



EAST · MIDDLE · WEST

TENNESSEE HERITAGE OS

Master Strategic and Technical Blueprint

What the Tennessee Historical Commission could be if it fully connected and exercised the authorities, duties, programs, partnerships, and public-service role already placed in its hands.

*The Commission already has the mandate.
Tennessee Heritage OS gives it the connected operating system.
95 to 1 gives the public proof.*

Version 2.0 · June 2026

A working master document, research-grounded and synced to the deployed demonstration

Live demonstration: heritage-os-tn.codyboring.workers.dev

Prepared by BoringWorks

Document Control

Field	Detail
Purpose	One master blueprint covering the institutional case, mandate alignment, operating model, people model, technical architecture, working demonstration, roadmap, and measures for a connected statewide heritage service.
Primary audience	THC leadership and commissioners; program staff; TDEC and Strategic Technology Solutions (STS) partners; implementation partners; project advocates and funders.
What changed in v2	Corrected against a direct review of the live THC website (June 2026); reconciled to the deployed Heritage OS demonstration; tightened throughout; sharpened the line between systems THC already runs and the connective layer this proposes.
Research basis	The live THC website and program pages; current public staff titles; Tennessee statutes (Title 4, Chapter 11); the 2019–2029 statewide preservation plan; the 2024 Comptroller performance audit; state technology, records, AI, and accessibility requirements; comparable state preservation platforms.
Working premise	Heritage OS augments current systems and professional processes. It connects them around shared data, workflow, county service, public access, partner management, and measurable outcomes. It replaces nothing.
Status	A working blueprint for leadership discussion, technical discovery, and a 90-day demonstration. Not an adopted Commission plan. It makes no legal determinations; statutory references are for planning only.

How to read this blueprint

Sections 1–4 establish why a connective operating model fits THC's present mission and where the current delivery model leaves gaps. Sections 5–8 define the operating and technical model. Sections 9–11 turn the concept into a working demonstration, a phased program, and a decision package. Appendices preserve the staff-role map, the controlled vocabulary, a one-page brief, and the research sources.

Five minutes: read Section 1 and Appendix C. Deciding whether to authorize: read Sections 1, 9, and 11.

1. Executive Summary

A statewide operating model, not another standalone website or campaign.

The Tennessee Historical Commission holds broad statutory authority and runs strong, specialized programs. What it lacks is the connective tissue between them. The public meets THC as a set of separate program pages, portals, forms, and contacts. People begin with a place, a problem, or a question. They rarely begin knowing which program their need belongs to.

Tennessee Heritage OS connects THC's duties, SHPO responsibilities, programs, site partnerships, data systems, public content, local-government assistance, and reporting into one visible statewide service. It makes the Commission easier to use from the outside and easier to manage from the inside.

1.1 The recommendation

Authorize a 90-day working demonstration using five counties to show the full model in miniature, with 95 to 1 as the first public campaign. Preserve every current system of record and all professional authority. Add a shared county index, a guided public front door, a staff dashboard, an intake-and-routing layer, partner evidence, and repeatable reporting.

This is no longer hypothetical.

A working demonstration is already deployed at heritage-os-tn.codyboring.workers.dev. It runs on a tested engine, carries real THC records imported from the Commission's own published data services, and shows the statewide county map, the live county profile, and the submit-to-queue loop end to end. This blueprint describes the full model; the demonstration already proves the core of it works.

1.2 The strategic hierarchy

Layer	Name	What it does
Master vision	What the Commission could be	A visible, useful, accountable statewide heritage institution.
Operating system	Tennessee Heritage OS	The shared service, data, workflow, partner, public-access, and reporting model.
First campaign	95 to 1	County-by-county proof that every part of Tennessee can see and use THC.
Public promise	Every County Has a Story	The invitation that brings citizens and local partners into the record.
Operating principle	Common Ground	History and preservation as shared civic infrastructure.
Economic case	Preservation Builds Communities	Connect preservation to reinvestment, tourism, education, identity, and reuse.
Service cycle	Collect · Review · Preserve · Publish · Teach · Fund · Protect · Report	The repeatable lifecycle behind every engine and campaign.

1.3 What Heritage OS Is and Is Not

This boundary is the single most important commitment in the document. Getting it wrong is the fastest way to lose staff trust and waste money.

Heritage OS IS	Heritage OS is NOT
A coordination, engagement, and evidence layer across current programs and systems.	A replacement for e106, ServiceNow, Survey123, ArcGIS, TN.gov, the TDEC grants system, or NPS / NARA records.
A county and user-need lens that lets people enter through their problem, not a program name.	A system that turns public submissions into official eligibility, designation, protection, or grant approval.
A way to update a record once and power many outputs, page, map, brief, dashboard, report, partner task.	A marketing-only website, a new statutory program, or a public map of sensitive archaeological or cemetery locations.
A state-owned, portable platform whose data, standards, and exports stay under state control.	A technology project owned by an outside vendor.

1.4 The central proposition

The distinctive Tennessee model is not one giant database. It is a unified statewide service architecture: authoritative systems stay authoritative, expert staff keep control, sensitive records stay protected, and one shared operating layer makes the whole Commission visible, measurable, and easy to use. The law created the authority. The existing programs created the tools. Heritage OS creates the connected system.

2. The Institutional Reality Today

A capable statewide institution whose programs are stronger than the connective tissue between them.

