 27001 certified, SBA 8(a) small business with over 15 years of experience providing enterprise IT services, secure cloud enablement, and application modernization support.

**Stealth Solutions Inc.,** an SBA-certified 8(a) small business, brings deep experience in delivering open-source CMS platforms, Acquia Cloud deployments, and accessibility-first redesigns for agencies including the Department of Commerce (NTIA), USAID, and the National Endowment for Democracy.

**Bravent LLC** contributes extensive experience in building and maintaining flagship federal platforms such as usaspending.gov, data.gov, and acquisition.gov, with core strengths in Drupal, DevSecOps, metadata-driven publishing, and high-availability cloud operations.

As a team, we have successfully delivered over 40 Drupal-based web solutions, migrating from legacy platforms such as Joomla, SharePoint, and static HTML. Our deployments support more than 1 million users, manage over 100,000+ content items, and integrate seamlessly with SSO, analytics, accessibility, and security APIs. We architect and operate solutions in FedRAMP-authorized cloud environments including AWS GovCloud and Azure Government, utilizing automated CI/CD pipelines and delivering to FISMA Moderate standards. Our team includes Drupal-certified developers, seasoned cloud architects, and UX specialists, capable of leading full lifecycle delivery—from requirements analysis and content migration to custom theming, accessibility audits, and long-term operations and maintenance. Together, Team Canopy offers a complementary and agile blend of technical capabilities, federal delivery maturity, and small business innovation—fully aligned with the GPO’s objectives for re-platforming Ben’s Guide. We have carefully reviewed the RFP documents, amendments, and Q&A responses and are fully committed to delivering a modern, secure, accessible, and sustainable solution that preserves the educational value and public mission of Ben’s Guide for years to come.

# ExECUTIVE SUMMARY

**Team Canopy** (Prime: Canopy One Solutions, Inc., a SBA-certified 8(a) minority-owned small business, Sub: Stealth Solutions Inc & Bravent LLC) proudly submits this proposal to the U.S. Government Publishing Office (GPO) in response to Solicitation No. 040ADV-25-R-0018 for the Migration and Re-Platforming of Ben’s Guide Website.

Team Canopy experience spans the full lifecycle of digital modernization — from legacy system migrations and secure hosting design to accessible UI/UX, interactive content redevelopment, and maintenance support. We bring to this project unmatched experience in Drupal CMS-based digital modernization, having successfully migrated 40+ legacy and static websites to Drupal from platforms such as Joomla, SharePoint, .NET, and HTML, and having executed 10+ federal Drupal implementations for agencies including GSA, NTIA, DOC, and USPTO. Our deployments support over 1 million+ daily users, process 100,000+ content nodes, and integrate 30+ external APIs including SSO, Cloudflare, and federal reporting databases. Our past projects have delivered 30%+ improvements in page load speeds, boosted traffic by double digits, and have trained over 250 federal staff in structured editorial workflows.

We understand the importance of Ben’s Guide in educating children and learners of all ages about the structure and function of the U.S. Government. Our solution embraces GPO’s mission by combining Drupal CMS expertise, FedRAMP-compliant cloud infrastructure, and user-centered design to modernize the site while preserving its educational charm and improving security, performance, and maintainability.

For Ben’s Guide, we offer a comprehensive solution built on:

* Secure, FedRAMP-authorized cloud hosting, deployed through CI/CD pipelines with automated scans.
* End-to-end Drupal 10 migration from Joomla, including modernization of interactive games via HTML5, ensuring WCAG 2.1 and Section 508 compliance.
* Fully decoupled, responsive user interface options that maintain the educational integrity of the current site while adding accessibility, analytics, and editor empowerment capabilities.
* Seamless Cloudflare coordination, domain cutover strategy, and DNS hardening for uptime and security continuity.

**Why Team Canopy?**

* Deep CMS Migration Expertise: 6+ platforms migrated to Drupal using structured Migrate API pipelines and schema-matching scripts.
* High-Performance Delivery: 90%+ improvements in page load speed via optimized caching, lazy loading, and CDN delivery.
* Federal-grade DevSecOps: Automated deployment pipelines using GitLab, Jenkins, and Terraform with rollback-ready releases.
* Risk-Aware Execution: Our approach includes early risk detection (e.g., game redevelopment feasibility), fallback plans, rollback scripts, and post-migration validation frameworks.
* Proven expertise in data and platform migration from legacy CMS platforms such as Joomla to modern Drupal frameworks.
* Drupal customization and architecture design, including multi-tiered, scalable hosting solutions that align with FISMA and FedRAMP Moderate compliance.
* Agile program and stakeholder management, ensuring continuous communication, adaptability, and on-time delivery.
* Secure application development and cloud operations, including integration with services like Cloudflare, MFA, and advanced security configurations.
* Hands-on user training and support, empowering GPO content creators to manage and expand content through structured workflows.

**Key Success Factors:**

Team Canopy brings the federal Drupal expertise, technical depth, and operational readiness required to modernize Ben’s Guide with confidence.

* Extensive Drupal Migration Experience: 40+ legacy websites—including Joomla, SharePoint, and static HTML—successfully migrated to Drupal using automated Migrate API pipelines and structured QA processes.
* FedRAMP-Compliant Cloud Hosting: Secure deployments across AWS GovCloud, Azure Government, or Acquia Cloud with FISMA Moderate controls, MFA, and 99.9%+ uptime SLAs.
* User-Centered, Accessible Design: Intuitive, responsive interfaces tailored for youth and adult learners—fully compliant with Section 508 and WCAG 2.1 standards.
* Game Modernization with HTML5: Redevelopment of legacy interactive games in HTML5 ensures cross-device compatibility and sustained educational impact.
* Structured Training & Transition Support: Hands-on training for GPO staff, supplemented with live sessions, documentation, and a 60-day post-launch hypercare window.
* Zero-Downtime DNS Cutover Expertise: Proven ability to execute secure Cloudflare and DNS transitions without disrupting traffic, analytics, or SEO.

**Key Risks & Mitigation Strategies**

We proactively address potential challenges to ensure smooth migration, secure operations, and uninterrupted educational access.

* Incomplete Content Migration: Mitigation: Pre-migration audits, use of Migrate API, and post-migration validation scripts to ensure data integrity.
* Incompatibility of Legacy Games: Mitigation: Early HTML5 rebuilds, fallback plan for existing versions, and user testing for functional parity.
* DNS or SSL Cutover Disruptions: Mitigation: Pre-coordination with GPO, staged cutovers, and live monitoring to avoid downtime.
* GPO Staff Readiness Post-Go-Live: Mitigation: Role-based training, sandbox environments, and ongoing knowledge transfer support.
* Module Vulnerabilities or Compliance Gaps: Mitigation: Use only vetted Drupal modules, enforce patch schedules, and conduct automated security scans.
* Delays in Approval or Asset Handoffs: Mitigation: Agile sprints, defined MVP scope, and parallel workstreams to maintain project velocity.

Our team of Drupal developers, architects, project managers, and user experience specialists will partner with GPO to deliver a seamless migration, an enhanced user experience, and a platform ready for long-term sustainability and innovation. We look forward to supporting GPO’s strategic goals and preserving the legacy of Ben’s Guide as a trusted educational resource for generations to come.

# Understanding of Requirements

Team Canopy recognizes that the U.S. Government Publishing Office (GPO) seeks more than a simple content migration for the Ben’s Guide to the U.S. Government website. This effort reflects a strategic modernization initiative—aimed at enhancing user engagement, improving information accessibility, upgrading the platform’s technical backbone, and maintaining strict adherence to federal security, accessibility, and hosting standards.

Ben’s Guide has served for over two decades as a critical learning resource for educating students and the general public about the structure and functions of the U.S. Government. As a result, the modernization effort must balance educational continuity with platform innovation—ensuring that its unique, child-friendly visual style and interactive tools are preserved while re-engineering the backend to align with modern web development best practices and GPO’s IT security posture.

We understand the following key priorities and challenges for GPO:

* Re-platforming from Joomla to Drupal: GPO seeks to migrate Ben’s Guide to the latest Drupal CMS, hosted on a secure, three-tiered (dev, test, production) cloud infrastructure that is FedRAMP Moderate-compliant. This ensures scalability, security, and long-term supportability.
* Full Content and Interactive Asset Migration: The solution must migrate all content, including multimedia assets and two key educational games—“Place the States” and “Branch-O-Mania”—while preserving the visual identity and navigation flow of the original site.
* User-Centered Design: The website serves diverse audiences—children aged 5–13, teens and adult learners, educators and parents, and the general public. Each of these audiences requires an experience tailored to their technical literacy and educational needs. The new platform must offer accessible, responsive design across all devices and browsers.
* Governance, Security & Administration: The Drupal platform must include user role-based access control, IP restriction, multifactor authentication, and audit logging, in alignment with GPO IT policies. Additionally, GPO’s Web Content Management (WCM) team must be able to manage content autonomously through training and guided documentation.
* Game Migration and Accessibility: Existing JavaScript-based games, including “Place the States” and “Branch-O-Mania,” will be assessed for migration to ensure compatibility with modern devices and compliance with WCAG 2.1 AA and Section 508. If needed, games may be rebuilt using HTML5 or replaced with GPO-approved alternatives that retain their educational value.
* Training, Documentation, and IP Ownership: GPO requires full delivery of system architecture, operational documentation, and editable design files (.psd, .ai, etc.). GPO must retain complete ownership of all custom content, artwork, and code.
* Post-Go-Live Support: GPO expects transition support and initial sustainment services pending award of a separate maintenance contract. This includes monitoring, bug resolution, user support, and patch management.

# Technical Approach

Team Canopy’s technical approach is designed to deliver a secure, scalable, and user-centric modernization of the Ben’s Guide platform in full alignment with the U.S. Government Publishing Office’s objectives. Our strategy encompasses a comprehensive set of components—secure cloud hosting, FISMA-compliant infrastructure setup, robust IT security integration, seamless content and game migration from Joomla to Drupal, user experience enhancement across all learner levels, analytics integration, and ongoing maintenance and training. Each component is tailored to ensure continuity of service, accessibility compliance, performance optimization, and sustainable knowledge transfer to GPO staff. By combining our expertise in Drupal CMS development, federal digital compliance, and cloud security, we provide a structured, phased approach that minimizes risk while maximizing long-term value. Our high-level approach diagram is depicted below in Figure 1:Bensguide Path to Drupal Migration:

