Maryland Benefits Platform: Master Technical Report and Strategic Action Plan

TO: Katie Savage, Secretary, Department of Information Technology

FROM: Director of Benefits Access, Department of Human Services (DHS) Liaison

DATE: July 26, 2025

SUBJECT: Comprehensive Technical Assessment and Strategic Roadmap for the Re-engineering of the Maryland Benefits Platform Guided by the Proactive Benefits Access Model

Executive Summary

The Maryland Benefits platform, formerly MD-THINK, was architected as a first-in-the-nation, cloud-native system intended to revolutionize the delivery of health and human services. Its design is based on modern principles, including a microservices architecture, a shared data repository, and an API-driven integration layer, all hosted on Amazon Web Services (AWS). The technology stack is sophisticated, incorporating enterprise-grade solutions from Red Hat for integration, Informatica for Master Data Management (MDM), and SailPoint for identity management.

However, there is a catastrophic gap between the architectural vision and the implemented reality. A forensic audit concluded the system was "not developed effectively," suffering from "issues with the overall functionality and the need for ongoing re-work".[1] Costs have escalated from an initial $166.4 million to over $618.5 million, with a projected FY2026 operational budget of $157.6 million, driven significantly by "rising Amazon Web Services (AWS) cloud service costs".

For the purpose of re-engineering, the system must be viewed as a collection of modern but poorly integrated components built on an unstable foundation. The core data management and API layers, which are critical for any AI-driven model, are

documented as primary failure points.[2] The frontend is built on outdated technology, and the entire ecosystem suffers from a lack of transparent performance metrics and documented accessibility failures that have directly caused residents to lose benefits.[3]

This report provides a definitive technical assessment of the platform's current state and outlines a strategic action plan for its remediation and evolution. This plan is guided by the **Proactive Benefits Access Model**, a framework designed to transform the platform from a reactive, burdensome system into an intelligent, data-driven asset that anticipates resident needs and simplifies access to vital services.

1.0 Project Background & Current State Analysis

1.1 Fiscal Analysis: A Pattern of Unsustainable Escalation

The project's finances are untenable. Initial contracts approved in 2017 totaled **$166.4 million**. Through 17 contract modifications, the total estimated cost has ballooned to over **$618.5 million** as of late 2023.[1] The platform is now a massive operational liability, requiring a

$72.0 million deficiency appropriation in FY2024 and a proposed FY2026 allowance of **$157.6 million**, which accounts for 46% of the entire DHS Administration budget.[4] A key driver is "rising Amazon Web Services (AWS) cloud service costs," signaling a critical failure in cloud financial management (FinOps).[2]

1.2 Governance and Oversight: A Model of Ineffective Execution

A formal, cabinet-level governance structure, the **MD THINK Committee**, was established in 2021 to set policy and priorities.[5] Despite this, a forensic audit identified "numerous deficiencies regarding DHS' oversight and monitoring," while a legislative analysis found that the Department of Information Technology (DoIT) was "unable to sufficiently explain or justify" the massive cost overruns.[1] This demonstrates a

systemic failure of the governance model to control scope, cost, or quality.

1.3 User Experience & Accessibility: A Barrier to Service

The platform fails its end-users. Public data shows a history of "low user satisfaction," with the most recent quantitative metric being a mediocre **66% CSAT score from 2021**.[2] Qualitative user feedback reveals a system plagued by instability, with frequent login errors, application submission failures, and an unresponsive support system that forces residents to seek intervention from elected officials for basic case resolution.

Most critically, the platform is a barrier to access for vulnerable populations. A formal resolution by the **National Federation of the Blind of Maryland** documented severe accessibility failures on the portal that make it unusable for screen-reader users, stating unequivocally that these barriers have directly caused blind Marylanders to lose needed benefits.[3] There is no public, independent audit to verify that the current portal is compliant with WCAG 2.1 standards.[2]

2.0 Technical Architecture Deep Dive

2.1 Architectural Principles: Vision vs. Reality

- **The "On-Paper" Architecture:** The system was designed as a complete re-architecting of legacy systems based on modern principles: a cloud-native AWS foundation, a microservices model, a Shared Data Repository for a "360-degree client view," and an API-driven "plug and play" ecosystem.
- **The "As-Built" Architecture:** The implemented reality is a direct contradiction of the vision. The forensic audit's finding of "ineffective development" is corroborated by 2024 testimony that core design work remains incomplete.[6] The "plug and play" vision has failed due to a complete lack of a documented API catalog, turning the platform into another expensive data silo.[2] The "pay as you go" cloud efficiency promise has failed, evidenced by runaway AWS costs.[2]

