



Mississippi Department of Human Services

Legacy Systems Assessment Project

Deliverable 2. Legacy Systems Assessment Report

Version 1.1

Submitted by:

Danielle Ewing, Principal
Lauren McTear, Engagement Manager
Jessica Lindley, Project Manager
BerryDunn
2211 Congress Street
Portland, ME 04102-1955
Phone: 207-541-2200
dewing@berrydunn.com
lmctear@berrydunn.com
jlindley@berrydunn.com

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Table i: Version History

Version	Delivered Date	Version Notes
0.1	November 12, 2021	Initial draft submitted to the Mississippi Department of Human Services
0.2	November 26, 2021	Updates made to address feedback from the Mississippi Department of Human Services
1.0	December 03, 2021	Final version submitted to the Mississippi Department of Human Services
1.1	January 7, 2022	Technical Changes to Citrix and Redundancy findings

1.0 Executive Summary

Project Background

In alignment with the Mississippi Department of Human Services' (MDHS') mission of "Offering Mississippians Young and Old Tangible Help Today to Create Lasting Hope for Tomorrow", the MDHS envisions having modernized, enterprise-wide information technology (IT) systems that assist with the delivery of public assistance programs, social services, and other supports in a more efficient, effective, and timely manner.

In August 2021, MDHS engaged BerryDunn—a management and IT consulting firm—to conduct assessment and analysis activities, as required for federal funding approval, to evaluate MDHS' existing legacy IT systems¹ to determine the cost benefits of possible alternatives, such as transfer systems, replacement options, or enhancements. The analysis and assessment activities will provide the MDHS information about the implementation of a modernized, integrated IT solution that will benefit MDHS stakeholders and the citizens of Mississippi in the most cost-effective manner. The in-scope legacy IT systems include:

- Mississippi Automated Verification Eligibility Reporting Information Control System (MAVERICS) – Statewide IT system used to manage initial and ongoing eligibility calculations and determinations for the Supplemental Nutrition Assistance Program (SNAP). Subsystems include Disaster SNAP (DSNAP) and SNAP Employment and Training (SNAP E&T).
- Jobs Automated Work Systems (JAWS) – Statewide IT system used to manage initial and ongoing eligibility for Temporary Assistance for Needy Families (TANF) and TANF Work Program (TWP) case management services to eligible recipients.
- Electronic Financial Interface Tracking System (eFITS) – Statewide IT system responsible for interfacing with the Electronic Benefits Transfer (EBT) contractor systems and providing deposits to a client's cash benefit debit card from multiple programs and reconciling the use of benefits.
- Mississippi Enforcement and Tracking of Support System (METSS) – Statewide IT system used to implement the Social Security Act Title IV-D – Child Support program for the State of Mississippi (State). Functions to collect and maintain data on all child support enforcement cases and perform automated functions pertaining to locating noncustodial parents; establishing paternity; and enforcing, collecting, and distributing child support enforcement payments.

¹ MDHS has used the term "legacy" to refer to these IT systems as IT systems that exist in the current environment. The term does not necessarily imply that the technology is obsolete.

- Child Care Payment System (CCPS) – IT system used to manage the Child Care Payment Program (CCPP) within the Division of Early Childhood Care and Development.

Report Purpose

The primary purpose of the Legacy Systems Assessment Report is to:

- Document the MDHS’ current programmatic and technical environment, including functionality, approximate cost, and related support issues for the five legacy IT systems with scope of the project
- Document the desired future environment, including project vision and goals
- Identify and develop findings related to the challenges and opportunities for improvement in the current environment, and gaps between the current and desired future environment
- Document the preliminary functional and technical requirements that a modernized, integrated IT solution (referred to subsequently in the report as the modernized IT solution) should fulfill to meet MDHS’ vision and goals and future programmatic needs
- Provide other actions for the MDHS’ consideration to help ensure successful planning and implementation of a modernized IT solution

Findings Overview

Overall, the underlying technical infrastructure and current functionality of the legacy IT systems, as well as ongoing technical support issues, negatively impact the long-term viability of the IT systems to support MDHS’ program areas and present several challenges, as summarized in Table ES1.

Table ES1: Findings Overview

Finding	Description
Strain on current IT resources to maintain and enhance the environment	Upgrades occur during allowable Sundays, but rollback can be extremely difficult and time-consuming when problems are encountered. The MDHS IT staff must deal with multiple platforms and programming languages to make changes in the current IT systems. Due to the time involved in making these modifications, the MDHS often must establish manual processes and/or new stand-alone IT systems to implement regulatory, policy, or procedural changes.
Cost and availability of experienced resources	Technical resources who have experience with the Natural and Common Business-Oriented Language (COBOL) programming language are scarce, generally expensive, and often unavailable.
Strain on users	Users must log in to multiple IT systems, maintain multiple sets of credentials, and navigate through multiple menu-driven screens. Users routinely enter redundant