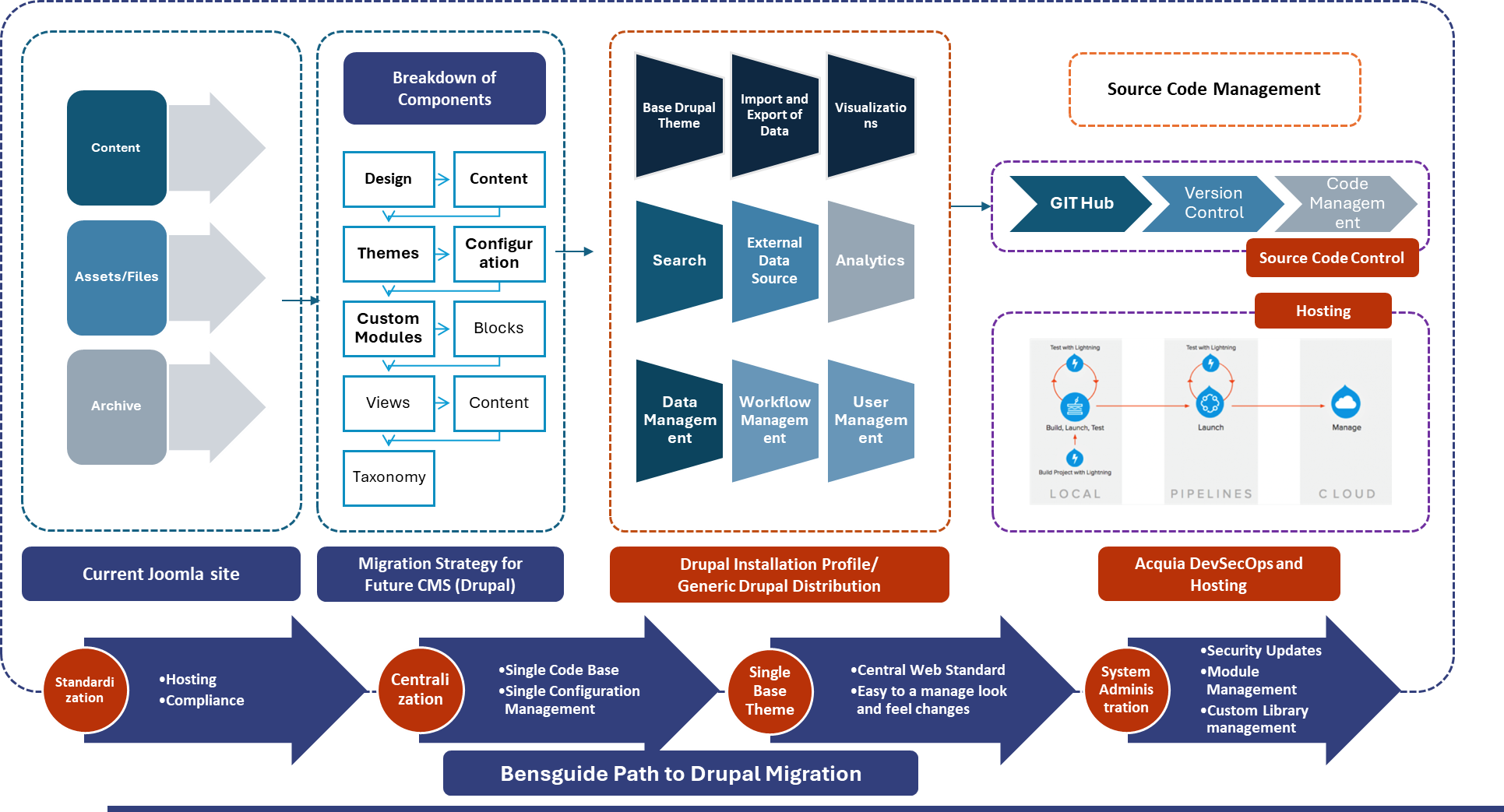


Figure 1:Ben’s Guide Path to Drupal Migration

The following sections detail our implementation across each major components.

### Environment Setup & Cloud Hosting

To deliver a secure, scalable, and maintainable platform for Ben’s Guide, Team Canopy will begin by evaluating and recommending a FedRAMP-authorized cloud hosting environment optimized for Drupal 10. In alignment with the RFP, the selected environment will support a three-tier architecture comprising Development, Testing, and Production environments. The platform will meet all FISMA Moderate compliance requirements, support penetration testing, integrate with GPO’s CDN solution, and enable streamlined deployment workflows.

We will evaluate three primary hosting options: AWS GovCloud, Microsoft Azure Government, and Acquia Cloud Platform for Government. Each platform offers FedRAMP Moderate authorization and is actively used across federal agencies. Though Acquia scores better for its native Drupal optimization and enterprise-grade features, we are open to the Government’s input on using Azure, AWS, or other FedRAMP-authorized hosting platforms. Our team is well-versed in all leading cloud environments and can successfully deploy and manage Drupal workloads across any of these options. To guide GPO’s decision, we will compare these platforms based on several key criteria: compatibility with Drupal’s LAMP stack, built-in DevSecOps support, Cloudflare integration capability, scalability and performance optimization tools, infrastructure-as-code readiness, support for CI/CD automation, centralized secrets and access control, and total cost of ownership. Our evaluation will also take into account GPO’s existing governance models, security requirements, and long-term sustainability goals.

Our team brings extensive experience deploying secure and compliant Drupal environments across each of these platforms. For the NTIA Web Modernization initiative, we migrated Drupal-based websites to a containerized, cloud-hosted platform on AWS GovCloud, delivering improved uptime, accessibility, and performance. In the Department of Commerce OCIO environment, we supported a centrally managed Drupal multisite solution using Azure Government, integrating SAML-based identity management and Agile DevSecOps processes. For projects hosted on Acquia Cloud, we have successfully delivered rapid-deployment Drupal platforms with built-in LAMP stack orchestration, automated patching, and 24/7 uptime monitoring ideal for high-visibility federal websites with minimal operational overhead.

Based on this evaluation, we will collaborate with GPO to select the most appropriate platform to support bensguide.gpo.gov, ensuring it aligns with performance targets, governance standards, and modernization objectives.

Once a hosting platform is selected, our team will implement a structured three-tier architecture to manage the development lifecycle with security and stability. The Development environment will support all configuration work, custom theme and module development, and local integration testing using containerized tooling for consistent parity. The Testing environment will reflect the production configuration and serve as the user acceptance testing (UAT) space for content validation, browser compatibility checks, and accessibility review in line with WCAG 2.1 AA standards. The Production environment will be hardened for performance, security, and reliability, including monitoring for uptime, scaling behavior, and compliance enforcement.

Each of these environments will be provisioned using Infrastructure as Code (IaC) tools such as Terraform and Ansible, enabling automated, version-controlled deployments with rollback capabilities. This structured isolation across tiers ensures changes are properly validated and controlled before reaching the live system, minimizing risk while accelerating delivery.

DevSecOps workflows will be tightly integrated with version control systems, allowing for CI/CD pipelines that handle automated testing, code linting, content validation, and deployment promotion. Our team has used these workflows extensively in previous federal engagements to ensure rapid, secure, and repeatable releases with minimal downtime. Operational practices will include secure secrets management using tools like AWS Secrets Manager or Azure Key Vault, daily automated backups, disaster recovery protocols, and centralized log management to support auditability and proactive monitoring.

As illustrated in Figure 2: Suggested Hosting Infrastructure for Ben's Guide, the Acquia Cloud Platform provides a full suite of automation, orchestration, and operational services that directly align with these requirements. The platform includes tools for deployments, backups, vulnerability scanning, performance tuning, and environment setup, as well as orchestration features like access control, resource coordination, and package management. It supports a pre-configured LAMP stack optimized for Drupal and delivers fully managed services for uptime monitoring, DDoS protection, patching, and disaster recovery. These capabilities make Acquia an ideal candidate for delivering a FedRAMP Moderate-compliant, secure, and enterprise-ready hosting foundation for Ben’s Guide.

Through this structured and platform-agnostic approach, Team Canopy will deliver a scalable, compliant, and future-ready hosting foundation for Ben’s Guide that aligns with GPO’s infrastructure and modernization goals.



Figure 2: Suggested Hosting Infrastructure for Ben's Guide

### IT Security Compliance & Integration

**Section I: Build-Time Security and Hosting Architecture**

**FedRAMP-Moderate Hosting Foundation**

Our infrastructure strategy for Ben’s Guide begins with deploying the platform within a FedRAMP-authorized cloud environment such as AWS GovCloud, Microsoft Azure Government, or Acquia Cloud for Government. The final selection will be made in coordination with GPO to meet specific governance and technical requirements. Each of these environments is fully capable of supporting the FISMA Moderate security baseline, providing encrypted storage, secure networking, access control frameworks, and detailed audit logging. We have deep expertise in delivering Drupal platforms on all three environments. For instance, we architected NTIA.gov using AWS GovCloud with full network segmentation and hardened service configurations. Likewise, for the DOC OCIO program, we established a secure, scalable Azure-based multisite Drupal environment, tightly integrated with Azure DevOps and SAML-based identity systems. The Ben’s Guide environments for Development, Testing, and Production will be provisioned and managed using Infrastructure as Code (IaC) tools such as Terraform and Ansible to ensure consistent, auditable, and policy-compliant deployments from day one.

**Cloudflare Integration**

To augment infrastructure-level security, the application will be integrated with GPO’s existing Cloudflare configuration. This integration will deliver origin shielding and TLS 1.3 encryption between the content delivery edge and the hosting environment, ensuring that backend infrastructure is protected from direct access. Cloudflare’s Web Application Firewall (WAF) will be configured to filter common attack vectors such as SQL injection and cross-site scripting based on OWASP Top Ten threat classifications. Cloudflare also provides distributed DDoS protection that absorbs volumetric traffic surges before they impact performance, while CDN caching ensures secure, high-speed delivery of static assets and public-facing pages. Secure DNS routing and HTTP Strict Transport Security (HSTS) enforcement round out the protection profile, aligning with modern Zero Trust architecture principles. This integrated security stack proved effective during our GSA ECAS engagement, where multiple high-profile public sites including Acquisition.gov were protected using a similar layered defense.

**Application-Level Controls**

Security is woven into the application lifecycle through architectural isolation, access control, and automated testing. The three-tier environment structure will isolate development and testing activities from production, minimizing risk while supporting efficient DevSecOps workflows. Administrative access across all tiers will be governed by Role-Based Access Control (RBAC) integrated with Multi-Factor Authentication (MFA), and further protected by IP allowlisting to ensure that only authorized users from pre-approved networks can access critical systems. Secure development practices are embedded throughout our CI/CD pipeline, which uses GitLab CI or Jenkins to automate code validation. Static and dynamic security testing will be conducted using tools such as PHPStan, SonarQube, and Composer Audit. Unit and functional testing will be executed with PHPUnit and Behat, respectively. Our team previously implemented this approach on NTIA.gov and DOC Drupal platforms, ensuring that every release passed security and accessibility validations before deployment. Configuration management will be handled through Drupal’s built-in configuration management system with environment-specific overrides controlled using Configuration Split, supporting strict separation of roles, workflows, and debugging tools per environment.

**Section II: Post-Migration Security Operations**

**Continuous Security Monitoring & Compliance**

After launch, the platform will undergo regular security scans and compliance monitoring to ensure it remains resilient against evolving threats. We will integrate automated vulnerability scanners such as AWS Inspector or Azure Defender and schedule third-party penetration tests in coordination with GPO security staff. Patch management for Drupal core and contributed modules will follow a defined release cadence, with flexibility to prioritize emergency patches triggered by critical CVEs. Updates will be first validated in lower environments to confirm stability before production release. This framework was effectively used in our NTIA.gov deployment, where regular threat assessments and rapid response workflows helped preserve content, integrity and platform uptime.

**Logging, Auditing, and Forensic Readiness**

A thorough logging and audit framework will capture and retain all critical actions, including login attempts, role changes, content updates, and system deployments. Logs will be timestamped and stored in encrypted, centralized systems such as ELK Stack, AWS CloudWatch, or Azure Monitor, depending on the final hosting selection. These logs will be available to support GPO’s internal audit requirements and post-incident forensic reviews. Data will be protected using AES-256 encryption at rest and TLS 1.2 or higher in transit, while all access to sensitive systems and secrets will be controlled via AWS Secrets Manager or Azure Key Vault, providing policy-enforced access control and full audit trails.

**Backup and Disaster Recovery**

Our disaster recovery strategy ensures that Ben’s Guide remains operational and recoverable in the event of service interruptions or cyber incidents. We will implement daily, and incremental backups stored in geographically redundant locations, using automated snapshot tools and versioned storage to support rollback if needed. Recovery Point Objective (RPO) will be kept under 24 hours and Recovery Time Objective (RTO) under 2 hours. These targets were consistently met on our NTIA.gov program, where availability was a critical requirement for publishing time-sensitive broadband program information. Regular testing of recovery procedures and backup verification will be performed to ensure business continuity.