2.2 Detailed Technology Stack

- **Cloud & Hosting Infrastructure (Amazon Web Services):** The platform is hosted entirely on AWS and was designed for compliance with federal standards like HIPAA, FISMA, and NIST.
  - **Compute:** Amazon EC2, Amazon ECS.
  - **Storage:** Amazon S3, Amazon EBS, Amazon EFS.
  - **Database:** Amazon RDS.
  - **Networking:** AWS Direct Connect, AWS VPN, Amazon Route 53.
  - **Security & Identity:** AWS IAM, AWS KMS, AWS Certificate Manager, AWS Config.
- **Containerization & Integration Platform (Red Hat):** Red Hat provides the critical layer between the AWS infrastructure and the applications.
  - **Container Platform:** Red Hat OpenShift Container Platform (likely version 4.x, given timelines).
  - **Integration:** Red Hat Fuse (integration platform) and Red Hat AMQ (messaging platform).
  - **Automation:** Red Hat Ansible Automation Platform.
- **Data Management & Governance (Informatica):** Informatica's suite is "front and center," responsible for creating the "golden record" for each citizen.
  - **Core Components:** Master Data Management (MDM), Data Integration, Data Quality (IDQ), Data Security, and Metadata Management.
- **Identity and Access Management (SailPoint):**
  - **Platform:** SailPoint IdentityIQ manages user identity for the public portal, including login, security policies, and OTP authentication.[2]
- **Frontend & Application Layer:**
  - **Portal Technology:** The MarylandBenefits.gov portal is built using **JavaServer Faces (JSF)**, an outdated, component-based web framework that represents a significant technical gap.[2]
  - **CRM Components:** Salesforce is used for specific CRM functions and by partner agencies like the Maryland Department of Health, creating a key integration point.
- **Development, Operations & Primary Partners:**
  - **Methodologies:** Agile (SAFe) and DevOps with CI/CD pipelines.
  - **Implementation Partner:** Deloitte Consulting designed and launched the initial platform.

- **Security Partner:** Visionary Technology Consultants (VTC) provided endpoint security guidance and vulnerability scanning.

2.3 Data Architecture and Flow

- **Data Model:** The conceptual model is a **Shared Data Repository** intended to centralize data from siloed systems. Informatica MDM is used to create a **"golden record"** for each citizen, with the underlying database technology hosted on Amazon RDS. No detailed public schema is available, but data access agreements confirm the existence of specific modules like the "Eligibility and Enrollment – Long-term Care module".
- **Data Flow & Known Failure Points:** Data from the One Application is intended to flow through the Red Hat integration layer to backend systems and the Informatica MDM hub. However, this flow is broken. Documented failures include:
  - **Submission Failures:** Users report the frontend "submit" button failing, leaving data in limbo.
  - **Backend Processing Errors:** Successfully submitted applications are marked with cryptic "Invalid" statuses like "App Imported. Manually Pended. Web ID Not Clear," indicating a failure in the automated data handoff.
  - **Verification Failures:** The system struggles with automated data verification, forcing caseworkers to manually request documents that should be verifiable through existing data-sharing agreements (e.g., with "The Work Number").

3.0 Comprehensive Gap Analysis

This analysis compares the intended state of the ecosystem with its current, documented condition.[2]

Aspect	Promised/Designed State	Current/Documented Reality	Identified Gap
Fiscal Management	A cost-effective, "pay as you go" cloud platform.	Costs escalated from $166.4M to over $618M. Ongoing O&M	**Massive Governance and FinOps Failure.** The

		costs are fiscally unsustainable, with rising AWS costs cited as a key driver.	project lacks effective cost control. Rising AWS costs contradict the efficiency promise, indicating architectural flaws or poor financial management.
Core Functionality	A modern, stable platform revolutionizing service delivery.	A forensic audit found the project was "not developed effectively" and requires "ongoing re-work."	**Fundamental Implementation Failure.** The platform is technically unstable and does not deliver the core functionality required, necessitating continuous, costly rework.
Data Integration & APIs	A shared data repository with a "plug and play" API architecture for a 360-degree client view.	No public API catalog exists. API endpoints are discoverable but undocumented, severely hindering inter-agency adoption.	**API Ecosystem Failure.** The lack of a documented, governed API catalog makes the "plug and play" vision impossible. The platform risks becoming another expensive data silo.
User Experience	A user-friendly, single portal for citizens.	The portal has demonstrated extremely slow page load times, and the most recent CSAT score was a poor 66%.	**Poor User Experience.** The portal fails to provide a modern, performant, and satisfying user experience, creating barriers for citizens.
Accessibility	An accessible platform for all users.	Documented, unresolved accessibility failures	**Critical Accessibility Failure.** The platform

		have caused blind residents to lose benefits. Compliance with WCAG 2.1 is unverified.	actively prevents a segment of the population from receiving vital services, creating significant legal and ethical risk.
Technology	A modern, mobile-friendly web application.	The portal is built on JavaServer Faces (JSF), an older framework that may contribute to performance issues and hiring challenges.	**Outdated Frontend Technology.** The choice of JSF is a technical gap that impacts performance, maintainability, and talent acquisition.
Data Integrity	Data from the "One Application" is correctly parsed and routed to appropriate backend systems.	The underlying data infrastructure is plagued by issues, leading to a high risk of data errors and application processing failures.	**High Risk to Data Integrity.** The "One Application" depends on a stable data integration layer that is known to be flawed, undermining its core purpose.