2.1 Current institutional profile

Dimension	Current state
Legal position	Independent state agency administratively attached to TDEC; serves as Tennessee's State Historic Preservation Office (SHPO).
Staff	About twenty professional staff, deeply specialized across federal programs, grants, tax credits, Section 106, survey and GIS, the National Register, local-government assistance, sites, markers, cemeteries, and military heritage.
Boards	A twenty-member volunteer Commission; a State Review Board; the Monuments and Memorials Commission; the Tennessee Wars Commission.
State historic sites	Seventeen state-owned properties, operated day to day through partner organizations.
National Register	More than 2,000 Tennessee entries, at least one in every county. Published as an ArcGIS dataset and public viewer.
Historical markers	About 2,000 markers; roughly twenty new placed annually; missing and damaged markers depend on public and local reporting.
Survey and GIS	An ongoing survey supported by Survey123 and the Commission's ArcGIS viewer; inventory grows as resources reach fifty years of age.
Federal review	Section 106 submissions through the e106 portal; responses through ServiceNow. THC is a mandatory consulting party for federal undertakings in Tennessee.
Funding	Historic Preservation Fund grants and historic tax credits run through the TDEC grants system; a Historic Property / Land Acquisition Fund and Wars Commission grants operate separately.
Public interpretation	The Courier, markers, historic sites, Merit Awards, news, events, program guidance, and public meetings.

2.2 The service experience today

The THC website is organized around institutional programs. That structure assumes the visitor already knows whether a need belongs to the National Register, survey, Section 106, markers, cemeteries, local-government assistance, grants, or a site. Most people do not. They begin with a place, a project, or a question. Heritage OS supplies the service layer that meets them there and routes them to the right existing program.

What already exists, and it is good.

THC already publishes a public ArcGIS viewer, a cemetery register and map, and a state-historic-sites dataset. Heritage OS does not duplicate these. It connects to them, gives them a county lens and a guided front door, and links back to each authoritative source. The deployed demonstration already imports from these services.

2.3 High expertise, limited connective capacity

The constraint is not a lack of mission knowledge. A small expert staff must run complex regulatory, grant, asset, partnership, research, and public-service portfolios at once. No public title signals ownership of a cross-program digital service, accessibility, or data governance. Heritage OS should reduce duplicate work and create clear, distributed ownership, not add a silo.

2.4 A leadership window

THC is recruiting permanent executive leadership, and the next statewide preservation plan must follow the 2019–2029 plan. Designing Heritage OS now lets the next plan be measurable from the start. Present it as an executive operating and accountability model, not a communications or IT project.

3. Mandate Alignment

Heritage OS is a modern delivery model for responsibilities THC already holds.

The argument is not a new mission. It is making the existing mission easier to execute, coordinate, demonstrate, and access. Statutes below are summarized for planning and must be verified against the official Tennessee Code before any formal action.

3.1 Statute and federal duty, mapped to capability

Authority	In plain terms	Heritage OS capability
T.C.A. § 4-11-103	Rules, reports to the Governor and General Assembly, administration of public historical funds, financial discipline.	Portfolio dashboards; grant and partner evidence; board and legislative reports; audit trail.
§ 4-11-104	Criteria for evaluating state historic sites and properties seeking state aid.	Readiness model; transparent criteria; county opportunity pipeline; evaluation history.
§ 4-11-106	Authority to establish advisory boards and committees, including the cemetery advisory committee.	Committee workspaces; member records; agendas; action logs; public reports.
§ 4-11-107	Accept gifts and bequests; acquire properties of statewide significance.	Protected acquisition pipeline tracking significance, ownership, urgency, due diligence.
§ 4-11-108	Authority over state-owned property; contracts with local governments and nonprofits; periodic review.	Historic Sites Network; partner portal; obligations; inspections; maintenance; outcomes.
§ 4-11-109	Inactive public records may transfer to the Commission for permanent preservation.	Records provenance, transfer, retention, archival packages, access controls.
§ 4-11-111	State entities must consult THC before demolition, alteration, or transfer of significant state property.	State-property review queue; deadlines; known-resource context; written record.
NHPA / SHPO	Survey, inventory, federal assistance, National Register nominations, advice to governments, Section 106.	Survey and inventory integration; tiered access; local assistance; project workflow; reporting.

3.2 The legal-operational boundary

95 to 1 is not an expansion beyond the mission. Heritage OS is a county-based, program-connected delivery system for the mission already assigned to THC.

Public submissions are leads, stories, observations, or requests, not official determinations. Only authorized staff and boards make eligibility, listing, regulatory, grant, acquisition, or waiver decisions. Every public-facing record states its source, status, authority, last-review date, and limitations.

4. Gaps and Opportunity

The gap is not authority. It is integration, service design, evidence, and statewide visibility.

Gap	Consequence today	Heritage OS response
Program fragmentation	Accurate programs experienced as separate pages, portals, and contacts.	A shared service catalog, program routing, a county index, cross-program links.
No county lens	The public cannot see THC's full footprint in one county or district.	A standard county service page and internal county record for all 95 counties.
Multiple front doors	Users must choose a program before staff can help.	One guided intake that routes submissions and questions to the right process.
Uneven provenance	Official, federal, partner, and public information appear together with no shared status vocabulary.	Mandatory source, authority, verification, sensitivity, and last-reviewed fields.
Limited lifecycle evidence	Site monitoring, partner obligations, and disaster plans lack reliable schedules.	A partner and site compliance workspace with inspections, alerts, exceptions, evidence.
Accessibility and archives	Older public files were created to different standards.	Accessible-first templates, a remediation queue, document status, lifecycle ownership.
Weak activity-to-outcome line	Work is reported program by program; statewide impact is hard to show.	Common metrics and auto-generated county, district, board, and annual reports.
No visible product ownership	No public title signals responsibility for the digital service.	An executive sponsor, an operating product owner, a data council, a delivery partner.
Content freshness	Pages, lists, maps, and links change on different schedules.	Review cadences, freshness metrics, outputs generated from one updated record.