**Governance and Documentation**

Strong governance and documentation will be maintained throughout the project lifecycle. All changes, updates, and third-party module installations will pass through documented change control workflows with approval gates and rollback plans. A comprehensive System Security Plan (SSP), aligned with NIST 800-53 controls, will be developed and maintained in coordination with GPO. We will deliver a Security Operations Manual detailing operational roles, escalation procedures, and access policies, along with SOPs for content governance and administrative tasks. Post-launch, we will conduct knowledge transfer sessions to ensure GPO stakeholders are prepared to manage system operations, audit security logs, apply patches, and respond to incidents independently.

### Maintenance & Security Plan

Team Canopy is committed to supporting GPO beyond the successful deployment of the modernized Ben’s Guide platform. Our post-launch sustainment strategy ensures continuous stability, timely issue resolution, platform security, and proactive improvement aligned with evolving user needs and GPO’s operational goals. We offer a structured and transparent support model that blends real-time monitoring, responsive technical support, and continuous system hardening.

**Initial Stabilization and Hypercare Period**

Immediately after go-live, Team CanopyOne will initiate a 30- to 60-day hypercare phase. During this period, our team will:

* Monitor system health, traffic, and engagement
* Address post-launch issues and bug fixes
* Support GPO’s WCM team in workflow use and content cleanup
* Validate integration health (Cloudflare, Matomo, backups, and scans)
* Confirm SEO continuity, URL redirects, and accessibility compliance

This stabilization window will ensure operational continuity, optimize performance, and refine configurations based on early user feedback.

**Ongoing Application Support and Maintenance**

A dedicated team of Drupal-certified developers and DevOps engineers will provide full-spectrum maintenance, including:

* Composer-based updates for Drupal core, contributed modules, and custom code.
* Patch deployment for critical advisories within 24–48 hours.
* CMS issue resolution (UI bugs, content errors, workflow tuning).
* Accessibility testing and WCAG 2.1 AA remediation.
* Routine code audits to identify deprecated functions and bottlenecks.

All changes will follow a formal review, staging validation, and GPO approval process prior to production release, maintaining stability and compliance.

**Infrastructure and Server Management**

Team CanopyOne will manage system uptime and performance through:

* Cloud monitoring tools (e.g., AWS CloudWatch, Azure Monitor).
* System health checks and log analysis.
* CDN and WAF configuration management via Cloudflare.
* Daily full and hourly incremental backups with verification routines.

Backups will be securely encrypted (AES-256), geo-redundant, and versioned to allow rollback to specific points in time. We will conduct regular disaster recovery drills to validate RTO (<2 hours) and RPO (<24 hours) goals.

This mirrors our NTIA.gov project, where we implemented automated backup testing and disaster-ready recovery using AWS and Route 53 infrastructure.

**Content and Feature Enhancements**

To support evolving user and stakeholder needs, Team CanopyOne will provide enhancement capacity, including:

* Development of new content types, layouts, and views.
* Custom module development for educational tools.
* Editorial support using Layout Builder and taxonomy tools.
* Integration of new features like gamified content or language support.

All enhancements will follow agile best practices and align with GPO’s roadmap priorities.

**SLA-Driven Help Desk and Ticketing**

We will implement a help desk portal (e.g., Jira Service Desk or Freshservice) with the following SLA tiers:

* Priority 1 (Critical): 2-hour response, 1-day resolution.
* Priority 2 (High): 4-hour response, 2-day resolution.
* Priority 3 (Normal): 1-day response, 3–5 day resolution.
* Priority 4 (Low): Scheduled in patch cycles.

Monthly reports will detail ticket metrics, uptime SLAs, patch deployment, and outstanding requests.

**Governance, Reviews, and Continuous Improvement**

To ensure sustained alignment, we will lead quarterly governance meetings with GPO to:

* Review incidents, SLAs, and feedback trends.
* Recommend enhancements based on analytics and usability.
* Reprioritize upcoming features and system goals.

These sessions will promote transparency, accountability, and platform growth.

**Backup, Recovery, and Resilience**

Ben’s Guide will be protected by a structured backup and disaster recovery framework:

* Daily full and hourly incremental encrypted backups
* Geo-redundant storage via Amazon S3 or Azure Blob Storage
* Routine test restores to validate backup integrity
* Versioning and rollback for configuration and content recovery
* Retention of backups: 7 days (dev), 30 days (production)

This strategy was successfully implemented in the NTIA project, enabling rapid recovery and high availability across public-facing platforms.

**Monitoring, Logging, and Alerting**

We will deploy full-stack observability using:

* Application Performance Monitoring (e.g., New Relic, Datadog).
* System metrics via CloudWatch or Azure Monitor.
* Audit logging of logins, deployments, content actions, and privilege changes.
* Real-time alerting via Slack, PagerDuty, or email.

Logs will support forensic analysis and compliance. Weekly summaries will provide transparency on performance and anomalies.

**Front-End and Server Performance Optimization**

To deliver fast load times:

* CSS, JS, and images will be minified, lazy-loaded, and served responsively.
* Fonts will be optimized for speed and accessibility.
* Lighthouse, WebPageTest, and GTmetrix will validate 85+ PageSpeed scores.

Server-side enhancements will include:

* Drupal page cache and Varnish or NGINX FastCGI for anonymous traffic.
* Redis or Memcached for dynamic data and config caching.
* Database tuning and query indexing for search-heavy content views.

**Data Privacy and Compliance**

All analytics implementations will:

* Avoid collection of personal data.
* Anonymize IP addresses.
* Use non-intrusive tracking.
* Comply with federal privacy standards.

GPO’s Privacy team will be consulted on cookie banners and data consent policies to ensure all analytics activities meet internal compliance requirements.

We will also work with GPO’s IT and Privacy teams to review consent language, configure cookie banners if necessary, and ensure all data collection activities are fully documented in alignment with internal compliance requirements. By combining Matomo’s deep behavioral insights with rigorous performance engineering and real-time monitoring, CanopyOne Solutions will ensure that Ben’s Guide is not only fast and responsive but also continuously optimized through actionable data. Our integrated analytics and performance stack will empower GPO to make evidence-based decisions that enhance both educational impact and user satisfaction.

### Content Migration

Team Canopy will implement a robust and user-friendly content management system (CMS) using **Drupal 10+**, designed to empower GPO’s Web Content Management (WCM) staff to manage, organize, and publish content efficiently while maintaining clear governance and quality assurance. Our strategy involves building structured content types, defining editorial workflows, and enabling seamless collaboration through role-based access and user interfaces optimized for both technical and non-technical users.

**A. Content Structure and Modeling**

To build a scalable, user-friendly, and editorially efficient platform for Ben’s Guide, Team Canopy will adopt a structured content modeling approach in Drupal 10. Drawing on our experience modernizing public education platforms such as NTIA.gov and Acquisition.gov, we will implement purpose-built content types that reflect Ben’s diverse formats including educational lessons, interactive games, quizzes, informational pages, and media downloads.

Each content type will be thoughtfully structured to meet the functional and editorial needs of GPO’s WCM team:

* Educational Topic: Includes Title, Body, Age Group, Subject Tags, Related Media, Author Attribution, and Related Games, enabling classification, searchability, and content continuity across learner age groups.
* Interactive Game: Supports Game Title, Game Type, Instructions, Age Range, and either Embedded HTML5 components or External URLs, facilitating seamless integration of updated “Place the States” and “Branch-O-Mania” games.
* Media Resource: Manages assets such as coloring sheets or worksheets with fields for File Upload, Description, Usage Context, and Audience, ensuring reuse and alignment with educational activities.

To facilitate content discovery and organization, we will define taxonomy vocabularies such as:

* Audience Segments: Kids 5 to 13, Teens 14+, Adults.
* Topic Categories: Civics, Branches of Government, Elections.
* Content Types: Games, Quizzes, Lessons, Downloads.

These vocabularies will support faceted navigation, dynamic content filtering, and related content displays across the site. Configuration will be executed via the Drupal Admin UI and exported using Drupal’s Configuration Management system, enabling version-controlled deployments. Support for Configuration Sync and Configuration Split will ensure consistent deployment across Development, Test, and Production environments.

This approach builds on our work for the NTIA.gov Web Modernization project, where we designed custom Drupal 10 content types for diverse digital formats, implemented taxonomy-based discovery, and achieved a 30 percent increase in user engagement post-launch. The same principles will guide the modernization of Ben’s Guide to ensure structured, accessible, and extensible content delivery.

**B. Editorial Workflow Design**

 To support GPO’s high standards for content accuracy, oversight, and timely publication, Team Canopy will implement a customized multi stage editorial workflow within Drupal. This workflow will be designed to streamline content creation and review while enforcing necessary governance, traceability, and access control. Our approach mirrors best practices successfully delivered in prior engagements such as the Acquisition.gov and NTIA.gov modernization projects, where we deployed complex editorial workflows to manage large volumes of public facing regulatory and educational content.

We will define tailored user roles and permissions aligned with GPO’s content governance model:

* Content Creators will draft and submit content without publishing rights, ensuring that material undergoes formal review.
* Editors will review, revise, and schedule content, providing an essential layer of quality assurance.
* Publishers will finalize content for publication and manage visibility or promotion settings.
* Administrators will oversee all content, system configuration, and user role assignments.

Content will move through a structured workflow using Drupal’s Workflow and Content Moderation modules. States will include Draft, In Review, Needs Revision, Published, and optionally Archived for deprecated content. This structure supports traceable, auditable transitions and includes automated notifications to reduce delays and maintain editorial momentum.

For day-to-day operations, editors will work within a Moderation Dashboard, offering centralized access to content by status, type, and author. Built in revision tracking will allow users to compare versions, view change histories, and restore previous iterations when needed, ensuring content integrity and transparency throughout the publishing lifecycle.

Access control will be tightly enforced using Drupal’s Roles and Permissions system and moderation policies, ensuring that each user can only perform actions appropriate to their responsibilities. This role-based transition enforcement was key to the editorial integrity of the Acquisition.gov platform, where we implemented Git like revision management and publishing control for federal legal content.

This editorial workflow framework ensures that Ben’s Guide content is consistently reviewed, approved, and published with precision, meeting GPO’s standards while supporting efficient team collaboration and long-term sustainability.

**C. Editorial Tools and Features**

To streamline content creation and empower nontechnical users, the platform will be equipped with a suite of modern editorial tools designed for efficiency, flexibility, and consistency. At the heart of the editing experience will be CKEditor 5, a robust WYSIWYG editor that allows content creators to easily format text, insert images and videos, and structure pages without needing to write HTML. This editor will be tightly integrated with Drupal’s Media Library, enabling centralized management of assets such as PDFs, images, and video files. Editors will be able to upload, tag, and reuse these media items throughout the site, ensuring consistent presentation and reducing duplication.

For interactive content, we will implement the Webform module, which provides a user-friendly interface for building quizzes, surveys, and feedback forms through a drag and drop interface with no coding required. To enhance operational efficiency, bulk operations will be enabled, allowing editors to update multiple pieces of content simultaneously such as adjusting taxonomy tags, publication statuses, or metadata values.

The system will also support scheduled publishing and unpublishing, making it easy to align content releases with specific dates like holidays, civic observances, or academic timelines. Additionally, editors will have the ability to preview content in responsive modes, ensuring that layouts and interactive elements display properly across desktops, tablets, and smartphones.