Finding	Description
	data into more than one system, creating an opportunity for data errors and causing inefficient use of staff time and resources.
Complex user management	While some solutions leverage Active Directory to authenticate, other applications maintain their own ID and passwords. With limited or no single-sign-on capabilities, users can have difficulty maintaining their accounts and often have to reach out to the Help Desk for assistance with routine credentials and management requests.
Performance Issues	The systems are plagued with performance issues that appear during peak times of usage and at the end of the month, negatively impacting user productivity.
Lack of scalability and robustness of environment	The current environment, although monitored, is not optimized for scale, nor is it load-balanced, often resulting in performance degradation when peak volume is reached. In addition, several databases are all used within the single environment, including Training, Quality Assurance (QA), and Help Desk, contributing to performance issues. Additionally, applications run on a single server, which can further complicate the application delivery process.
Redundancy, disaster recovery, and general backup management	While the MDHS does employ redundancy in some hardware servers, areas for improvement exist. There is currently no duplicate data center for disaster recovery. In addition, general backups are run as part of a batch process, and full backups, as opposed to incremental backups, are generated nightly, contributing to further strain on performance and system usability. Storage is currently managed by EMC Storage Solutions.
Inconsistency in federal compliance, including security	Since each legacy IT system utilizes unique code bases, they are often at different stages of federal compliance. The MDHS seeks to modernize its IT systems to verify compliance with federal and State security and programmatic standards across programs, including Internal Revenue Service Publication 1075 (IRS-1075) and National Institute of Standards and Technology Special Publication 800-53 (NIST-800-53) Revision 5 (Rev. 5), Office of Child Support Enforcement (OCSE) guidelines, and Food and Nutrition Service (FNS) requirements.
Lack of accessibility on modern, mobile devices	Legacy IT systems have limited functionality and accessibility via mobile devices, including Android or iPhone Operating System (iOS). While the MDHS has initiated the use of Microsoft (MS) Intune for Enterprise Mobility Management, State systems are not accessible on such devices due to the underlying architecture and technology of legacy IT systems.
Lack of data governance model	The MDHS recognizes that a lack of data governance has a direct impact on data quality. Although a Master Person Index (MPI) exists, it is only used for disbursement of child support payments. A general Master Data Management (MDM) architecture does not currently exist, resulting in data duplication and data entry redundancy between programs.
Interoperability challenges	To support programmatic needs, legacy IT systems are heavily dependent on interoperability. Overall, recent interoperability efforts have been successful, e.g., the MDHS implemented an in-house Enterprise Service Bus to integrate the legacy IT systems to the Common Web Portal (CWP). However, the majority of interfaces use batch processes with few real-time exchanges, impacting timeliness of access

Finding	Description
	to benefits and receipt of services. In addition, data quality between system integrations and process integrations are not consistent.

Other Considerations

In addition to modernizing its legacy IT systems, BerryDunn recommends the MDHS consider the following high-level actions to address several findings and prepare stakeholders for successful implementation of the IT solution.

- Develop a framework to govern the use, accessibility, and security of data across all programs by initiating a formal data governance team.
- Update the MDHS technology plan to reflect future MDHS systems’ operations with an integrated system, including QA (related to initial design and requirements definition) and testing processes, roles and responsibilities, tools used, and documentation developed.
- Establish an ongoing maintenance and operations (M&O) governance structure and processes for communications, decision-making, oversight of the IT solution vendor, and collaboration with system architecture and data governance teams.
- Centralize the financial management of IT assets to better allocate budgets, track M&O costs, and inform funding requests.
- Engage other State departments and/or providers to discuss the improvement of interoperability prior to issuing a request for proposals (RFP) to build buy-in and ensure all relevant stakeholders are informed.
- Perform an organizational change readiness assessment and develop and implement an organizational change management (OCM) plan to build buy-in and otherwise prepare MDHS stakeholders for upcoming changes (e.g., business process changes) resulting from implementation of a modernized IT solution.
- Redesign business processes to maximize the return on investment and achieve intended project goals prior to the design, development, and implementation (DDI) of the modernized IT solution.
- Assess impact to State policies and begin developing and documenting policy changes to reflect future MDHS operations with a modernized IT solution.
- Develop a funding optimization plan—including appropriately maximizing federal financial participation (FFP) for both DDI and M&O costs—for the modernized IT solution.

Next Steps

After the Legacy Systems Assessment Report is finalized, BerryDunn will conduct an analysis of several potential IT solution alternatives available to help MDHS achieve its project vision and goals. BerryDunn will evaluate each alternative against agreed upon criteria. BerryDunn will include alternatives deemed to be potentially feasible as a result of the alternatives analysis in the subsequent cost benefit analysis.

2.0 Introduction

2.1 Project Background

The MDHS currently uses five legacy IT systems to operate its SNAP (including DSNAP and SNAP E&T), TANF, TWP, Child Support Program, and CCPP, as follows:

- MAVERICS is used to manage eligibility determinations for SNAP. Subsystems include DSNAP and SNAP E&T.
- JAWS is used to manage TANF eligibility and TWP case management service for eligible recipients.
- eFITS is used to interface with the State's EBT contractor systems, provide deposits to a client's cash benefit card from multiple programs, and reconcile the use of benefits.
- METSS collects and maintains data on all child support enforcement cases and performs automated functions pertaining to child support enforcement activities.
- CCPS is used to manage the CCPP within the Division of Early Childhood and Development.