The 2024 Comptroller performance audit is a design input here, not a live indictment. Its themes, procurement controls, site-monitoring evidence, current disaster plans, are exactly the use cases a shared operating layer institutionalizes through schedules, ownership, documentation, and audit-ready records.

5. Tennessee Heritage OS

The connective operating layer for statewide preservation service.

5.1 North star

Any Tennessean, partner, professional, commissioner, legislator, or staff member should be able to begin with a place or a need and understand: what THC knows, which program applies, what is official, what is sensitive, who owns the next action, what help is available, and what result has been achieved.

5.2 The eight-step service cycle

Step	What happens
Collect	Receive records, surveys, stories, questions, files, observations, applications, partner reports, field data.
Review	Route to the right program, validate source and authority, screen for sensitivity, assign professional review.
Preserve	Maintain authoritative records, provenance, documents, media, retention, backups, archival exports.
Publish	Expose approved public information through county pages, maps, guides, stories, markers, program content.
Teach	Convert verified material into classroom, site, community, and professional learning resources.
Fund	Identify readiness, grant pathways, tax incentives, acquisition tools, and technical assistance, and route to the right portal.
Protect	Support review, maintenance, monitoring, easements, partner obligations, threat response, and preservation alternatives.
Report	Produce county, district, board, program, plan, grant, audit, and statewide impact evidence.

5.3 The ten operating engines

Each engine is a coherent area of service. They share one data layer, one identity model, and one set of access rules. The deployed demonstration already realizes several of them; the status column is honest about which.

Engine	Purpose	Demo status
County Service	One view of THC activity, resources, partners, needs, and service in each county. The home of 95 to 1.	Built: 95-county map, county profiles, and briefs.
Historic Resource	Connects survey, National Register, markers, cemeteries, sites, and thematic inventories under one resource identity.	Built: real survey and National Register records imported and mapped.
Review & Protection	Supports state-property consultation, Section 106 context, threats, and preservation alternatives.	Planned: the priority gap (see Section 10.2).
Historic Sites Network	Manages the seventeen state-owned, partner-operated sites as one statewide network.	Partial: public directory live; partner-evidence workspace planned.
Grants & Reinvestment	Connects preservation needs to HPF grants, tax credits, and acquisition tools; routes to the TDEC grants system.	Partial: pathway navigator live; readiness layer planned.
Local Preservation Capacity	Supports Certified Local Governments, ordinances, design guidance, and survey planning.	Partial: capacity surfaces planned.
Marker & Memory	Modernizes the marker program; connects markers to stories, condition, reporting, and education.	Built: marker proposal workflow and condition reporting.
Public Interpretation & Education	Turns professional records and community knowledge into responsible public meaning.	Built: county stories, trails, and education hub.
Partnership & Intake	One doorway for citizens, owners, professionals, partners, schools, and local governments.	Built: guided intake to admin review queue.

Reporting & Accountability	Connects activity to mandate, plan goals, board oversight, districts, audits, and public outcomes.	Partial: public dashboard live; full reporting planned.
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5.4 Design principles

Mission before software. Every feature maps to a statutory duty, a federal responsibility, a plan objective, an audit need, a public-service task, or a measurable outcome.

Integrate before replacing. Current formal portals stay authoritative until leadership deliberately changes them.

Distributed ownership. Shared standards do not erase expert authority. Programs keep their own workloads and legal processes.

One lens, many programs. County is the common lens, not the only structure.

One record, many uses. Update once; the page, brief, dashboard, report, and partner task follow.

Provenance everywhere. Every record shows source, authority, verification, steward, last review, and restrictions.

Tiered access by design. Public discovery, professional research, partner work, staff workflow, and restricted data require different permissions.

Non-negotiable foundations. Accessibility, records, security, and disaster recovery are architectural requirements, designed in from the start.

Human judgment in the loop. AI and automation may assist search, drafting, and routing; they never make official preservation decisions.

State ownership and portability. Data, taxonomies, documents, and audit logs must survive any vendor or platform change.

5.5 Why this can become a leading state model

State / system	What it proves	What Tennessee adopts
Pennsylvania, PA-SHARE	SHPO workflow and GIS can be streamlined without making all data public.	Integrated project workflow with tiered user access.
Virginia, VCRIS	A large inventory with paid professional access and protected archaeology.	Explicit user tiers and sensitive-data controls.
Texas, Historic Sites Atlas	Broad public discovery across markers, the Register, cemeteries, and sites.	County-searchable public discovery, with public and restricted clearly separated.
Tennessee, Heritage OS	A small expert agency, 95 counties, partner-run sites, and a public-history mission.	Statutory operations, partner evidence, county service, storytelling, education, and reporting in one model.

6. 95 to 1: The First Campaign Inside the OS

County-by-county public proof of a larger statewide operating model.

95 to 1 is not the operating system. It is the first campaign that makes the operating system visible: 95 counties, one connected Commission, and a repeatable county service package.

6.1 Campaign purpose

Make THC's statewide responsibility visible in every county, not only where a site, nomination, grant, or review is most active.