These editorial features collectively provide a seamless, user-friendly backend that empowers GPO’s content teams to maintain a high standard of quality and consistency across the Ben’s Guide platform.

**D. Content Governance and Metadata Strategy**

To ensure Ben’s Guide content is well structured, discoverable, and compliant with internal workflows and public facing standards, Team CanopyOne will implement a metadata driven governance model. Rich metadata will be embedded in each content item to support editorial workflows, search optimization, access control, and role-based visibility.

Custom metadata fields such as author attribution, publication dates, topic categorization, and audience segmentation (for example, Kids 5 to 13, Teens 14+, Adults) will be configured in each Drupal content type. These fields enable date-based sorting, related content display via taxonomy, and support for editorial review and archiving workflows.

For search engine optimization (SEO) and semantic clarity, we will use the Metatag module to auto generate HTML meta tags and embed Schema.org markup to enhance search engine understanding. Depending on content type complexity, semantic markup will be configured through Schema Metatag or custom Twig templates.

Pathauto will be used to create user friendly URLs based on titles and taxonomy (for example, /lessons/branches of government), while the Redirect module will preserve legacy URLs to prevent broken links and maintain public trust.

Role based access will be enforced using Drupal’s core permissions along with Content Access or Permissions by Term modules. This ensures only appropriate roles such as Content Creators or Reviewers can view drafts or unpublished content, while internal only content remains secure until publication.

Content nodes will also include tags like Civics, Games, or Colouring Sheets through taxonomy vocabularies, enabling dynamic displays and filtered views that support intuitive discovery based on age or interest.

Together, this metadata strategy transforms content into semantically rich, workflow aware digital assets, ensuring Ben’s Guide is organized, searchable, standards compliant, and user friendly for both editors and learners.

**E. Localization and Versioning Support**

Although Ben’s Guide is currently published in English, the platform will be architected with multilingual readiness from the outset, ensuring future scalability for a broader and more inclusive audience. Using Drupal’s Locale and Content Translation modules, we will enable the system to support language-specific content variants, allowing each node (e.g., lessons, games, media, or quizzes) to be translated and displayed in multiple languages. Editors will have access to a streamlined interface for managing these translations, with language fallbacks and side-by-side comparison tools to maintain accuracy and consistency across versions. Each translated version will remain fully integrated into the editorial workflow, meaning it will pass through the same review, approval, and publishing stages as its English counterpart.

To further support editorial oversight and compliance, we will implement comprehensive version control using Drupal’s built-in revisioning system. Every edit to a content item will automatically generate a new revision, allowing editors to view changes over time, compare versions, and revert to previous iterations if necessary. This ensures content integrity and supports iterative refinement without risk of permanent data loss. All edits will be accompanied by detailed change logs, which include timestamps, user attribution, and summaries of changes. These logs promote accountability and transparency, ensuring that all content updates are traceable and verifiable. This functionality is particularly valuable in educational contexts, where maintaining accurate, approved, and auditable content is essential. Together, these features will ensure that Ben’s Guide remains a flexible, future-ready platform capable of serving diverse user groups while supporting rigorous editorial and governance standards.

**F. Integration with External Content and Tools**

To enrich the educational experience and extend the value of Ben’s Guide, our platform will support seamless integration of external media and government resources while maintaining full accessibility compliance. Editors will be able to embed video content from trusted platforms such as YouTube and Vimeo directly into lesson pages, games, and activity modules. This will be facilitated through Drupal’s Media module, configured to support remote video embedding using Media Types with preview and metadata fields. Editors will simply paste a video URL, and the system will manage the embedding and display, enabling quick content enhancement without requiring custom code.

The platform will also allow editors to upload and tag educational documents such as colouring pages, worksheets, and printable activities. These documents, typically PDFs or images, will be managed through the Media Library with taxonomy tags and audience categorization to enable reuse and improve discoverability. Each document will be checked for accessibility compliance, including alt text for images, ARIA labels for interactive components, and PDF features such as logical reading order and tagged elements.

To promote civic literacy and support educational alignment with official sources, content will include curated links to external government platforms such as GovInfo, the Federal Depository Library Program (FDLP), and other civics education repositories. These links will be embedded using Drupal’s Link fields and can be styled with iconography and tooltips to clearly indicate their official nature and guide users intuitively.

Accessibility will be rigorously enforced throughout this integration. Embedded and uploaded media will undergo both automated and manual accessibility checks to ensure inclusion of alternative text, closed captions for videos, and semantic labelling where appropriate. Validation tools and editorial prompts within the CMS will support ongoing compliance, while content reviewers will verify accessibility during publication.

Altogether, this integration strategy enhances Ben’s Guide with rich, media-supported content that is educational, engaging, and inclusive. The platform will deliver a high-quality civic learning experience that aligns with GPO’s mission and meets federal accessibility standards

**G. Step-by-Step Migration Plan**

To ensure a seamless transition from the current Joomla platform to a secure, accessible, and scalable Drupal 10 environment, Team Canopy will follow a structured, phased migration approach, as illustrated in Figure Z. This strategy covers all critical areas including content migration, game integration, taxonomy mapping, metadata alignment, validation, and post-launch support, and is informed by our extensive experience modernizing government content platforms. The below figure provides a visual overview of this approach, showing the sequential steps that guide the project from discovery and architecture through automated migration, testing, user acceptance, and final launch. The process is designed to reduce risk, ensure data integrity, and deliver a fully validated and production-ready Drupal 10 platform that meets GPO’s operational and accessibility standards.

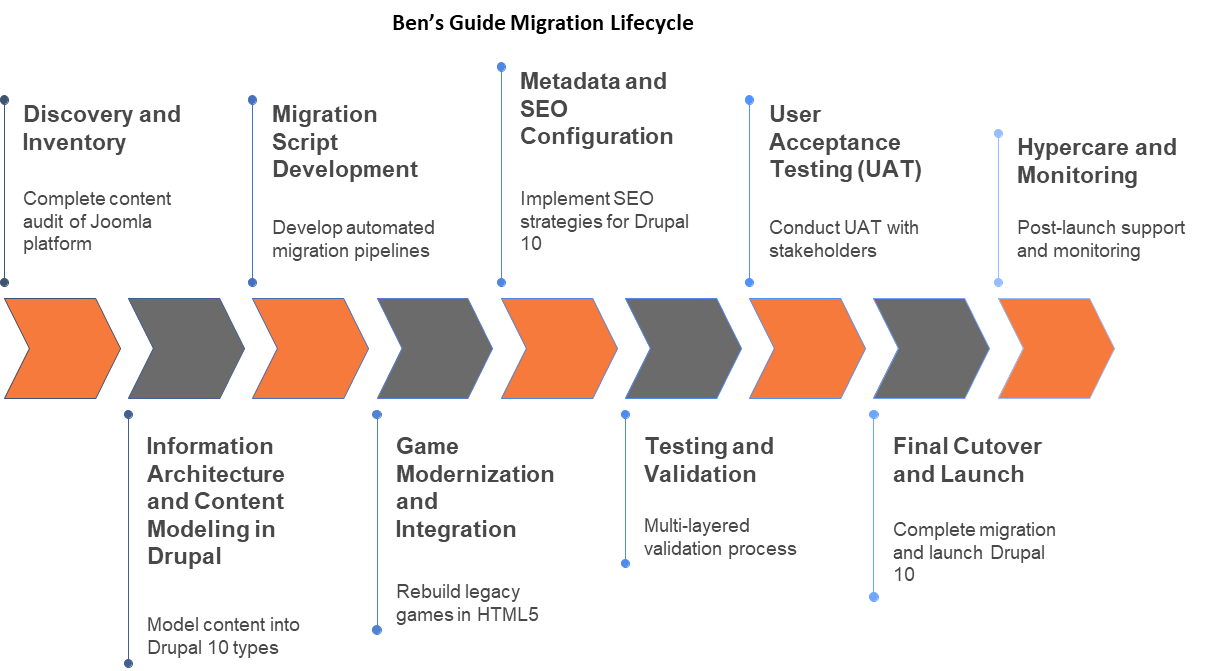


Figure 3: Ben's Guide Migration Lifecycle

**H. Post-Migration Validation**

Following the completion of content and game migration to Drupal 10, Team Canopy will perform comprehensive post-migration validation to ensure that all content has been accurately transferred, rendered properly, and functions as intended across supported devices and browsers. This validation will include:

* **Content Integrity Checks:** We will verify formatting, media associations, taxonomy tags, and internal linking to ensure migrated content is complete and logically structured.
* **Game Functionality Testing:** Modernized interactive games such as “Place the States” and “Branch-O-Mania” will be tested for responsiveness, input accuracy, load performance, and integration within Drupal content regions.
* **Accessibility Audits (WCAG 2.1/Section 508):** Our team will proactively scan key pages and components using industry-standard tools such as Axe and WAVE. This ensures that the platform is inclusive and can easily align with 508 requirements if prioritized in future phases.
* **Cross-Browser and Device Testing:** We will validate display and interaction consistency across Chrome, Firefox, Safari, and Edge, as well as mobile and tablet screen resolutions.
* **SEO and Metadata Validation:** Redirects from legacy URLs will be tested, metadata fields will be confirmed, and site maps will be regenerated to preserve search engine visibility post-launch.

This comprehensive post-migration process ensures that the modernized Ben’s Guide platform is stable, accessible, and optimized for users and administrators alike.

### Design & User Experience

Team Canopy places user-centered design at the heart of our modernization approach for Ben’s Guide. The front-end will be crafted to serve a diverse audience from early learners and teens to parents, educators, and internal GPO content teams, ensuring the platform is intuitive, accessible, visually rich, and educationally meaningful. We are committed to building an interface that resonates with each audience segment while being technically robust, Section 508-compliant, and optimized for both performance and maintainability across modern devices and browsers.

**Audience-Centered Design Implementation**

Our user experience (UX) strategy is guided by persona-based user stories and iterative testing. For children ages 5 to 13, the interface will focus on visual storytelling and gamification, featuring large interactive elements, animated prompts, and icon-based navigation. These elements will be combined into a dedicated “Kids Zone,” unifying the existing “Apprentice,” “Journeyperson,” and `“Games” sections. To maintain the current aesthetic, familiar characters and themes will be preserved or modernized using scalable vector graphics and interactive canvas elements, consistent with the Ben’s Guide migration plan.

For teens and adults, the interface will be more structured and content-driven, including hamburger menus, predictive search, breadcrumb trails, and tags. Users will have access to tools that support self-guided research, such as locating primary documents, evaluating content relevance, and creating learning paths. This approach reflects our work on the GSA ECAS for the General Services Administration (GSA), where we delivered structured navigation and advanced filtering within a complex regulatory content environment.

Parents, teachers, and other stakeholders will be able to access educational planning materials, downloadable quizzes, and policy content. A reorganized “About” section will present GPO’s mission and the educational goals of Ben’s Guide.

For GPO content creators and administrators, we will configure a Drupal back-end using the Claro theme and role-based dashboards that support bulk operations, editorial workflows, content previews, taxonomy management, media updates, and scheduling. These capabilities reflect our work on the Department of Commerce, Office of the Secretary, Office of Chief Information Officer – IT Operations and Maintenance (DOC OCIO) project, where we delivered customized Drupal interfaces and training to content teams across 12 sub-agencies.

**Responsive and Cross-Device Design Execution**

The site will be developed using responsive web design principles to ensure smooth functionality across smartphones, tablets, laptops, and desktops. We will implement Twig templating, Syntactically Awesome Style Sheets (SASS), and modern frameworks such as the United States Web Design System (USWDS) 2.0 and Bootstrap 5 to build consistent layouts and adaptive components. Visual assets, including illustrations and animations, will be optimized in Scalable Vector Graphics (SVG) and Web Picture (WebP) formats for high-resolution display and efficient loading.