In August 2021, MDHS engaged BerryDunn—a management and IT consulting firm—to conduct an assessment and perform a feasibility study—required for federal funding approval—to gain a better understanding of the approach to modernizing several legacy IT systems that provides the most benefit to MDHS stakeholders in a cost-effective manner. Key project activities include, but are not limited to, the following:

- Performing a current-state assessment and requirements' analysis to develop functional, technical, and other requirements for a modernized IT solution
- Identifying and analyzing the feasibility of alternatives to fulfill the MDHS' needs based on established criteria, e.g., ability to meet functional, technical, and other requirements; ability to achieve compatibility with State technical standards and other necessary software applications; and organizational, financial/cost, and operational impacts
- Performing a cost benefit analysis for each potentially feasible alternative
- Aggregating information from the requirements analysis, alternatives analysis, and cost benefit analysis to develop a feasibility study
- Delivering a final presentation to the MDHS Executive Steering Committee

**MAVERICS IS APPROXIMATELY
30 YEARS OLD**

JAWS IS OVER 20 YEARS OLD

eFITS IS OVER 15 YEARS OLD

METSS IS OVER 20 YEARS OLD

CCPS IS 10 YEARS OLD

*MDHS System Assessment Project
Statement of Work (SOW)*

- Developing and documenting a conceptual system design for the alternative selected by the MDHS

Although these legacy IT systems have supported the MDHS service delivery needs and allowed it to provide critical benefits to clients, the MDHS is seeking to implement a modernized, integrated IT solution to help achieve its vision and goals, as described in Section 4.0: Desired Future Environment.

2.2 Report Purpose

The primary purpose of this report is to:

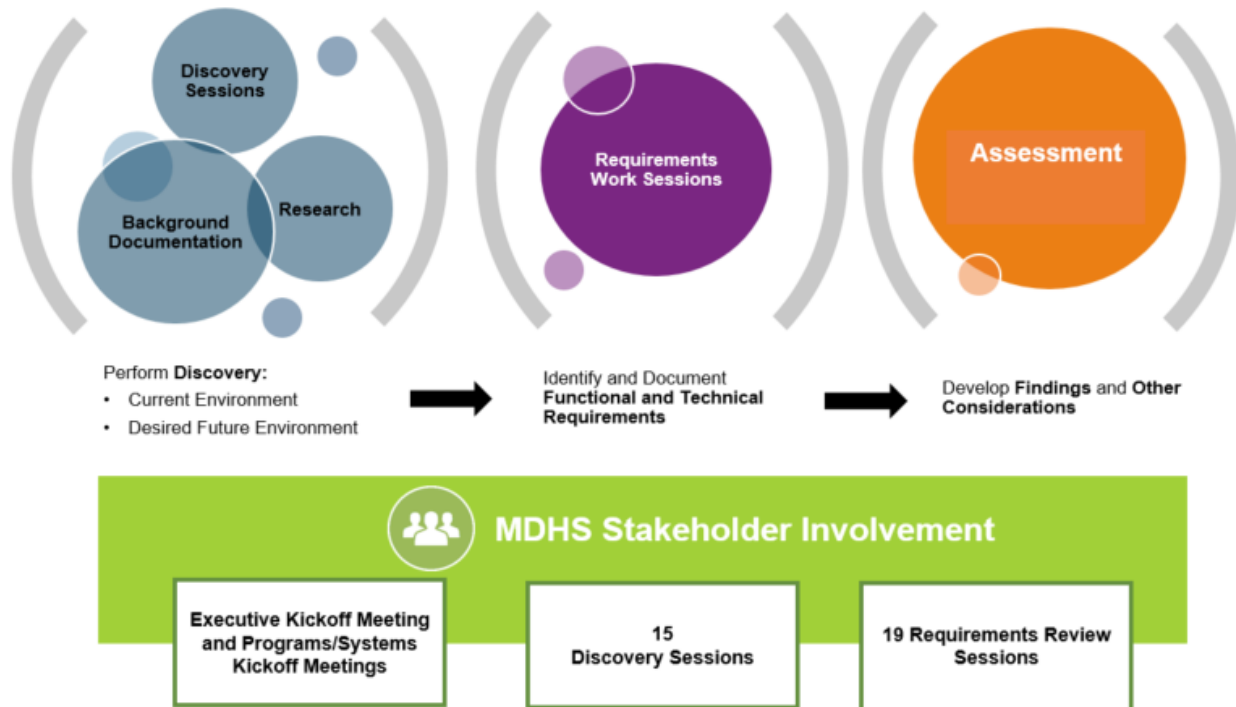
1. Document the MDHS' current technical environment, including the current functionality, approximate costs, and related support issues of the five in-scope legacy IT systems
2. Document the desired future environment, including the project vision and goals
3. Define the preliminary functional and technical requirements that the modernized IT solution should fulfill to meet MDHS' project vision and goals and future programmatic needs
4. Identify findings related to the challenges and opportunities for improvement in the current environment, and gaps between the current and desired future environment
5. Provide other actions for MDHS' consideration to help ensure successful planning and implementation of a modernized IT solution

BerryDunn and MDHS will use this assessment to inform completion of an alternatives analysis and a cost benefit analysis, and to develop a conceptual design for a modernized, integrated IT solution to support the MDHS' technical needs for the future.

2.3 Work Performed

To inform the Legacy Systems Assessment Report, from August 2021 to November 2021, BerryDunn performed the key activities depicted in Figure 1 on the following page, in collaboration with MDHS leadership, staff, and vendor partners.

Figure 1: Work Performed



2.4 Project Influences

Assumptions are premises about the business, technical, and/or other factors in the project environment that, for the sake of the project, are taken as fact. Constraints are known facts over which there is limited or no control. Constraints can affect the scope, direction, planning, and implementation of a project, as well as the format and content of a report.