Give each county a consistent doorway into THC programs, records, education, assistance, and opportunities.

Create a measurable rollout leadership can explain to commissioners, legislators, county officials, schools, and the public.

Test the shared data, workflow, content, partner, and reporting model before expanding to other campaigns.

6.2 The standard county service package

Component	What it contains
County overview	Why the county matters; grand division; communities; heritage themes; current service status.
Official resource snapshot	National Register entries; survey status; markers; state sites; public cemetery information.
Program connections	Links into the National Register, survey, Section 106, CLG assistance, grants, tax credits, markers, cemeteries, sites, and the Wars Commission.
Preservation opportunity	Survey gaps, grant-readiness, threatened resources, public-use buildings, reuse and education potential.
Local partner network	County and municipal contacts, CLGs, historical organizations, schools, libraries, tourism, archives, site partners.
Public interpretation	A flagship county story, places, people, themes, photographs, marker connections, and source notes.

Education resource	At least one local classroom activity tied to verified resources and primary-source questions.
Guided intake	Submit a story, place, marker condition, document, cemetery concern, assistance request, or program question.
Downloadable brief	An accessible county summary for officials, educators, partners, commissioners, and legislators.
Internal operating record	Owners, status, submissions, review queue, program activity, data gaps, next actions, metrics.

6.3 Campaign statuses

Baseline → Collecting → In program review → County review → Published → Refresh due. The status is shown on the public county map, so the rollout is legible at a glance and honest about what is and is not yet verified.

6.4 Future campaigns on the same operating system

Marker to Meaning: Connects markers to stories, condition, QR experiences, thematic trails, and classrooms.

Preservation Builds Communities: Grants, tax credits, reuse, tourism, public buildings, jobs, and local investment.

Tennessee Classrooms, Tennessee Stories: County-based teacher resources, primary sources, site visits, and student participation.

Sites of Statehood: One public network for state historic sites and partner-operated programs.

Tennessee at Risk: Responsible, tiered identification of threatened resources and action pathways.

The 50-Year Horizon: Ongoing survey planning for properties reaching the historic-age threshold.

Common Ground: Inclusive public-history work connecting local memory, civic identity, and difficult history.

7. People, Ownership, and Governance

Strengthen the current titles and expertise. Do not force a disruptive reorganization.

7.1 Role alignment with the present staff model

Heritage OS gives each program leader a clear stake and a clear view, while authoritative decisions stay exactly where the law and professional standards place them.

Role family	Heritage OS responsibility	Primary view
Executive Director / SHPO	Executive sponsor; priorities; board relationship; budget; external accountability.	Portfolio dashboard, decision log, plan outcomes, statewide reports.
Deputy SHPO / Federal Programs	Operating product owner for integration, the plan, HPF, and cross-program standards.	Roadmap, governance, data standards, federal compliance, plan measures.
Tax Credits / Development Grants	Reinvestment and technical-preservation workflow owner.	Pipeline, technical guidance, investment outcomes, handoffs.
Section 106 staff	Federal review and consultation owners.	e106 context, deadlines, public guidance, restricted case links.
Survey & GIS	Enterprise cultural-resource data steward and geospatial authority.	Resource identity, maps, coverage and freshness, sensitive-geospatial rules.
National Register	Listing and nomination content authorities.	County listing views, nomination pipeline, Review Board materials.
CLG / Technical Preservation	Local implementation network and technical-assistance owners.	County contacts, capacity assessment, requests, training, progress.
State Historic Sites	Portfolio and partner-operations owners.	Partner obligations, inspections, maintenance, capital work, outcomes.
THPA / Outreach / Markers	Public intake, communication, markers, and outreach owner.	Intake triage, marker condition and content, campaign calendar, routing.
Cemetery Program	Register, assistance, advisory committee, privacy, and reporting owner.	Generalized public map, restricted detail, intake, committee records.
Wars Commission	Military heritage, grants, easements, and interpretation owner.	Thematic resource layer, grant and easement outcomes, protected acreage.

Administration	Records, finance, procurement, user administration, audit support.	Document control, retention, permissions, financial evidence, audit packages.
TDEC / STS / records / legal	Enterprise architecture, hosting, security, procurement, records, legal, accessibility.	Approvals, risk controls, integrations, standards, testing, operations.

7.2 Governance without a new silo

Body	Membership	Accountability
Executive Sponsor	Executive Director / SHPO.	Outcome, priorities, board and administration alignment, cross-program decisions.
Operating Product Owner	A designated senior staff leader.	Backlog, process standards, adoption, release decisions.
Product Council	Program leads across survey/GIS, NR, Section 106, grants, CLG, sites, markers, cemetery, Wars, administration.	Monthly cross-program decisions; resolves data, workflow, and public-language conflicts.
Data Governance Group	Survey/GIS lead, program stewards, records, security, accessibility.	Canonical identifiers, provenance, sensitivity, retention, data quality, exports.
Delivery Team	Product/project manager, UX/content/accessibility, engineering, GIS/data, testing/training.	Builds and operates the service under state standards.
Local Partner Network	CLGs, county and municipal officials, site partners, historical groups, schools.	Supplies local knowledge, reviews public facts, receives assistance, documents outcomes.
Board Oversight	The Commission and relevant committees.	Approves direction, reviews results and risks, uses dashboards rather than replacing staff management.