Performance on low-bandwidth connections will be prioritized with a mobile-first layout approach, lazy loading of media, and deferred loading of non-critical JavaScript. Cross-browser and cross-device compatibility will be validated using BrowserStack and native device labs to ensure proper functionality across Chrome, Firefox, Safari, Microsoft Edge, Android, and iOS platforms. This approach reflects the practices successfully implemented on the NTIA.gov Web Modernization project, where we designed multilingual, mobile-responsive dashboards optimized for performance and accessibility.

**Visual Continuity, Accessibility, and Inclusivity**

The redesigned Ben’s Guide will maintain its educational and engaging tone. Using tools such as Adobe Illustrator and Figma, our design team will preserve or update visual themes, with all characters, backgrounds, and interface elements reviewed and approved by the U.S. Government Publishing Office (GPO). The design language will be friendly and vibrant, featuring bright colours and ample white space to reduce cognitive load for younger users.

Accessibility best practices will be embedded from the outset. The front-end will fully comply with Web Content Accessibility Guidelines (WCAG) 2.1 Level AA, incorporating semantic Hypertext Markup Language 5 (HTML5), Accessible Rich Internet Applications (ARIA) landmarks, and keyboard-accessible navigation. Compatibility with screen readers will be verified using NonVisual Desktop Access (NVDA) and Job Access with Speech (JAWS), and colour contrast compliance will be ensured using accessibility testing tools such as axe DevTools and the WAVE Web Accessibility Evaluation Tool. Text alternatives, transcripts, and captions will be provided for all media.

This comprehensive approach aligns with the work completed during the DOC OCIO project, where our team ensured all content met WCAG 2.1 AA standards and applied inclusive design across multiple agency websites.

**Modernization of Interactive Games and Activities**

Interactive games are a key component of Ben’s Guide, helping young learners grasp complex civic concepts in an engaging way. As part of the modernization effort, we will rebuild legacy games like “Branch-O-Mania” using Hypertext Markup Language 5 (HTML5) and JavaScript to replace outdated technologies like Flash and ensure compatibility across browsers and devices. The focus will be on both technical compliance and creating an immersive, educational experience. “Branch-O-Mania” will be reimplemented using modern JavaScript frameworks such as Vue.js or React for modularity, or plain JavaScript with reusable modules for lightweight deployment. Interactive animations will be built using GreenSock Animation Platform (GSAP) or Pixi.js to add transitions, drag-and-drop functionality, visual effects, and accessible sound design for auditory feedback. These libraries are widely used in educational games for their performance and browser support. “Place the States” will undergo a technical audit. If direct migration is not feasible, we will work with the U.S. Government Publishing Office (GPO) and educational advisors to rebuild it in HTML5 or source an equivalent game that achieves the same learning outcomes, such as understanding geography and civic structure.

All interactive components will meet Web Content Accessibility Guidelines (WCAG) 2.1 Level AA, supporting keyboard navigation, screen readers, proper color contrast, and alt text. Games will be tested across major devices and browsers, including Chrome, Firefox, Safari, Microsoft Edge, Android, and iOS platforms. To ensure maintainability, games will be packaged as Drupal-compatible components. These may be embedded directly into the content management system (CMS) using custom modules or integrated as decoupled components via inline frames or frontend application programming interfaces (APIs). This will allow GPO content editors to update or reuse game configurations through the Drupal backend. This strategy aligns with the Ben’s Guide migration plan, where rebuilding and modernizing “Branch-O-Mania” and “Place the States” were identified as essential to enhancing user engagement and educational value in a compliant, device-friendly format.

**Search, Navigation, and Discovery Features**

Helping users easily find and explore content is central to the success of Ben’s Guide. We will implement a user-friendly, educationally structured search and navigation system tailored to the needs of children, teens, adults, and educators. Depending on the U.S. Government Publishing Office’s (GPO) preference, this will be achieved using either Search.gov, a federally managed search application programming interface (API), or Apache Solr, integrated into Drupal through the Search API module.

If Search.gov is selected, we will configure it to index content from bensguide.gpo.gov via its public API. Metadata tagging in Drupal will follow Metatag and schema.org standards to optimize search visibility. For enhanced interactivity, we can develop a custom search interface in Drupal using JavaScript libraries such as React or Vue to support autosuggestions, real-time results, and keyword highlighting.

Alternatively, for deeper integration, Apache Solr will allow granular indexing of content types, fields (e.g., titles, tags, age groups), and faceted filtering by topic or audience. Solr will be enhanced with modules such as Search API Autocomplete and Search API Sorts to provide type-ahead suggestions and dynamic sorting.

Beyond the search engine, we will implement an intuitive navigation strategy. Hierarchical menus will reflect Ben’s taxonomy structure (e.g., age groups, topics, games), and breadcrumb trails will guide users through the site using modules like Easy Breadcrumb or Path Breadcrumbs. Each page will feature dynamically generated “related content” sections based on shared taxonomy tags to promote deeper exploration.

Faceted navigation blocks will appear on key landing pages, allowing filtering by criteria such as “For Kids 5–13” or “Civics.” These filters will be built using Views Exposed Filters or the Facets module. Additionally, keyword highlighting in search results will improve clarity and user confidence. This layered approach combining full-text search, faceted filtering, contextual content discovery, and intuitive navigation ensures users can engage with the site effectively across all devices. Our experience implementing similar features on the GSA ECAS project for the General Services Administration (GSA), including Solr-backed faceted search and clause filtering, demonstrates our ability to deliver advanced, accessible search and navigation for diverse audiences.

**Performance Optimization and CDN Integration**

To ensure fast load times, responsive user experiences, and reliable uptime, especially under variable traffic conditions, we will implement a multi-tiered performance optimization strategy that combines frontend asset management with global caching through Cloudflare’s Content Delivery Network (CDN).

Our frontend build pipeline will use tools such as Webpack and Gulp to compile, minify, and package all client-side assets. These tools automate key optimizations including Cascading Style Sheets (CSS) preprocessing from Syntactically Awesome Style Sheets (SCSS), image compression, and bundling of JavaScript and CSS files. Tree shaking will remove unused code, and components or images will be lazy loaded to improve performance on mobile devices.

Images will be optimized using modern web formats like Web Picture (WebP) and AV1 Image File Format (AVIF), offering high quality visuals at reduced file sizes. ImageMagick, Sharp, and Drupal’s Responsive Image module will generate and serve device-specific versions. JavaScript and CSS files will be fingerprinted with content hashes to enable long term caching with cache busting support.

Static assets including HTML, CSS, JavaScript, and media files will be delivered via Cloudflare’s global CDN network, which routes content through data centres closest to users. This setup reduces latency and ensures fast delivery of high traffic pages and game components while offloading bandwidth from the U.S. Government Publishing Office (GPO) infrastructure.

We will enhance this setup with caching rules, cache control headers, and smart purging. For example, content updates in Drupal can trigger Cache Tag invalidation or URL specific purges using Cloudflare’s application programming interface (API). Edge Caching and Always Online features will further ensure high availability even during maintenance or unexpected downtimes. To validate performance, we will monitor key metrics including First Contentful Paint (FCP), Time to Interactive (TTI), and Largest Contentful Paint (LCP) using Lighthouse, WebPageTest, and real user monitoring (RUM) tools such as New Relic and Cloudflare Insights. This will support continuous tuning of performance for all users.

This strategy reflects the performance optimization approach outlined in the Ben’s Guide migration plan and aligns with our past federal work, including the NTIA.gov Web Modernization project where we delivered responsive, high performing dashboards under real world usage conditions.

**Prototyping, Validation, and Iterative Design**

A user-centred design approach is critical to building a platform that effectively serves the diverse audiences of Ben’s Guide, particularly children, educators, and parents. We will follow an iterative prototyping methodology that places continuous feedback and validation at the centre of the development process to ensure the final product is intuitive, engaging, and aligned with the educational mission of the U.S. Government Publishing Office (GPO).

We will begin by creating low fidelity wireframes to outline the structure of key pages such as the homepage, content areas, quizzes, and games. These wireframes will define the layout and navigation without distractions like branding or colour. Once reviewed, we will produce high fidelity wireframes with typography, colour palettes, iconography, and imagery to present near final visual treatments for early validation.

To simulate real use and test interactivity, we will develop clickable prototypes using tools such as Figma or InVision. These prototypes will mimic navigation flows, hover effects, form behaviours, and game interactions, enabling us to demonstrate functionality without code. These tools also support remote collaboration, allowing stakeholders to give feedback directly on visual elements.

Throughout the process, we will conduct stakeholder walkthroughs with GPO and other invested teams to review evolving designs, refine hierarchy, and validate instructional flow and accessibility. We will also perform usability testing with representative user groups, including moderated sessions where users complete typical tasks like finding games or exploring content. Feedback will be gathered in real time to understand user behaviour and challenges.

With GPO’s coordination and approvals, we will conduct formal usability studies involving students, educators, and parents. These studies will assess user comprehension, navigation ease, cross-device responsiveness, and overall engagement. We will capture both qualitative insights from interviews and quantitative metrics such as task completion time and error rates.

Findings from all testing activities will be compiled into iteration reports and used to drive refinements before any feature proceeds to development. This cycle of prototyping, testing, and refinement ensures the platform meets user needs, reflects real world behaviour, and delivers accessible, high quality educational content consistent with GPO’s mission.

### Analytics Integration

**Web Analytics Implementation**

We will integrate the open-source Matomo Analytics platform into the Drupal site to provide a privacy-compliant and fully customizable analytics solution that aligns with federal data handling and privacy mandates. Matomo gives GPO complete data ownership and control, eliminating reliance on third-party tracking providers while delivering advanced analytic features, including:

* Page-level traffic metrics and heatmaps
* Visitor behaviour flows and engagement trends
* Device, browser, and screen resolution insights
* Search queries, referral sources, and download tracking
* Goal conversion tracking for defined actions such as quiz completions and video views

Matomo will be embedded directly into the Drupal front end and optimized to collect granular metrics without affecting page load times. It will support event-based tracking such as outbound link clicks, PDF downloads, and social shares to help GPO understand what types of content and formats are most engaging.

This approach is consistent with our work on the NTIA.gov Web Modernization project, where we successfully deployed Matomo within a FedRAMP-authorized cloud environment and integrated its API data into NTIA’s internal Power BI tools to support real-time dashboarding, site performance analysis, and user engagement insights.

**Custom Dashboarding and Reporting**

Team CanopyOne will configure Matomo dashboards tailored to GPO’s editorial and leadership needs. These dashboards will feature real-time analytics for high-traffic content, most accessed learning areas, time-on-page trends segmented by user category, and engagement breakdowns by device type.

Reports will be available in visual and exportable formats including CSV, Excel, and PDF. Automated report generation can be scheduled on a weekly or monthly basis, with ad hoc reporting capabilities enabled for authorized users.

GPO staff will be trained on how to use Matomo’s interface, generate insights, and interpret results to guide content strategy, evaluate site effectiveness, and support accessibility or user experience enhancements. We will provide user-friendly documentation to help GPO teams set goals, monitor KPIs, and continuously refine the site based on actual user behaviour.