2.4.1 Assumptions

The following assumptions influenced the development of this report:

- The primary purpose of this legacy systems assessment is to identify challenges in the current environment and gaps between the MDHS' current business and technical environments and the MDHS' strategic business goals and desired future business and technical environments. Therefore, many of BerryDunn's findings are critical by nature. BerryDunn would like to acknowledge the dedication and significant efforts of the MDHS staff and other stakeholders since the inception of this project.
- Stakeholder feedback might vary due to diverse perspectives. To inform the assessment, BerryDunn focused on themes heard consistently across stakeholders and attempted to validate feedback to the extent feasible.
- Information provided by the MDHS stakeholders about existing technologies and capabilities is accurate and current. Although BerryDunn attempted to validate provided

information through means such as documentation reviews and follow-up meetings, BerryDunn did not validate the accuracy of all information firsthand (e.g., through direct observation and in-depth analysis of technology and processes).

2.4.2 Constraints

The following constraints influenced the development of this report:

- BerryDunn’s review of documentation was limited to documents provided by MDHS and information publicly available online.
- The MDHS and BerryDunn attempted to include a comprehensive group of project stakeholders in discovery activities, such as discovery sessions and requirements work sessions. Stakeholder responsiveness and participation might have been limited due to competing and or conflicting priorities. Details regarding stakeholder engagement and participation are in Appendix B: Project Participants and Meetings.
- This is a point-in-time assessment based upon information provided to BerryDunn up to November 19, 2021. BerryDunn expects that the status of the report’s content might change between the time stakeholders provided the information and the time BerryDunn submitted the report.
- Performing a detailed technical assessment of the legacy IT systems (e.g., reviewing code, test results, technical and system architecture, and security vulnerabilities) was not within BerryDunn’s scope of work. BerryDunn relied on reviewing background documents, data, and stakeholder feedback to develop technology-related gaps for the report.
- At the time of this report, detailed cost information for maintaining and supporting the legacy IT systems was limited; therefore, the true costs are likely greater than the costs represented in Section 3.3.2. The MDHS was able to obtain staffing-related costs for MAVERICS, JAWS, eFITS, and METSS and licenses/software costs (e.g., IBM Cognos, Software AG products, JIRA, etc.). The breakdown of hosting costs for all legacy IT systems and an additional breakdown of contracted staff allocated across MAVERICS/JAWS/eFITS was not available at the time of this report. Deliverable 4: Cost Benefit Analysis will provide more detailed cost information, if available.
- The project timeline was compressed for reasons including desired completion of the alternatives analysis and cost benefit analysis by February 2022 to inform MDHS’ request for funding from the Legislature.

2.5 Report Format

This report includes eight major sections and three supporting appendices, as follows:

- Section 1 (Executive Summary) provides an overview of key information in subsequent report sections.

- Section 2 (Introduction) provides details on the project background, report purpose, work performed to develop the report, project influences (including assumptions and constraints), and the report format.
- Section 3 (Current Environment) provides an overview of key stakeholders in Mississippi who have vested interest in the success of the MDHS and its efforts, provides information on the program environment and each of the program areas, and provides an overview of the current technical environment.
- Section 4 (Desired Future Environment) provides information on MDHS' targeted future environment and includes the vision and goals established by MDHS leadership.
- Section 5 (Assessment Findings) provides a summary of the assessment findings, as well as more detailed information on the strengths and challenges in the current program and technical environments.
- Section 6 (Functional and Technical Requirements) provides an overview of the functional and technical requirements for the modernized IT solution documented in Appendix C, as well as the methodology used to develop the requirements.
- Section 7 (Other Considerations) provides high-level actions BerryDunn recommends the MDHS consider addressing several findings and prepare stakeholders for successful implementation of the modernized IT solution.
- Section 8 (Next Steps) provides next steps for the project.
- The related appendices provide supporting details pertaining to the report, including:
 - Appendix A lists the acronyms used throughout this report.
 - Appendix B summarizes participants in project meetings.
 - Appendix C provides a link to the RTM for the modernized IT solution.

3.0 Current Environment

3.1 Key Stakeholders

In collaboration with its partners, the MDHS provides public assistance programs, social services, and support to children, individuals, and families. Numerous stakeholders have a vested interest the health, safety, and well-being of all Mississippians and in the success of MDHS' legacy IT systems' modernization effort.

The following subsections provide high-level information about each key stakeholder group.

3.1.1 The MDHS

The MDHS is an umbrella agency within the State whose mission is “offering Mississippians young and old tangible help today to create lasting hope for tomorrow”.

The MDHS 2019 – 2021 budget totals \$1.35 billion and includes over 2,145 authorized full-time equivalents (FTEs) and part-time positions.² The MDHS is comprised of seven policy/programmatic divisions that provide services to approximately 713,992 Mississippians:

- Aging and Adult Services
- Child Support Services
- Community Services
- Early Childhood Care and Development
- Economic Assistance Eligibility
- Workforce Development and Partnership Management
- Youth Services

MDHS leadership is responsible for incorporating policy and legislature decisions into all programs. MDHS leadership ensures program(s) standards are upheld in accordance with federal and state policies and guidelines. Delivery of the MDHS' services involves partnerships between the MDHS, community-based organizations, providers, individuals/families, and law enforcement. Figure 2 on the following page provides an overview of the MDHS programmatic divisions.