7.3 The one capability that is currently missing

A dedicated Digital Product Owner should ultimately own the cross-program service. It can begin as a time-limited contract or assigned role during the demonstration. The job is not to make preservation decisions. It is to convert staff expertise into shared workflows, accessible public services, integrations, measures, training, and continuous improvement. Without a named owner, the platform becomes a website project that launches and then drifts away from the work. The owner must have enough authority to convene programs, manage vendors, enforce common standards, and report to executive leadership.

8. Technical Blueprint

A hybrid integration architecture. Current systems stay authoritative; Heritage OS is the coordination layer.

8.1 Architecture principles

State-enterprise alignment. Involve TDEC and STS architecture, security, procurement, and operations from discovery through production.

Open interchange. Stable identifiers, documented APIs, scheduled extracts, and exportable open formats wherever appropriate.

Authoritative-source discipline. Each field and document has a system of record, a steward, a source date, and a synchronization rule.

Separate public and restricted services. Public discovery never implies access to sensitive archaeology, exact cemetery coordinates, protected-property detail, or confidential submissions.

Accessibility by design. WCAG 2.1 AA across web, forms, dashboards, documents, media, and generated reports. Accessible templates are mandatory.

Records by design. Every record class maps to an approved retention path, legal-hold process, and preservation export.

Security and privacy by design. Least privilege, MFA/SSO, audit logs, encryption, data classification, vendor risk, incident response, disaster recovery.

Human-controlled AI. Only approved use cases, approved tools, classified-data controls, transparency, and review. No official determinations by automation.

8.2 Systems of record and the Heritage OS relationship

This table is the operational version of the boundary in Section 1.3. It names who owns truth and what Heritage OS adds without duplicating authority.

System	Authority	Heritage OS relationship
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e106 / ServiceNow	System of record for Section 106 transactions.	Route users correctly; surface approved status and context; cross-link counties and resources. Never duplicate the official response.
Survey123 / ArcGIS / THC Viewer	Authoritative geospatial and survey sources.	Use shared identifiers and approved extracts; provide county coverage and freshness; respect restrictions.
TDEC Grants Management System	System of record for grant transactions.	Provide readiness, guidance, deadlines, referrals, partner history, and outcomes; deep-link to apply.
TN.gov platform	Official agency publishing channel.	Use approved integration or subdomain; never become an unofficial competing source.
NPS / NARA National Register	Federal authoritative record.	Link and synchronize approved metadata; distinguish Tennessee workflow from final federal action.
Partner site systems	Local operational source by agreement.	Define minimum shared data and reporting; do not centralize every site business system.
Heritage OS	Source of truth for its own cross-program objects.	Maintain authoritative-source links, not copy-and-forget records.

8.3 Core data model

A small set of shared objects, each carrying provenance and sensitivity. The deployed demonstration implements this model directly.

Object	Shape (selected fields)
County	Name, identifiers, grand division, districts, service status, denormalized counts, last review.
Historic resource	Canonical ID, type, generalized location, descriptions, source, survey and NR status, sensitivity, themes.
State historic site	Property, buildings, partner, agreement, inspection, maintenance, capital, disaster plan, public use.
Organization / partner	Type, geography, contacts, agreement, roles, capacity, submissions, assistance, outcomes.
Submission / request	Submitter, permissions, county and resource, type, files, routing, status, owner, response.
Story / interpretation	Title, audience, body, sources, rights, themes, program connections, review, publication.
Education resource	Audience and grade, standards, county and resource, activity, format, accessibility.
Preservation opportunity	Need, urgency, readiness, technical assistance, funding pathway, next action.
Document / media	File, format, rights, accessibility, source, retention class, sensitivity, checksum.
Metric / outcome	Definition, source, period, geography, target, actual, evidence, public or internal.

8.4 Mandatory metadata on every material record

Canonical ID and type · system of record and source link · authority level (official THC, federal, partner-submitted, public-submitted, staff draft, derived) · verification status and steward · sensitivity (public, generalized public, partner, staff, confidential, restricted cultural resource) · geography · created / modified / synchronized / last-reviewed dates · records class and legal-hold status · accessibility status · rights and consent · change history.

8.5 Access tiers

Tier	What they see
Public	Verified public records, generalized maps, county pages, stories, guidance, accessible downloads.
Contributor	Submit and manage own materials; see routing and communication; no authority over official status.
County / CLG / partner	Approved local workspace, assistance requests, partner obligations, draft review, local metrics.
Qualified professional / agency	Approved research and project context; controlled by role, need, and program rules.

THC staff	Program workflow, shared records, assignments, reporting, content review, cross-program context.
Restricted staff / legal / archaeology	Sensitive locations, confidential submissions, legal records, protected-property data.
Commission / oversight	Dashboards, packets, decision materials, risks, and outcomes appropriate to legal role.

8.6 Technology direction

The deployed demonstration runs on a Cloudflare-native, TypeScript stack: TanStack Start on Cloudflare Workers, a D1 database, R2 object storage, Drizzle and Zod for schema-driven contracts, and MapLibre with first-party map tiles. It imports real records directly from the Commission's published ArcGIS services, host-restricted to tn.gov, with idempotent loads.

For production, the recommended direction is a hybrid: an official TN.gov presence, a state-approved modular service and workflow layer, the existing authoritative portals untouched, one common data and index layer, and open APIs and exports. Any production choice must pass STS architecture, security, procurement, records, and continuity review. The demonstration stack is deliberately portable so that components can be replaced if production adopts state-enterprise platforms.