### Documentation & Knowledge Transfer

Team Canopy will provide a comprehensive set of living documents and user manuals aligned with federal IT standards and tailored to GPO’s technology environment and governance model. These will include:

* User Guides for each persona (e.g., editor, admin, developer), detailing how to navigate the CMS, use editorial tools, apply workflows, and manage assets.
* System Architecture Documentation, including infrastructure diagrams, technology stack details, and cloud service dependencies.
* Configuration and Deployment Manuals, covering Drupal configuration splits, CI/CD integration, module and theme updates, environment synchronization, and security patching procedures
* Content Governance SOPs, outlining naming conventions, tagging standards, revision workflows, and publishing policies
* Backup and Recovery Procedures, explaining how to restore database and media snapshots, validate backup integrity, and respond to outages
* Maintenance Plans, listing scheduled updates, monitoring schedules, and escalation pathways

All documentation will be delivered in editable formats such as Word, Markdown, or Confluence, and stored in a shared repository accessible to the GPO team. Updates will be version-controlled and maintained throughout the engagement, with a post-launch copy provided for ongoing reference and internal onboarding needs.

This documentation strategy reflects our experience on the DOC Internal Office Modernization project, where we developed training guides tailored to editorial staff at over a dozen offices, delivered role-based publishing workflows, and maintained synchronized documentation throughout a Drupal multisite migration. Similarly, on the NTIA.gov Web Modernization project, we provided multilingual training and configuration guides, enabling the NTIA team to manage publishing workflows, translations, and dashboards independently using Git and the Drupal GUI.

**Post-Launch Support and Advisory**  
In addition to training, Team Canopy will remain available for post-launch support during the warranty or transition phase. We will provide real-time assistance for:

* Troubleshooting editorial workflows or content issues
* Responding to usability or accessibility questions
* Advising on patch application and module upgrades
* Supporting GPO during the first publishing cycle with confidence

All requests, tickets, and change inquiries will be logged and resolved within agreed service levels, ensuring GPO’s team transitions smoothly into full operational control.

Through this thoughtful training, documentation, and knowledge transfer plan, our team will ensure that GPO’s staff is not only equipped to maintain the Ben’s Guide platform, but also empowered to innovate, adapt, and scale it in the years to come. Our goal is to deliver a solution that is not only technically sound but also operationally sustainable and user centred.

### Ownership & Delivery of Artwork

Team Canopy fully acknowledges and supports the Government Publishing Office’s requirement that all existing and newly developed creative assets associated with the Ben’s Guide modernization project shall become the sole property of the GPO. Our approach ensures that all illustrations, icons, UI elements, graphical treatments, and any other design-related assets created during the course of this engagement will be delivered in both **original editable formats** (such as layered Adobe Photoshop (.PSD), Illustrator (.AI), or equivalent vector/source files) and in their respective optimized, production-ready versions (e.g., SVG, PNG, JPG).

We will maintain organized, version-controlled repositories of all graphical assets throughout the lifecycle of the project. At project closeout or earlier upon request, Team Canopy will provide a comprehensive archive containing all visual assets, categorized by type and usage context, along with metadata and usage notes where appropriate.

Furthermore, we affirm that Team Canopy will retain no ownership, licensing claims, or usage rights to these materials post-delivery. A formal Certificate of Ownership Transfer will be included with the final documentation package, explicitly confirming that GPO holds all intellectual property rights over the assets. If any third-party creative assets are proposed (e.g., stock illustrations or design libraries), Team Canopy will seek prior written approval from GPO and will ensure that such assets are either royalty-free or accompanied by licenses that grant perpetual, unrestricted use by the federal government without future cost or attribution requirements.

### Training & Configuration Management

**Role-Based, Hands-On Training**

We will deliver structured, role-specific training sessions targeting the unique responsibilities of GPO’s content creators, editors, publishers, administrators, and developers. These sessions will be conducted in a safe staging environment that mirrors the production site, using real templates, workflows, and content scenarios to ensure relevance and retention. Each training track will focus on the tools and workflows used by that group:

* WCM Staff will learn how to create and edit content using Paragraphs and Layout Builder, manage media via the Media Library, schedule and publish pages, apply taxonomy tags, and handle basic troubleshooting.
* Editors and Reviewers will be trained on using moderation queues, revision tracking, content approval workflows, and metadata structuring.
* Administrators will be guided on user account management, role assignment, permissions, configuration management, and basic theme adjustments.
* Developers and IT staff will be trained on Composer-based site management, module deployment, Git operations, CI/CD workflows, backup restoration, and log inspection.
* Each session will include practical exercises, checklists, and live walkthroughs, allowing participants to learn by doing. This ensures they are comfortable operating the system independently.

This mirrors our work on the DOC Internal Office Modernization project, where we developed training guides tailored to editorial staff across 12 offices and implemented role-based workflows using Drupal’s permission architecture. Similarly, during the NTIA Drupal Modernization project, we conducted role-based training for developers and content teams using a staging environment and CLI tools like Drush and Composer, enabling them to manage content and configurations autonomously.

**Empowerment Through Training and Documentation**

To ensure long-term success and editorial independence, Team Canopy will implement a comprehensive training and documentation program tailored to the needs of GPO’s content management team. Our approach begins with hands-on training sessions, delivered in a sandbox environment that mirrors the live site structure and uses realistic test content. These sessions will be customized for each key editorial role including content authors, reviewers, publishers, and site administrators, ensuring that each team member understands their specific permissions and responsibilities within the Drupal CMS. Each role-specific track will include targeted training modules delivered virtually or onsite based on GPO preference. Participants will engage in guided exercises covering the full content lifecycle: creating and editing content, managing assets in the Media Library, tagging content using taxonomy, applying editorial workflows, scheduling publications, and performing rollbacks using the revision history interface. We will incorporate knowledge checks at the end of each training module to confirm understanding and reinforce retention. These may include hands-on exercises, multiple-choice quizzes, or peer walkthroughs. A final “capstone” task will simulate a full content publishing cycle to validate operational readiness.

As part of our sustainability strategy, we will implement a Train-the-Trainer model. A select group of GPO staff will receive deeper training with expanded scenarios, documentation handoff sessions, and mentorship support. This group will be empowered to train new users and reinforce internal expertise post-transition. To complement the live training, we will produce a suite of step-by-step user guides and short video tutorials that provide clear, accessible instructions for commonly performed tasks. These resources will cover topics such as embedding videos, optimizing metadata for SEO, managing user roles, and using the moderation dashboard. All materials will be designed for ongoing reference, incorporating annotated screenshots, tooltips, and troubleshooting tips to ensure usability even by new or rotating staff.

**Post-Launch Support and Knowledge Continuity**

Post-launch, our team will remain available to provide continued support and mentorship, helping GPO staff transition smoothly from guided training to independent site management. We will hold follow-up Q&A sessions, offer real-time support during the initial weeks of live operation, and make ourselves available for knowledge reinforcement as new content types or features are introduced.

This layered support model ensures that GPO’s editorial team is not only equipped with the tools and knowledge to operate the platform effectively, but also empowered with the confidence to manage, grow, and evolve the Ben’s Guide site well into the future without reliance on external developers for routine operations.

**Drupal CMS Configuration and Extendibility**

To deliver a modern, scalable, and user-centred experience for Ben’s Guide, the project will be built on Drupal 10 core, configured to support both current content needs and future enhancements. Out of the box, the CMS will be extended with multilingual capabilities, laying the groundwork for future content translations to reach diverse audiences in multiple languages. We will ensure full WCAG 2.1 AA accessibility compliance across all themes, form elements, and navigation structures, so that the platform is inclusive and usable by individuals with varying abilities.

For content creation and editorial flexibility, we will implement Paragraphs and Layout Builder, empowering content authors to create dynamic, modular pages without developer intervention. These tools allow for drag-and-drop layout management while maintaining design consistency and accessibility.

To enhance search engine optimization (SEO) and ensure clean, semantic URLs, we will configure Views, Pathauto, Redirect, and Metatag modules. These will collectively enable structured content displays, automatic path generation based on content titles or taxonomy, smart redirection for legacy URLs, and metadata injection for improved discoverability across search engines.

Where the platform’s educational mission requires interactivity beyond Drupal’s core features, we will build custom modules to power interactive learning components and game logic. These modules will be developed following Drupal’s coding standards, ensuring high code quality, long-term maintainability, and compatibility with future Drupal updates.

Our practices are modelled after past work on GSA ECAS, where we implemented Git-based publishing workflows, editorial diff tracking, and rollback capabilities for regulatory content. We will apply similar version control, configuration export and import via YAML, and rollback strategies to meet GPO’s staging-to-production requirements.

**Knowledge Transfer and Sustainability:** Team CanopyOne follows a progressive knowledge transfer model, which begins early in the project lifecycle and continues through go-live and post-launch. During development, GPO developers will be invited to participate in code reviews, configuration sessions, and sprint demos. This embedded learning process ensures that internal staff understand not only how the system works, but why specific technical decisions were made.

As part of final handover, we will conduct:

* Train-the-trainer sessions so that GPO can scale internal onboarding
* Q&A office hours in the immediate post-launch period
* Recorded video tutorials for repeatable, on-demand training
* A transition readiness checklist to confirm all tools, credentials, access, and knowledge artifacts are in place.

### DNS & Domain Configuration

**Domain, SSL, and Federation with GPO Services:** To ensure seamless integration with GPO’s existing infrastructure and maintain a secure, authoritative web presence, Team Canopy will coordinate directly with GPO’s internal IT team for all DNS and domain-level configurations. The re-platformed Ben’s Guide site will be launched under the official domain bensguide.gpo.gov, with DNS records mapped according to GPO’s internal DNS zone management policies. This ensures compliance with organizational naming conventions and secure internal network protocols.

TLS/SSL certificates will be applied to the domain, either issued through GPO’s internal certificate authority (CA) or via a publicly trusted provider such as Let’s Encrypt, with automation and lifecycle management potentially handled through Cloudflare. This setup ensures encrypted, secure traffic and supports seamless certificate renewals with no service interruption.All DNS configurations will be coordinated with GPO to support high availability and secure resolution across all geographic regions. Where appropriate, DNS routing will be optimized to minimize latency and ensure performance consistency through Cloudflare’s DNS infrastructure or a similar CDN-backed solution, which supports DNS-level failover and redundancy.Should Ben’s Guide evolve to require personalized services or authenticated user access, the system will be pre-configured to support authentication federation protocols such as SAML and OpenID Connect. This enables future integration with GPO’s centralized Identity and Access Management (IAM) system without requiring disruptive architectural changes.

**DNS Coordination, Documentation, and Rollback Planning:** DNS cutover, record changes, and SSL provisioning will be thoroughly tested in advance using the staging and pre-production environments. We will work with GPO IT staff to validate DNS TTL values, propagation timelines, and endpoint verification processes. Final changes will be scheduled during approved maintenance windows to minimize user impact and avoid downtime.

All DNS-related updates will be documented in a dedicated DNS and Domain Configuration Guide. This documentation will include:

* Zone record mappings
* A/B endpoint routing procedures
* SSL certificate sources and renewal paths
* DNS failover steps and rollback strategies in case of unexpected issues
* Contact roles and approval workflows for DNS changes

During our NTIA Drupal Modernization Project, we successfully implemented DNS migration and SSL cutover for ntia.doc.gov and affiliated subdomains. We coordinated zone file updates and tested failover routing using Cloudflare and AWS Route 53 to ensure reliable cutover without service disruption. This proven approach will be applied to the transition of bensguide.gpo.gov, ensuring a secure, documented, and disruption-free launch.