² MDHS Appropriations Bill Fiscal Year 2021

Figure 2: MDHS Programmatic Divisions³

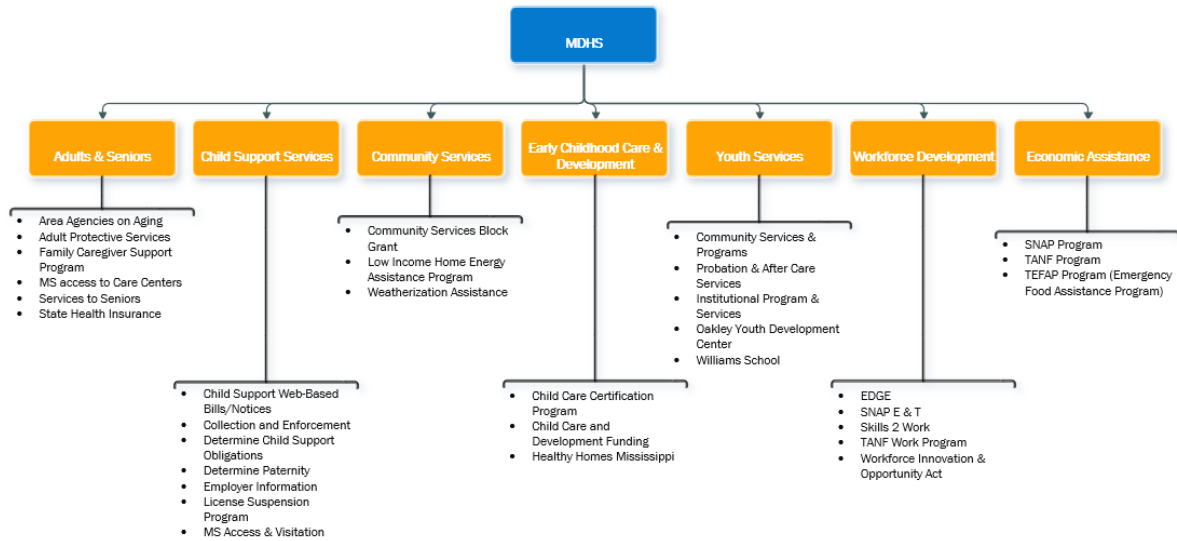


Table 1 provides a brief description of the services the MDHS provides through each of the MDHS programmatic divisions in scope for this assessment.

Table 1: MDHS Services Overview⁴

Programmatic Division	Services Description
Child Care Certificate Program (CCCP)	Provides training and technical assistance to child care providers, as well as a lending library of learning resources to child care providers and parents. These services are available at any one of the Mississippi Child Care Resource and Referral sites located across the state.
CCPP	Distributes set aside funding to provide financial assistance in the form of vouchers for low-income families to afford quality child care services.
Child Support	Helps parents establish paternity and assists custodial parents by working to ensure they receive regular and dependable financial and medical support for their children.
DSNAP	Provides nutrition assistance to those affected by a disaster or emergency.
SNAP	Provides monthly benefits that help low-income households buy the food they need for good health.