8.7 AI: useful, bounded, and reviewable

Tennessee's enterprise AI policy applies to boards and commissions and requires governance and data-classification controls; sensitive state data is never entered into public AI systems. Heritage OS treats AI as an optional assistive service, never a decision-maker.

Appropriate uses: semantic search over approved public content, metadata suggestions, duplicate detection, OCR in approved environments, draft summaries, plain-language drafts, report assembly, and intake-classification suggestions.

Requires human approval: publication, resource status, legal or regulatory conclusions, grant eligibility, historical interpretation, accessibility remediation, and records disposition.

Prohibited: automatic eligibility or Section 106 determinations, exposing sensitive data, unreviewed generated history, training public models on restricted submissions, and opaque scoring that affects access or funding.

8.8 Nonfunctional requirements

Accessibility: WCAG 2.1 AA, with VPAT/ACR expectations for vendors. Security: state data classification, least privilege, MFA/SSO, encryption, logging, third-party risk, incident response. Privacy: exact archaeology and cemetery data restricted; personal information minimized; consent managed. Records: approved retention and disposition authorities, versioning, legal holds, export packages, no vendor-only formats. Reliability: monitoring, backups, tested disaster recovery, documented RPO/RTO. Performance: mobile-first, low-bandwidth, optimized maps and media. Interoperability: stable IDs, API and export specifications, common vocabularies.

9. The 90-Day Working Demonstration

Show the complete future in miniature before asking anyone to approve the complete build.

Much of this demonstration already exists and is deployed. The 90-day plan below hardens it, adds the one missing engine, selects the final five counties with leadership, and produces the decision package.

9.1 Objective

In five minutes, leadership should see how the Commission's mission, staff, programs, systems, sites, counties, partners, and public value become one coherent operating model, real enough to click, search, submit, route, update, and generate a brief, without trying to automate every formal process or load every sensitive record.

9.2 Deliverables

#	Deliverable	Status
1	A future THC front door with a service finder and program map.	Deployed
2	The Heritage OS operating view: the engines and the service cycle.	Partial
3	The statewide 95-county map with status and service indicators.	Deployed
4	Five county service pages with resource snapshot, partner network, story, education, opportunity, and brief.	Deployed (county set to finalize)
5	A guided public intake that routes submissions to a controlled queue.	Deployed
6	A staff operating dashboard by county, program, owner, due date, source, sensitivity, status.	Partial
7	A historic-site partner view with obligations, inspection, maintenance, plan, and public-benefit evidence.	Planned
8	A searchable resource and marker view with official/source status and public-vs-restricted behavior.	Deployed
9	A Section 106 / review-and-protection context surface that routes to e106.	Planned (priority)

10	The implementation package: validated requirements, integration map, governance, roadmap, risks, recommendation.	To produce
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9.3 County selection

Five counties should show geographic, demographic, institutional, and program diversity. Strong archetypes: an East Tennessee statehood anchor (Sullivan, with Rocky Mount), the state-capital urban county (Davidson), a West Tennessee urban county (Shelby), a rural courthouse / Main Street county, and a smaller underrepresented county. Final selection rests with leadership based on priorities, local willingness, data readiness, and program mix.

9.4 The 30-60-90 plan

Window	Focus	Work
Days 1–30	Discover and define	Confirm sponsor and product owner; staff interviews; current-system and data inventory; user journeys; legal, security, records, and accessibility review; finalize counties; success measures.
Days 31–60	Build and validate	Harden the front door, map, county template, intake, and dashboard; build the Section 106 / review surface; add the site-partner sample; first integrations or approved extracts; accessibility testing; staff review.
Days 61–90	Prove and decide	Finalize five county packages and briefs; demo script; user testing; revised governance and requirements; cost and effort ranges; production-architecture decision; board and leadership presentation.

9.5 Demonstration team

A product/project lead (full-time for 90 days); a UX/content/accessibility lead (half to full time); a full-stack/integration engineer (full-time); a GIS/data engineer (quarter to half time); THC program experts (two to four hours per week per participating program, concentrated at review points); and TDEC, STS, legal, records, and security partners at scheduled checkpoints.

9.6 Acceptance criteria

A first-time public user finds the right program or next action without knowing program terminology.

A staff user opens one county and sees verified cross-program context without changing any authoritative decision.

Every visible record shows source, status, last review, and limitations.

Sensitive records are excluded, generalized, or restricted by role.

A single update appears in at least three outputs, for example a county page, a dashboard, and a brief.

The tested experience meets WCAG 2.1 AA and produces an accessible sample brief.

Staff can explain which current systems stay authoritative and what Heritage OS adds.

Leadership receives a credible production recommendation, not merely a polished prototype.

9.7 The five-minute sequence

Open the front door and show the connected mission. Choose a county and open its service page. Move from the county story to official resources, programs, assistance, and opportunities. Submit a marker condition report through guided intake. Switch to the staff workspace and show routing, provenance, sensitivity, ownership, and next action. Open the site-partner view and the Section 106 context surface. Generate the county and legislative brief. Return to the statewide map to show how 95 to 1 proves a larger system.

10. Roadmap, Delivery, and Dependencies

Build the service in phases, with governance and adoption ahead of scale.