### Migration Components

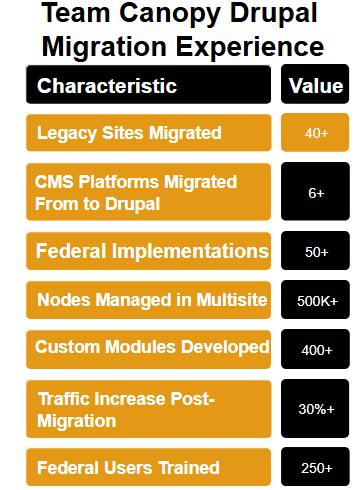
Team Canopy combines technical expertise with a user-centered approach to ensure a seamless migration and modernization of Ben’s Guide. The following table presents a structured mapping of the platform’s key components, detailing how each element will transition from the current Joomla environment to the new Drupal 10 architecture. This approach ensures that all content, interactive features, metadata, and administrative tools are securely migrated, enhanced for usability, and aligned with long-term sustainability goals. To further illustrate our readiness and experience, Figure 4: Team Canopy Drupal Migration Experiencehighlights Team Canopy’s proven track record in delivering large-scale Drupal migrations across federal environments.

Figure 4: Team Canopy Drupal Migration Experience

|  |  |  |  |
| --- | --- | --- | --- |
| **Feature/Component** | **Current (Joomla)** | **Target (Drupal 10)** | **Migration/Enhancement Strategy** |
| CMS Backend | Joomla CMS on internal server | Drupal 10 on FedRAMP-compliant 3-tier infra | Automated migration using Drupal Migrate API |
| Thematic Design & Aesthetic | Child-friendly, colorful, character-driven | Recreated exactly in Drupal theme | Custom theme using Twig + USWDS base |
| Interactive Game 1 | “Place the States” (legacy tech) | Updated or replaced HTML5 game | Rebuild using Phaser.js or similar HTML5 game engine |
| Interactive Game 2 | “Branch-O-Mania” (non-HTML5) | Converted to HTML5 | Re-coded in HTML5 and embedded as Drupal block |
| Kids' Learning Paths | “Apprentice”, “Journeyperson” | Consolidated “Kids” section | UX simplification, image-rich UCD-driven pages |
| High School Learner Area | Minimal | New content section | Structure added using Drupal Views and Taxonomy |
| Educator/Parent Section | Policy pages, support content | Enhanced with role-based content publishing tools | Workflow + role-permission-based editorial interface |
| General Public Content | About, Privacy, Contact | Retained and improved | Content type enhancement with layout builder |
| Admin Workflow | Joomla interface | Drupal editorial roles with moderation | Workbench moderation + Content roles (Author, Editor, Publisher) |
| User Authentication | Basic Joomla login | MFA + IP-restricted Drupal admin | Drupal Shield + SAML/LDAP optional integration |
| Search Functionality | Basic keyword search | Enhanced search using Search API + Facets | Drupal Solr or Search API setup |
| Analytics | Limited | Matomo integration | Drupal Matomo module with event tracking |
| Responsiveness | Partial mobile support | Full responsive design | USWDS-based theme, mobile-first layout |
| CDN/DNS Integration | Internal DNS only | .gpo.gov + Cloudflare + DNS compliance | Integrated via Drupal + DNS config |
| Artwork & Media Files | JPEGs and embedded images | Editable layered files handed to GPO | Provide .psd/.ai + exported formats |
| Training & Documentation | Not specified | Admin & Dev Guide, rollback, security, structure docs | Delivered as PDF + inline CMS help text |
| Accessibility Compliance | Unknown | Full WCAG 2.1 compliance | Manual and automated accessibility scan using Axe or WAVE |
| Online Quizzes | Joomla Quiz plugin | Drupal Quiz module | Rebuild quizzes using the Drupal Quiz module, maintaining question flow, scoring, and results tracking. Ensure accessibility and mobile responsiveness. |

# Migration Risk Mitigation and Rollback Strategy

To ensure the reliability and integrity of the migration process, Team Canopy will implement a proactive risk mitigation and rollback strategy that addresses potential failures in data migration, game integration, metadata configuration, and platform deployment.

Our approach is designed to maintain service continuity, protect content accuracy, and enable rapid recovery from unexpected issues.

**A. Migration Script Validation and Fail-Safes:** All migration scripts will be developed using the Drupal Migrate API and will undergo rigorous testing in Development and QA environments prior to production execution. We will conduct multiple dry runs using anonymized or representative data sets to verify mapping accuracy, field alignment, and relationship integrity. Validation scripts will check for content duplication, orphaned entities, and malformed metadata before final execution.

**B. Corrupted Data Handling and Backup Protocols:** To safeguard against data loss or corruption, we will implement snapshot-based backups of the source Joomla platform and the target Drupal 10 staging environment at each critical phase. These backups will allow us to restore pre-migration states quickly in case of partial failures or integrity errors. Additionally, the migration scripts will include checksum verification and logging to identify and isolate problematic records.

**C. Downtime Management and Cutover Strategy:**  To minimize end-user disruption during the final launch phase, we will schedule the production cutover during off-peak hours and implement a content freeze on the legacy system to prevent delta mismatches. A read-only mode will be enabled on the Joomla site prior to cutover, and CDN caching will be leveraged to reduce impact on the live user experience. If any critical issues are encountered during launch, a pre-tested rollback procedure will revert the site to the last known good state.

**D.Rollback Planning and Version Control:** All configurations, scripts, and content types will be version-controlled using Git and Drupal’s Configuration Management system. In case of failed deployments or misalignments, we can re-deploy stable versions and isolate deltas for correction. This version-aware strategy also supports the use of Configuration Split for environment-specific settings.

**Phased Approach with Milestones**

Our risk-aware migration approach is structured into five key phases, each with clearly defined activities, milestones, and validation checkpoints to ensure a successful and secure transition from Joomla to Drupal 10. This framework is illustrated in **Figure X: Phased Migration Lifecycle**.

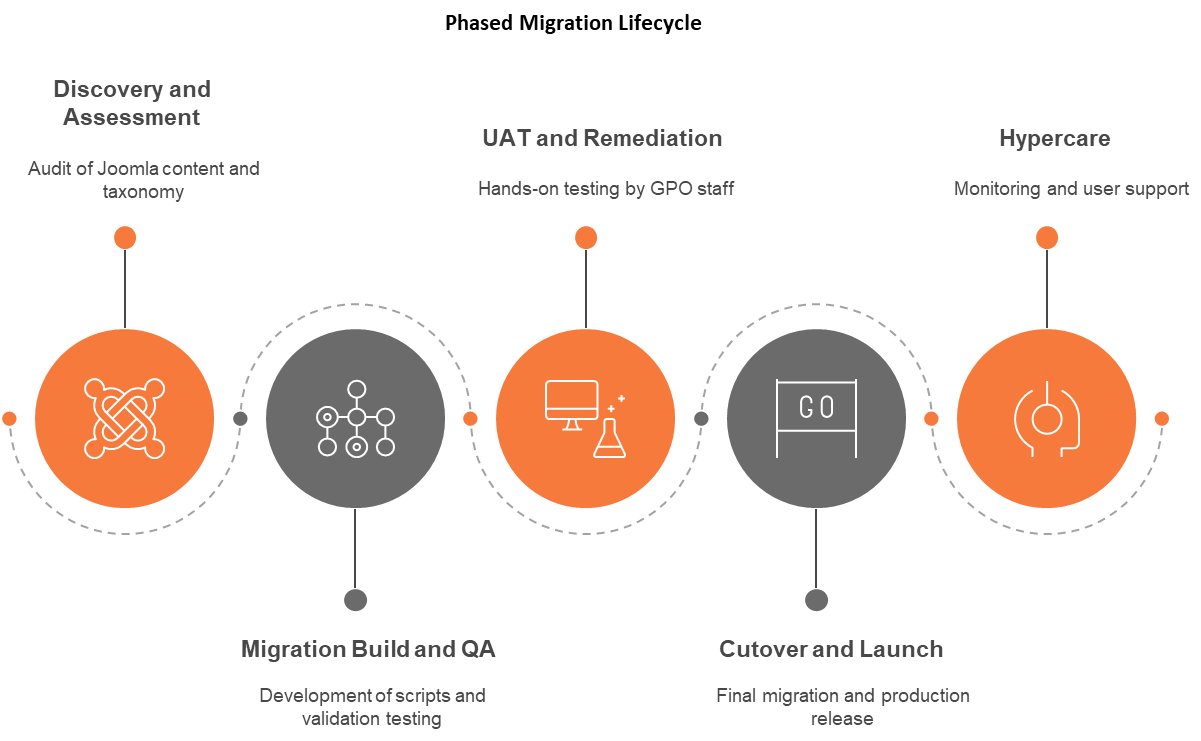


Figure 5: Phased Migration Approach

**A. Discovery and Assessment:** This initial phase involves a comprehensive audit of the existing Joomla platform, including content types, interactive games, media assets, taxonomies, and metadata structures. We will catalog existing URLs, identify legacy game technologies, and assess content dependencies. This phase sets the foundation for accurate modeling and future-proofed information architecture in Drupal 10.

**B. Migration Build and QA:** In this phase, we will develop automated migration scripts using Drupal’s Migrate API, Migrate Plus, and Migrate Tools. Scripts will be tested through iterative dry runs in a QA environment. We will validate field mappings, identify edge cases, and log errors to refine migration accuracy. Accessibility scans, metadata validation, and broken link checks will be performed to ensure content fidelity and compliance.

**C. User Acceptance Testing (UAT) and Remediation:** GPO staff will participate in structured UAT cycles to verify editorial workflows, user roles, game functionality, and overall usability of the Drupal platform. Real-world content editing, publishing, and taxonomy tagging scenarios will be tested. Any identified issues will be tracked, resolved, and revalidated before cutover approval.

**D. Cutover and Launch:**  Once UAT is complete and approved, we will initiate the final cutover process. A content freeze will be enacted on the legacy system, followed by a delta migration of any new or modified content. DNS changes will be executed to redirect traffic to the new Drupal environment, and final launch validations will be performed. CDN caching and rollback procedures will be on standby in case of unexpected issues.

**E. Hypercare:** During the post-launch hypercare period, our team will actively monitor the platform for performance, accessibility, and editorial issues. We will provide rapid-response support to GPO staff, resolve any post-launch bugs, and assist with user questions and minor configuration changes as needed. Each phase is designed with built-in go/no-go checkpoints, readiness reviews, and rollback plans to ensure quality and mitigate risk. Regular collaboration with GPO at each milestone guarantees transparency, confidence, and shared ownership of the migration process. This structured migration lifecycle enables controlled execution, stakeholder alignment, and long-term operational resilience.