³ MDHS Program Organization Chart, 2021

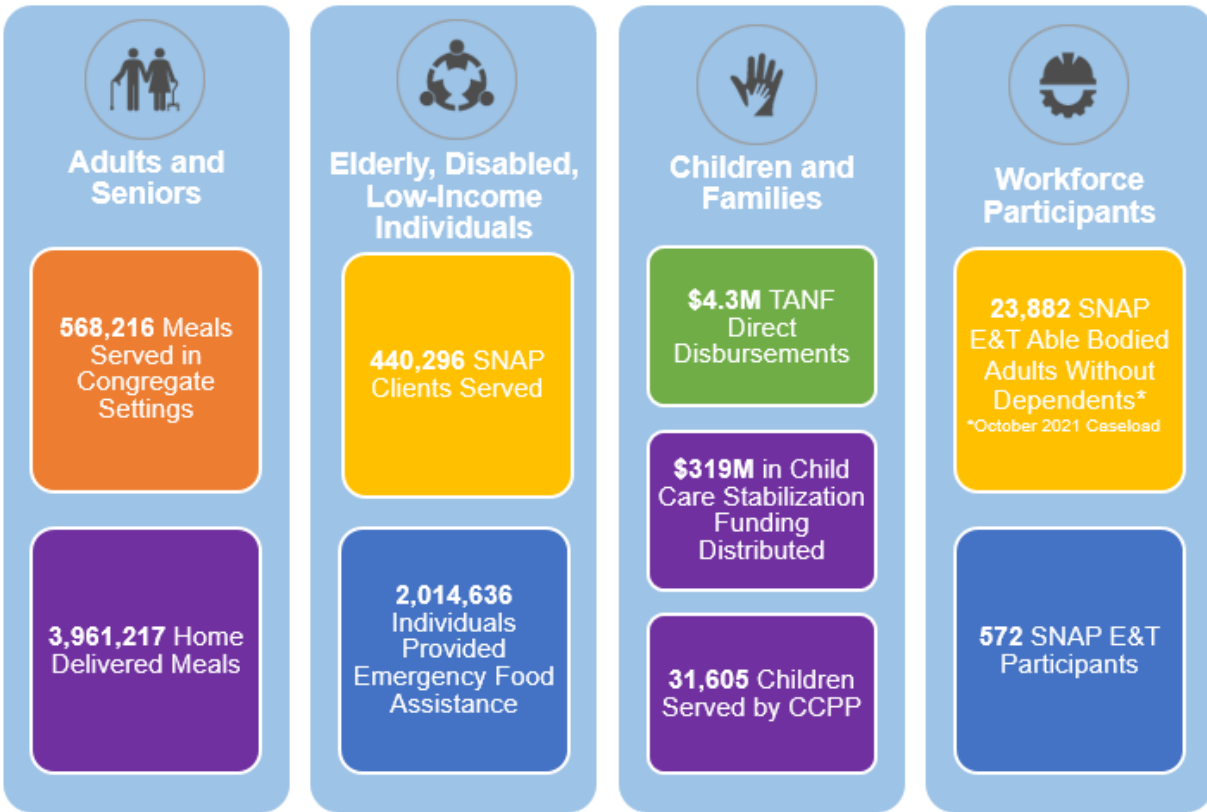
⁴ <https://www.mdhs.ms.gov/services/>

Programmatic Division	Services Description
SNAP E&T	Provides employer-driven, career-technical education, workforce skills training, and wrap-around services to eligible SNAP recipients.
Skills2Work	Provides tuition reimbursement assistance and other support services for adult basic education, career/technical pathways, and workforce skills training programs.
TANF	Provides monthly cash assistance to poor families with children under the age of 18.
TWP	Assists needy families achieve self-sufficiency through employment and training activities.

3.1.2 Clients

The MDHS provides social and economic assistance services to vulnerable individuals and families, and contracts with several providers across the state to provide services. Individuals may apply for and access services through several means, such as online portals email, in person visits to county offices, and over the phone. Figure 3 on the following page provides an overview of the clients served by the MDHS Division of Economic Assistance in State in 2021.

Figure 3: Overview of Division of Economic Assistance Clients Served⁵



3.1.3 Division of Economic Assistance

Within the MDHS, the Division of Economic Assistance administers public assistance programs, which help qualifying low-income individuals and families with children, the elderly, and people with disabilities meet their household needs. After eligibility and benefits determination processes are completed, the division distributes appropriate benefits to recipients and payments to providers and vendors. The division also helps ensure program compliance with federal and State law by developing policies, providing the MDHS staff with training and technical assistance, and monitoring program accuracy and integrity.

Table 2 includes key stakeholders from the Division of Economic Assistance program areas that the legacy IT systems affect in some capacity on a regular basis, as well as each stakeholders' primary responsibilities in relation to the legacy IT systems.

⁵ MDHS Annual Report, 2020

Table 2: Economic Assistance Division Key Stakeholders

Stakeholder Role	Primary Responsibilities
SNAP Staff (including DSNAP and SNAP E&T)	
Eligibility Leads and Workers	Responsible for managing client eligibility processing, processing reviews and changes in client circumstances, obtaining necessary verifications, sending notifications, corresponding with clients, performing case management, and performing other economic assistance program eligibility functions for SNAP. Workers may contact clients inquiring about eligibility for supplements or DSNAP benefits. Additionally, the Eligibility Leads and Workers use MAVERICS and JAWS systems to ensure existing clients continue to receive uninterrupted benefits and timely actions on their cases.
Supervisors	Responsible for quality control (QC) on escalated tasks, monitoring caseloads and eligibility determinations, performing data analysis for their respective staff, and reporting escalated issues/concerns to MDHS leadership. SNAP supervisors are also responsible for checking/validating re-certifications, applications, claims, changes, applications, and other documents within the system.
Directors	Direct responsibility for the organization, administration, and operation of the local emergency management function, coordinating all local government activities for disaster response and recovery.
TANF Staff	
Eligibility Leads and Workers	Responsible for determining client eligibility and case management services for TANF recipients. Workers may contact consumers inquiring about eligibility for TANF to help needy families achieve self-sufficiency. Additionally, the eligibility leads, and workers are responsible for ensuring existing clients continue to receive uninterrupted benefits and timely actions on their cases. Eligibility leads and workers use JAWS to perform eligibility and case management services.
Supervisors	Responsible for determining eligibility, providing ongoing support, guidance and direction to professional personnel, and oversees the operations of the TANF program and staff.
Providers	
Service Providers for SNAP and TANF	Provides strategy career and technical training, workforce skills training, or supportive service components for SNAP E&T recipients and TWP participants.

3.1.4 Economic Assistance County Offices

Economic Assistance County offices are available to individuals to apply for and receive economic assistance and child support assistance in person, rather than online or over the phone. County offices provide a venue for individuals to receive assistance with SNAP and TANF application processing. County office staff provide one-on-one assistance to individuals applying for economic benefits and child support assistance, conduct required interviews, and assist clients in renewing benefits.

3.1.5 Division of Early Childhood Care and Development

The Division of Early Childhood Care and Development administers the State’s Child Care and Development fund. Table 3 includes key stakeholders from Early Childhood Care and Development that the legacy IT systems affect in some capacity on a regular basis, as well as each stakeholders’ primary responsibilities in relation to the IT systems.

Table 3: Division of Early Childhood and Development Key Stakeholders

Stakeholder Role	Primary Responsibilities
Early Childhood Care and Development Staff	
Eligibility Leads and Workers	Responsible for processing applications and collecting required federal reporting data on families, children, and dollars spent on child care. Eligibility leads and workers use CCPS to process applications and re-certifications, send client and provider notifications/correspondences, track attendance, perform reporting, and perform billing functions.
Supervisors	Responsible for managing Early Childhood and Development services, determines applicant and provider eligibility, and oversees the operations of CCPP programs and staff.
Providers	
Child Care Providers	Provides child care services to CCPP participants through licensed child care centers, family child care homes, and in-home child care.