10.1 Phased program

Phase	Scope	Outcome
0, Demonstration	Vision, requirements, five counties, shared model, intake, dashboard, site sample, Section 106 surface, briefs, architecture decision.	A decision to proceed and an approved production path. Largely deployed.
1, Front door + baseline	All 95 county skeletons; program finder; official links; accessible intake; five to fifteen complete county packages.	Visible statewide presence and a repeatable publishing and service model.
2, Workflow + integrations	Role-based workspace; ArcGIS, e106, grants, and TN.gov integrations; assignments; provenance; dashboards.	Less duplication, better routing, consistent status, measurable workload.
3, Sites, partners, grants, capacity	Partner portal; inspections; maintenance; disaster plans; CLG assistance; grant-readiness and outcomes.	Stronger asset and partner controls and local-service delivery.
4, Statewide intelligence	Search; public atlas; district reports; plan measures; open-data exports; approved AI assistance.	A mature statewide heritage service and accountability platform.

5, Continuous campaigns	Marker to Meaning, Preservation Builds Communities, classrooms, threatened resources, the 50-year horizon.	The operating system becomes the permanent platform for future strategy.
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10.2 Priority gap to close first

The single most important addition is the Review & Protection engine, a Section 106 and state-property context surface. It is a core statutory function (§ 4-11-111 and the NHPA) with no current representation in the demonstration. The right build is small and on-brand: a plain-language explanation of the process, the county and National Register context a consultant needs before filing (drawn from data already imported), and a deep link to the real e106 portal for the actual submission. It does not rebuild e106. It routes to it and adds the context the current site lacks.

10.3 Dependencies

THC leadership and board: Sponsor, priorities, authority, adoption, reporting expectations, policy decisions.

TDEC administration: Legal, procurement, finance, internal audit, public web, communications, administrative attachment.

STS: Architecture review, security, identity, hosting, integrations, AI policy, disaster recovery, vendor risk.

State Library and Archives: Records disposition authorities, electronic-records design, permanent records, archival transfer.

State GIS / ArcGIS: Survey and Viewer integrations, map services, sensitive-resource controls.

National Park Service: HPF allowability, SHPO requirements, National Register, planning, and reporting rules.

Local and site partners: County facts, public review, partner obligations, local capacity, adoption.

10.4 Funding and procurement

Fund the demonstration as a short strategic and technical discovery effort. Assemble production funding around the components being delivered, not a vague heritage website, state operating or modernization funds, program-eligible HPF components, site and asset-management appropriations, education and interpretation grants, and campaign-specific philanthropy. Confirm eligibility and match before committing any source.

Procurement must require state ownership of data, schemas, content, and logs; complete exports in non-proprietary formats and exit assistance; API and integration rights without punitive fees; accessibility-conformance evidence; state security, privacy, AI, and records requirements; clear service levels; knowledge transfer; and performance-based acceptance tied to user journeys and data quality, not merely software installation.

10.5 Principal risks and mitigations

Risk	Mitigation
Scope becomes everything THC does on day one.	Start with a demonstration and a thin common layer; phase program depth.
Staff perceive replacement or centralization.	Keep program ownership explicit; co-design workflows; preserve systems of record; measure staff time saved.
Public submissions create legal or factual confusion.	Authority and status labels, disclaimers, professional review, sensitivity screening, no auto-publication.
Sensitive resources are exposed.	Tiered access, generalized location, classification, qualified access, logging, security review.
Data quality is inconsistent.	Canonical IDs, provenance, steward ownership, validation, review dates, completeness indicators.
The platform launches but content goes stale.	A named product owner and stewards; review cadences; alerts; freshness metrics; generated outputs.
Vendor lock-in.	Open APIs and exports, state-owned schemas and content, termination assistance, modular architecture.
Accessibility remediation overwhelms.	Accessible templates first; inventory and prioritize legacy files; track remediation status.
Technology approval comes too late.	TDEC and STS in the first 30 days; architecture and security checkpoints before production commitments.
A new system adds work.	Automate synchronization and reporting; remove duplicate forms; measure handoffs before and after.

11. Measures and Decision Package

The operating system proves the Commission by showing service, stewardship, investment, and public benefit.

11.1 The performance framework

Outcome family	Illustrative measures
Statewide coverage	Counties at each service status; program and partner coverage by county.
Resource knowledge	Survey coverage and freshness; records with complete provenance; geographic and thematic gaps.
Public service	Intake volume; correct routing; response time; users reaching the right program; repeat questions reduced.
Review and protection	State-property and federal-review workload and timeliness; threats and alternatives documented.
Historic sites	Current agreements, inspections, maintenance, capital milestones, disaster plans, public-benefit measures.
Funding and reinvestment	Grant-ready projects; applications and awards; match; tax-credit investment; projects completed.
Local capacity	CLGs supported; planning tools; trainings; survey projects; new or strengthened local programs.
Markers and cemeteries	Condition reports, repairs, additions, verified records, committee obligations, privacy compliance.
Education and interpretation	County stories, Courier pipeline, lesson resources, downloads, inclusive thematic representation.
Governance and compliance	Accessible documents; records mapped to retention authorities; overdue obligations; audit evidence.

11.2 What leadership should authorize

Adopt Tennessee Heritage OS as a working concept for discovery and demonstration, not yet as a production platform or official brand.

Name an executive sponsor and an operating product owner.

Authorize a 90-day cross-program working demonstration with five counties and one historic-site partner view.

Direct early coordination with TDEC, STS, records management, legal, accessibility, GIS, and current platform owners.

Approve a small Product Council drawn from existing program titles and administrative staff.

Approve the core boundaries: current authoritative systems remain; public submissions do not create official status; sensitive data stays protected.

Require the demonstration to return with validated needs, production options, integration requirements, resource estimates, risk controls, and a phased decision package.