# Past Performance Summary

**Our client references have submitted the PPQs. Below is a short summary of our Past Performances.**

**Experience 1 – Canopy One Solutions Inc**

|  |  |
| --- | --- |
| Project Name | Website Design, Development, and Maintenance Support |
| Client Name | Agribusiness Academy |
| Contract# | AASOW01 |
| Period of Performance | Feb 2022 – Dec 2026 |
| Client Point of Contact, Email and Phone number | **Vijayender Nalla** vijayender@agribusiness.academy,  +1(571) 484 3680 |
| **Description of the Project:** Canopy One Solutions partnered with Agribusiness.Academy, a global agri-food learning platform, to design and modernize their public-facing website using the Drupal CMS. We delivered a responsive, content-rich site with role-based access, scalable performance, and integrated analytics. Our team managed the full lifecycle—from requirements gathering and UX design to theme customization, content migration from a Joomla CMS, and deployment to a secure cloud environment optimized for SEO and user engagement.  Post-launch, we continue to provide comprehensive support, including CMS updates, module patching, content publishing, and security maintenance. Our structured CI/CD processes, staging environments, and editorial workflows ensure consistent performance and adaptability. This engagement highlights our capability to deliver scalable, accessible Drupal solutions with long-term maintainability—skills directly aligned with the objectives of the Ben’s Guide modernization. | |

**Experience 2 – Stealth Solutions Inc**

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| --- | --- |
| Project Name | Web Development Services for Department of Commerce |
| Client Name | National Telecommunications and Information Administration (NTIA) |
| Contract# | 1331L522F13350379 |
| Period of Performance | 09/01/2022 – 08/31/2027 |
| Client Point of Contact, Email and Phone number | William Severe, wsevere@ntia.gov  202-482-5965 |
| **Description of the Project:** Stealth provides comprehensive web development, and support services for NTIA’s public web properties, including NTIA.gov, Broadband USA, BTOP, the Federal Spectrum Compendium, and ITS.  Stealth’s work includes strategic governance, establishing technical standards, and migrating NTIA websites to Acquia Cloud for enhanced scalability, security, and performance. We deliver full Drupal website development, maintenance, and content management support while ensuring compliance with Section 508, WCAG 2.0 AA, and USWDS. Our help desk services provide Tier 1-3 user support, troubleshooting content management, system access, and website functionality issues. Through performance monitoring, proactive issue resolution, and responsive optimization, we keep NTIA’s web presence modern, efficient, and aligned with federal digital standards. | |

**Experience 3 – Stealth Solutions Inc**

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| Project Name | Web Development Services for Department of Commerce |
| Client Name | National Telecommunications and Information Administration (NTIA) |
| Contract# | 1331L524C13350033 |
| Period of Performance | 09/19/2024 to 09/18/2025 |
| Client Point of Contact, Email and Phone number | William Severe, wsevere@ntia.gov  202-482-5965 |
| **Description of the Project**: Stealth provides comprehensive web development, and support services for NTIA’s public web properties, including NTIA.gov, Broadband USA, BTOP, the Federal Spectrum Compendium, and ITS.  Stealth’s work includes strategic governance, establishing technical standards, and migrating NTIA websites to Acquia Cloud for enhanced scalability, security, and performance. They deliver full Drupal website development, maintenance, and content management support while ensuring compliance with Section 508, WCAG 2.0 AA, and USWDS. Our help desk services provide Tier 1-3 user support, troubleshooting content management, system access, and website functionality issues. Through performance monitoring, proactive issue resolution, and responsive optimization, Stealth keeps NTIA’s web presence modern, efficient, and aligned with federal digital standards. | |

**Experience 4 – Bravent LLC**

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| Project Name | GSA Enterprise Content Application Service (ECAS) Environment Application and Website Portfolio |
| Client Name | General Services Administration (GSA), Office of Government-wide Policy (OGP) |
| Contract# | GS35F0623N-47HAA019F0333 |
| Period of Performance | 09/30/2019 - 09/29/2024 |
| Client Point of Contact, Email and Phone number | **Prime Contractor POC (REI Systems)**:  Kishore Vuppala  Email: [kvuppala@reisystems.com](mailto:kvuppala@reisystems.com)  Phone: (703) 975-0978  **Government POC:**  Linel Soto  Phone: +1 (202) 263-9478  Email: linel.soto@gsa.gov |
| **Description of the Project:** Bravent systems provides development, modernization, and operations support for a diverse portfolio of high-visibility Drupal websites, including GSA.gov, USA.gov, Acquisition.gov, Digitaldashboard.gov, Section508.gov, and BuyAccessible.gov. Bravent systems has successfully migrated multiple Drupal 7 sites to Drupal 9/10, including complex, data-driven platforms, and implemented Section 508 and WCAG 2.1 compliant themes to ensure accessibility across devices and user types. Notable work includes the full architecture and redesign of Digitaldashboard.gov in Drupal, development of a custom DITA XML editor and API-based regulation publishing engine for Acquisition.gov, and a multi-step form system for VPAT generation on BuyAccessible.gov. Bravent systems supports AWS-based infrastructure using tools such as Jenkins, Terraform, Puppet, and Splunk, and follows agile methodologies using Jira across Dev, QA, and UAT environments. The team routinely performs 508/link validation scans and remediates issues in coordination with GSA stakeholders. Bravent system also provides ongoing enhancement support, including performance optimization, accessibility testing, stakeholder engagement, and secure DevSecOps implementation. The team ensures each site complies with federal Section 508 regulations through regular scans using SortSite, Web Link Validator, and other automated tools, addressing all identified accessibility, broken links, and spelling issues in coordination with GSA. The team also supports the migration and maintenance of large, content-rich websites like GSA.gov and USA.gov and has implemented caching strategies to improve response time on sites such as PIC.gov. This work spans multiple sites and technologies, reinforcing Bravent system’s ability to manage large-scale, multi-stakeholder Drupal environments for the federal government. | |

**Experience 5 – Bravent LLC**

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| Project Name | DOC OCIO – IT Operations and Maintenance |
| Client Name | Department of Commerce, Office of the Secretary, Office of the Chief Information Officer (OCIO) |
| Contract# | HHSN316201200065W |
| Period of Performance | 06/07/2016 – 03/30/2023 |
| Client Point of Contact, Email and Phone number | **Prime Contractor POC(Patriot LLC):**  Munish Pathak, CTO , Patriot LLC  Email: [mpathak@patriotllc.net](mailto:mpathak@patriotllc.net)  Phone: 571-263-3777  **Government POC:**  Brenda Jenkins-Young, COR Email: [bjenkins-young@doc.gov](mailto:bjenkins-young@doc.gov)  Phone: 202-482-0247 |
| **Description of the Project:** Bravent LLC, as a subcontractor, supported the U.S. Department of Commerce (DOC) Office of the Chief Information Officer (OCIO) in a department-wide digital modernization initiative. The team contributed to the migration and operations support of over a dozen public-facing and internal websites, including commerce.gov, mbda.gov, eda.gov, and ocio.commerce.gov, transitioning them from legacy platforms such as .NET, SharePoint, and static HTML to a centralized, Drupal-based content management system. These efforts included implementing structured content types, USWDS-compliant themes, role-based editorial workflows, and Section 508 accessibility features to support compliance and user accessibility. Our team helped establish a shared Drupal platform with a centralized GitLab CI/CD pipeline, enabling consistent deployment processes and improved maintainability. The team supported Agile delivery in two- to four-week sprints, utilized SharePoint APIs to facilitate migration automation, and contributed to Lean Governance adoption across DOC offices. Additionally, Bravent LLC provided technical training and documentation to content editors, enhancing their ability to manage and update site content effectively. The project also involved conducting content audits, building an enterprise-wide taxonomy model, and improving content governance through standardized design systems and editorial controls. We supported the full development lifecycle from requirements gathering through QA, deployment, and maintenance ensuring secure and high-performance site delivery in alignment with DOC’s digital and accessibility policies.  This experience directly supports the requirements of the Ben’s Guide project, which calls for Drupal 10 re-platforming, content migration from a legacy CMS, structured editorial workflows, accessibility (WCAG 2.1/Section 508), mobile-friendly USWDS-compliant design, Agile development, DevSecOps pipelines, and training for content administrators all of which were successfully delivered by our team for the DOC OCIO initiative. | |

# Appendix 1 – Key Personnel

Team Canopy is pleased to identify Harold D. Baines Jr. as the Key Person for the Ben’s Guide to the U.S. Government modernization engagement. Harold will lead the Drupal migration effort and oversee ongoing site maintenance, bringing over a decade of hands-on experience in federal digital modernization, Agile project delivery, and Drupal platform leadership.

Harold is a certified Agile Project Manager and Scrum Master with a Master’s degree in Technology Management and a proven record of success in migrating, building, and maintaining Drupal-based government websites. He has led the NRC.gov migration to Drupal 10, and held senior roles at RIVA Solutions, Agile Six, Truss Works, and Acquia. His qualifications include multiple Acquia certifications (Site Builder D7/D8, Site Factory Pro, Cloud Pro), and his experience spans both high-level planning and practical execution – such as Drupal module configuration, content structuring, and team management.

Harold’s ability to translate stakeholder requirements into secure, accessible, and scalable web solutions—while coordinating distributed Agile teams and ensuring compliance with FISMA, Section 508, and WCAG standards—makes him exceptionally well-qualified to lead this initiative. His leadership will ensure the successful modernization and long-term sustainability of Ben’s Guide as a trusted educational resource.

Harold’s Resume:

***Harold D Baines Jr. - Project Manager / Drupal Administrator***

**Experience Summary**

* Experienced Agile Project Manager with 10+ years leading full project life cycles, specializing in Scrum-based web and custom app development. Skilled in stakeholder engagement, team leadership, and Agile coaching, with a focus on Drupal projects, including managing the NRC.gov migration to Drupal 10 at RIVA.

**Education**

* Master of Science in Technology Management from University of Maryland University College, MD 2012.
* Bachelor of Arts in Communication from McDaniel College, Westminster, MD 2010

**Certifications:**

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| --- | --- |
| * SAFe 5 Agilist * Advanced Certified Scrum Master - Scrum Alliance. * Acquia Certified Site Builder - D8 * Acquia Certified Site Builder - D7 | * Certified Scrum Master – Scrum Alliance * Acquia Certified Site Factory Pro * Acquia Certified Cloud Pro |

**Work Experience**

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| **Project Manager at RIVA Solutions, Tyson’s Corner, VA (Remote) from October 2024 - April 2025** |
| **Experience Summary** |
| * Created and managed project plans, schedules, scope, cost estimates, risk logs, status reports to ensure on-time client implementations. Maintained product backlogs, prioritizing features, user stories based on business value, stakeholder input. Led & delivered multiple Drupal migration, development projects such as Agile PM, Scrum Master, driving performance and delivery through Agile practices. Built and led cross-functional Agile teams, tracked project KPIs to identify improvement areas, implement corrective actions. |

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| **Sr Delivery Manager at Agile Six Applications, Inc, CA (Remote) from November 2023 - October 2024** |
| **Experience Summary** |
| * Organized and led a team of cross-functional individuals, responsible for maintaining a positive team environment while delivering a high-quality product. Transitioned into a hands-on role in web development, assisting in structuring content, building pages, and extending Drupal modules to support site functionality. * Responsible for stakeholder product expectations and product delivery commitments. Identified and solved project risks and coordinated with respective teams as applicable to mitigate and resolve. * Gained hands-on experience in Drupal site building, module analysis, and theming, helping development teams improve project velocity and deliver customized user experiences. |

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| **Delivery Manager at Truss Works, San Fransico CA (Remote Worker) from June 2022 - September 2023** |
| **Experience Summary** |
| * Led cross-functional Agile, facilitated all Scrum ceremonies. Monitored project metrics to drive continuous improvement across multiple projects. Served as Business Analyst on early-stage Drupal projects, migration, O&M documentation, improving processes through stakeholder consultation critical analysis. |

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| **Agile Project Manager (Scrum Master) at Macro Pros, Washington, DC from October 2021 - June 2022** |
| **Experience Summary** |
| * Integrated traditional project management with Agile frameworks for large, complex, mission-critical enterprise projects. Led multiple Drupal migration and development projects as Agile PM and Scrum Master, boosting delivery speed and team performance. * Oversaw scope, budget, schedule, staffing, vendor coordination, and contractual deliverables. * Developed product strategy documents outlining business cases, use cases, and requirements. |

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| **Solution Delivery Manager at Contentful Inc, Berlin Germany (Remote) from January 2021-July 2021** |

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| **Scrum Master III at Fearless Solutions, LLC Baltimore, MD from May 2019-December 2020** |

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| **Technical Account Manager - Team Lead at Acquia Inc., MA (Remote) from August 2015 - January 2019** |

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| **Management Consultant at Blackstone Technology Group, VA from October 2013 - August 2015** |

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| **Associate Business Analyst at TerpSys, Silver Spring, MD from July 2012 - October 2013** |