3.1.6 Division of Child Support

The Division of Child Support oversees and performs determination, enforcement, and collection of child support obligations for the state. Child Support also determines and establishes paternity, and administers Mississippi’s Access and Visitation Program (MAV-P). Table 4 on the following page includes key stakeholders from Child Support that the legacy IT systems affect in some capacity on a regular basis, as well as each stakeholders’ primary responsibilities in relation to the IT systems.

Table 4: Division of Child Support Key Stakeholders

Stakeholder Role	Primary Responsibilities
Child Support Staff	
Eligibility Leads and Workers	Responsible for managing client eligibility processing, processing reviews and changes in circumstances, obtaining necessary verifications, sending notifications, corresponding with clients, performing case management, and performing other economic assistance program eligibility functions. Eligibility leads and workers use the METSS system to perform case management, paternity establishment, locate and enforcement services, and financial management.
Supervisors	Responsible for determining client eligibility and to oversees the program operation and Child Support staff.
Contractors	
Young Williams	Responsible for enforcing child support orders across the state and collecting child support payments.

3.1.7 Division of Workforce Development and Partnership Management

The Division of Workforce Development and Partnership Management leverages federal funds to implement career and technical education programs and workforce skills training for low-income individuals. Workforce Development and Partnership Management enters into agreements with State agencies and community-based organizations across the state to provide employer-driven, career, and technical education, workforce skills training, wrap-around services, and access to career navigators to help eligible SNAP and TANF recipients be successful in the job market. The agreements authorize contracted institutions to offer employment-based training and education services to eligible participants.

3.1.8 Providers

The MDHS coordinates with a variety of other state government agencies and advisory boards, as well as provider groups that serve the State to help meet broader program objectives. The MDHS enters into agreements with approved providers and authorizes providers to offer services to eligible families and children. Each provider must meet a certain level of requirements before they are authorized to provide services to individuals and families such as licensure requirements, compliance with minimum education requirements, location requirements, and more.

To ensure program compliance with federal and State law, MDHS assigns roles to program staff to assist with training and technical assistance, and monitoring program accuracy and integrity. Examples of the roles of the enlisted programs include, but are not limited to:

- Early Childhood Academics (ECA) provides professional development for providers

- Mississippi Early Childhood Inclusion Center (MECIC) provides onsite consultation and coaching, and assists with policy revisions and compliance related to data and reports

Providers offer several services supported by MDHS, some of which include:

- Mississippi Department of Employment Security (MDES) provides case management and job placement services for TWP participants
- Community organizations and partnerships with subject matter experts across the state who deliver educational as well as employment and training for workforce development participants including providers such as Hinds Community College, Goodwill of South Mississippi, and Refill Jackson Initiative (Refill Café)
- Licensed Child Care Centers and Homes that provide care to children while parents are working or unavailable for their children
- CCPP-Approved Child Care Providers that serve children and families participating in the CCPP

In order to remain eligible for funding, the providers must comply with federal and State quality, reporting, and other established guidelines.

3.1.9 Office of Inspector General (OIG)

The OIG protects integrity, promotes excellence, provides independent oversight, and accountability within the MDHS. OIG coordinates internal audit and investigations to best identify and eliminate any potential cases of fraud or criminal activity, and is responsible for administrative hearings, internal audits, investigations, and benefit recoveries. MDHS employees and others can report fraud, waste, abuse and mismanagement, or other criminal or noncriminal misconduct through a hotline (operated by OIG) or the MDHS public-facing website. MDHS staff can also use the Client Application and Registration System (CARS) to enter fraud tips for OIG's review.

3.1.10 Office of Compliance

The Office of Compliance ensures the MDHS and MDHS employees follow the laws, regulations, standards, and ethical practices that apply to MDHS. The Office of Compliance is responsible for ensuring compliance with privacy and civil rights laws, program monitoring, QC/QA, and external affairs. The Office of Compliance also monitors sub-grantees in a partnership role with the OIG.

3.1.11 Budgets and Accounting

Budgets and Accounting is responsible for using MDHS' budgets and accounting reports to determine a solution and approach across short and long-term periods of time to avoid excessive funding requirements for any single budget year. MDHS fiscal and budgetary analysis provides the level of detail that is required for budget preparation for state personnel,

procurement costs, systems development and maintenance, etc., and allows the state to project funding requirements for the upcoming fiscal years.

3.1.12 Management Information Systems (MIS)

MIS provides information system and technical support services to the MDHS through support staff. MIS assists with reporting, managing user accounts, data management (e.g., merging/unmerging of records) and maintaining the MDHS' systems interfaces with internal and external systems. MIS is responsible for making any changes to the systems, based on the MDHS' programmatic needs. MDHS data is housed in a data center, which is co-located in the same building as the primary data center, operated by the Mississippi Department of Information Technology Services (ITS). In addition, ITS manages a secondary data center in a separate location that replicates data, although is not a true disaster recovery site.

3.1.13 ITS

ITS provides technical and operational support for the statewide telecommunications network, the central mainframe environment, and various State agency systems. These services include all MDHS applications, telecommunications routing, and security to the mainframe data repositories. In addition to the technology support services, ITS responsibilities also include all procurement activities related to statewide technology acquisitions or enhancements to existing technology.⁶

3.2 Program Environment

The following subsections provide a high-level overview of the programs supported by the MDHS legacy IT systems in scope for this assessment.