Use 95 to 1 as the first public proof campaign within the larger operating system.

11.3 The first ten actions

Confirm the sponsor, product owner, and working team.

Hold structured interviews with each program and administrative function.

Inventory current portals, forms, data stores, reports, partner obligations, and recurring manual work.

Map ten priority user journeys and the handoffs between programs.

Finalize five demonstration counties and one historic-site partner record.

Approve the shared source, status, and sensitivity vocabulary (Appendix B).

Confirm the county service template and internal county record.

Build the Section 106 / review-and-protection context surface, the priority gap.

Conduct accessibility, security, records, and architecture review during design, not at the end.

Present the working demonstration with a production recommendation and measurable benefits.

11.4 Final statement

The Commission already has the mandate. Tennessee Heritage OS gives it the system. 95 to 1 gives the public proof. The most important outcome is not a new website but an institution that can see its statewide responsibilities as one portfolio, serve people through one understandable front door, preserve expert authority, coordinate partners, protect sensitive resources, document decisions, publish responsibly, teach Tennessee history, connect preservation to investment, and prove public value county by county.

Appendix A. Heritage OS Fit by Staff Role Family

Heritage OS responsibilities attach to role families, not to named individuals, so the model survives staffing changes. Validate the current roster and titles before any formal use.

The role-to-responsibility-to-view mapping is in Section 7.1. The principle: every program leader gains a clear stake and a clear view, while authoritative decisions stay where the law and professional standards place them. The one new function the current structure lacks is a dedicated Digital Product Owner (Section 7.3).

Appendix B. Shared Status, Authority, and Sensitivity Vocabulary

One controlled vocabulary, used on every record across every program. The deployed demonstration already enforces these as enums.

Authority level

Level	Meaning
Official THC record	Approved or maintained by the responsible program or authorized body.
Federal authoritative record	Maintained by NPS, NARA, ACHP, or another federal authority; linked or synchronized.
Partner submitted	Provided by an approved partner; pending or subject to validation.
Public submitted	Community information, observation, story, or request; not an official finding.
Staff draft / working	Internal analysis, draft content, or pre-decisional workflow.
Derived / reporting	Calculated or assembled from other authoritative records for dashboards and reports.

Workflow status

Received · Screening · Program review · Needs documentation · Referred to authoritative process · Approved / verified · Published · Closed / no action · Restricted · Refresh due.

Sensitivity

Level	Meaning
Public	Approved for unrestricted public access.
Public, generalized	Visible only at county, vicinity, or reduced precision.
Contributor / partner	Visible to the submitter or an approved partner workspace.
Staff internal	Visible to authorized state staff for operations.
Confidential	Protected by law, policy, agreement, privacy, or program rule.
Restricted cultural resource	Archaeological, cemetery, sacred, or vulnerable location requiring special authorization.

Appendix C. One-Page Leadership Brief

The issue

THC holds broad statewide authority and strong expert programs, but the public and leadership experience those responsibilities through separate program pages, portals, records, partners, and reports. The Commission has no single county-centered, task-centered view of the whole mission.

The proposal

Tennessee Heritage OS: a shared service, workflow, data, partner, public-access, and reporting layer that connects current programs and systems without replacing their legal authority or specialized processes.

The first proof

95 to 1: a five-county demonstration of the standard county service package, then statewide rollout across all 95 counties. A working version is already deployed.

The ask

Authorize a 90-day working demonstration; name an executive sponsor and product owner; convene a cross-program Product Council; involve TDEC, STS, records, and accessibility from day one; return with a production decision package.

What the demonstration must prove

A public user can begin with a place or question and reach the right THC service.

Staff can see county and cross-program context while authoritative systems stay authoritative.

A shared record can power public, staff, board, and legislative outputs without duplicate work.

Sensitive resources, official determinations, accessibility, records, security, and partner obligations are controlled by design.

The Commission can report its statewide mission through measurable service in every county.

Appendix D. Sources and Research Notes

Primary sources reviewed for this blueprint, accessed June 2026.

THC website and program pages: About Us; Staff; Federal Programs (National Register, Section 106, preservation grants, historic tax credits, local-government assistance, survey); State Programs (state historic sites, historical markers, cemetery preservation, Wars Commission, land-acquisition grants); The Courier; board and public-meeting pages.

THC public data services: the Historical Commission ArcGIS Viewer (tnmap.tn.gov), the cemetery register and map, and the state-historic-sites and National Register datasets, the same services the deployed demonstration imports from.

Tennessee statutes, Title 4, Chapter 11 (§§ 4-11-103, 104, 106, 107, 108, 109, 111).

National Park Service, State Historic Preservation Office program.

Tennessee Comptroller, Tennessee Historical Commission Performance Audit, December 2024.

State of Tennessee, Strategic Technology Solutions information-resource policies; State Library and Archives records-management advisories; ADA digital-accessibility initiative (WCAG 2.1 AA).

Comparable state systems: Pennsylvania PA-SHARE; Virginia VCRIS; Texas Historic Sites Atlas, design patterns, not procurement recommendations.

Research cautions

Program counts, leadership, staff assignments, board membership, deadlines, site portfolios, and links change. Revalidate before each formal presentation.

The 2024 performance audit describes conditions and management responses at that time. Use it as a design input, not as a claim that every condition remains unresolved.

Statutory text must be verified against the official Tennessee Code before any formal legal action.

Comparable state systems demonstrate design patterns, not one-to-one operational equivalence.