4.0 Strategic Action Plan for Re-engineering

To transform the Maryland Benefits platform into the asset it was envisioned to be, we must adopt a disciplined, three-pillar approach guided by the **Proactive Benefits Access Model**. We must **Stabilize** the foundation, **Integrate** the ecosystem, and only then can we truly **Innovate**.

Pillar 1: Stabilize the Foundation (Immediate Priorities: Next 6 Months)

Objective: Achieve operational stability, fiscal control, and baseline compliance.

- **Action 1.1: Commission an Independent, End-to-End Performance & Accessibility Audit.**
  - **Scope:** Conduct comprehensive load testing and transaction tracing to establish baseline performance metrics. Execute a full, independent audit to verify compliance with WCAG 2.1 standards and remediate all identified failures.
  - **Outcome:** A public performance dashboard and a non-negotiable, time-bound roadmap to achieve full accessibility compliance.
- **Action 1.2: Implement Aggressive Cloud Financial Management (FinOps).**
  - **Scope:** Engage a third-party FinOps specialist to analyze our AWS architecture, identify waste via AWS Cost Explorer, rightsize EC2 instances, implement savings plans, and re-architect inefficient components.
  - **Outcome:** A predictable Total Cost of Ownership (TCO) model and a targeted 15% reduction in cloud spending within 12 months.
- **Action 1.3: Triage the Technical Backlog & Execute Remediation Sprints.**
  - **Scope:** Analyze help desk data (ServiceNow/Jira) and conduct focused feedback sessions with caseworkers to identify and prioritize the top bugs causing data integrity issues and administrative burden. Pause all new feature development.
  - **Outcome:** A 6-month development roadmap focused exclusively on stability fixes that reduce manual work for DHS staff.

Pillar 2: Integrate the Ecosystem (Mid-Term Priorities: 6-18 Months)

Objective: Fulfill the original promise of a truly integrated, cross-agency network.

- **Action 2.1: Establish API Governance & Launch a Developer Portal.**
  - **Scope:** Deploy an enterprise API Gateway (e.g., AWS API Gateway), mandate the use of the OpenAPI Specification (Swagger) for all new and existing services, and publish a comprehensive, public API catalog.
  - **Outcome:** A fully documented API catalog that enables partner agencies (MDH, DOL, etc.) to systematically integrate their systems.
- **Action 2.2: Modernize the Frontend Technology.**
  - **Scope:** Plan and budget for a complete migration of the MarylandBenefits.gov portal from JavaServer Faces (JSF) to a modern, responsive framework (e.g., React, Angular), aligning with state developer hiring trends.

- **Outcome:** A next-generation portal that is faster, more secure, easier to maintain, and delivers a superior user experience.

Pillar 3: Innovate with AI for Proactive Access (Long-Term Vision: 18+ Months)

Objective: Leverage the stable and integrated platform to shift from a reactive to a proactive model of benefits access.

- **Action 3.1: Pilot Strategic AI for Administrative Efficiency.**
  - **Scope:** In line with the state's AI strategy, pilot high-impact AI tools on the now-stabilized platform.[7] Prime candidates include:
    - **Intelligent Document Processing (IDP):** Use AWS Textract to automate data extraction from uploaded documents, reducing manual data entry.
    - **Predictive Analytics:** Use Amazon SageMaker to analyze the trusted data repository and identify clients with a high probability of eligibility for other benefits.
  - **Outcome:** A successful PoC that reduces manual data entry for caseworkers by over 25% and increases cross-program enrollment by 10%.
- **Action 3.2: Implement Proactive & Personalized Outreach.**
  - **Scope:** Use the predictive models developed in Action 3.1 to trigger automated, personalized outreach via a service like Amazon Pinpoint, informing citizens of potential eligibility and guiding them to the One Application.
  - **Outcome:** A measurable increase in benefits uptake among eligible but unenrolled populations, fulfilling the core mission of the Proactive Benefits Access Model.

Works cited

1. Department of Human Services - Office of the Secretary and Related Units, accessed July 19, 2025, https://dls.maryland.gov/pubs/prod/NoPblTabPDF/DHS-OS25.pdf
2. Master Due Diligence Report & Gap Analysis: The MD...
3. RESOLUTION 2022-02 | National Federation of the Blind of Maryland, accessed July 19, 2025, https://nfbmd.org/node/508
4. 2025FY - Operating Budget Analysis - N00* - DHS Overview, accessed July 19, 2025, https://mgaleg.maryland.gov/pubs/budgetfiscal/2025fy-budget-docs-operating-N00-DHS-Overview.pdf

5. Department of Information Technology - IIS Windows Server, accessed July 19, 2025, https://dlslibrary.state.md.us/publications/OLA/DOIT/DOIT_2018-2022.pdf
6. N00A01 Department of Human Services (Administration) - at: www.DBM.maryland.gov, accessed July 19, 2025, https://dbm.maryland.gov/budget/FY2025Testimony/N00A01.pdf
7. 2025 Maryland AI Enablement Strategy & AI ... - DoIT.maryland.gov., accessed July 19, 2025, https://doit.maryland.gov/About-DoIT/Offices/Documents/2025%20Maryland%20AI%20Enablement%20Strategy%20and%20AI%20Study%20Roadmap.pdf