3.2.1 TANF

The TANF program is administered by the MDHS' Division of Economic Assistance as the single State agency designated by State law for eligibility determination and spending authority. TANF has one full-service office for intake and client service delivery in each county with structured supervisory and regional administrative levels. Children under 18 years of age and their parent(s) or other caretaker relative must meet all technical and financial eligibility requirements in order to qualify for a TANF benefit. Mississippi requires work-eligible individuals (adults or minor heads of household or non-recipient parents) receiving assistance under TANF to engage in allowable work activities once the State determines parents or caretakers are work eligible. Work-eligible individuals may not receive assistance under the program for more than 24 months (whether or not consecutive), unless they are engaged in allowable work program activities.⁷ All adult household members applying for TANF must meet with an MDHS caseworker, comply with Vocational Rehabilitation services, or register for employment through

⁶ <https://rfps.its.ms.gov/Procurement/rfps/3884/attachment%20bb.pdf>

⁷ Part 19 - [Effective 3/27/2020] DIVISION OF ECONOMIC ASSISTANCE TANF STATE PLAN, | Casetext Search + Citor

Mississippi Works. TANF application approval is contingent upon these requirements, although the work exemption may be granted to eligible adults.

In Mississippi, TANF monthly benefits and supportive service payments provided to individuals participating in allowable work activities or transitional programs are provided to the family by means of an EBT card. TANF supportive service payments issued to providers are paid by check, direct deposit, or by vouchers redeemable for services.

Under Mississippi House Bill 1090, The Medicaid and Human Services Transparency and Fraud Prevention Act, or “Hope” (“Act to Restore Hope Opportunity and Prosperity for Everyone”) Act, conferring Broad-Based Categorical Eligibility (BBCE) status to most benefit households is not permitted. Effective July 1, 2019, all families applying for TANF (new applications and redeterminations) are subject to an evaluation of all household resources. The resource limit is \$2,000 for all TANF households. Under Mississippi Change Reporting rules, families subject to an evaluation of resources must report if the total amount of resources exceeds the resource limit for the family.

3.2.1.1 TANF UP

TANF UP is a separate State program to serve needy two-parent families. State funds are used for cash assistance payments (TANF grant and transportation stipends). TANF UP does not count towards the State’s maintenance of effort (MOE) spending requirement.

3.2.1.2 TWP

TWP is administered by the MDHS Division of Workforce Development and Partnership Management and assists needy families achieve self-sufficiency through employment and training activities. Upon referral to TWP, a caseworker develops an Employability Development Plan (EDP). The EDP describes the responsibilities of the client and entities performing case management. The plan also describes supportive services available to the client, lists the assigned work activity, and reinforces consequences for failure to participate. TANF supportive services include child care and transportation expenses to help adults prepare for employment.⁸

The MDHS uses JAWS to manage TANF eligibility and provide case management services. TANF also uses eFITS to manage, fund, and reconcile EBT accounts and transactions. Section 3.3: Technical Environment provides detailed system information.

The MDHS reported serving 5,349 TANF clients and 2,867 TANF households for the fiscal year of 2020.⁹

⁸ Ibid

⁹ <https://www.mdhs.ms.gov/annual-reports/>

3.2.2 SNAP

SNAP is a federally funded program administered by the MDHS' Division of Economic Assistance. SNAP supplements income to low-income households to help ensure nutritional needs are met. Services offered are monthly cash benefits via an EBT card for individuals and families to access food benefits. The MDHS enters into agreements with approved benefits retailers. The agreements authorize food providers to approve purchase of food items to eligible individuals. Approved SNAP purchases may be made at over 247,600 authorized retail locations around the country, including 3,100 located across the State.¹⁰ Authorized retailers include grocery stores, participating farmers markets, and online retailers.

The MDHS uses a web application to provide clients the ability to apply for MDHS' services simultaneously (e.g., TANF, SNAP).¹¹ The MDHS determines eligibility for the SNAP applicant and issues monthly benefits. Participants must comply with all requirements of the SNAP program in order to remain eligible. The MDHS website also offers web-based resources related to the SNAP application process, resources for retailers, and SNAP fraud information. The MDHS website connects consumers and retailers to:

- Online application forms and portals for individuals, including a prescreen application
- Information about document verification for eligibility
- *MyMDHS* Online, which allows individuals to apply for benefits, clients to renew benefits, check the status of their benefits, and report household changes
- Resources for retailers
- An online search tool to locate resources for online purchases

On October 1, 2021, the MDHS increased pre-pandemic benefit levels as a result of the U.S Department of Agriculture's (USDA's) reevaluation of the Thrifty Food Plan. The MDHS is increasing benefit levels by 21% so more Mississippians have access to healthier food options and to reduce incidences of health-related issues stemming from limited access to nutritious food.¹²

SNAP uses the legacy system MAVERICS, a Statewide IT system, to manage SNAP initial and ongoing eligibility calculations and determinations. SNAP also uses eFITS to manage, fund, and reconcile EBT accounts and transactions. Detailed system information is provided in Section 3.3: Technical Environment.

¹⁰ https://www.cbpp.org/sites/default/files/atoms/files/snap_factsheet_mississippi.pdf

¹¹ <https://www.access.ms.gov/Application>

¹² <https://www.mdhs.ms.gov/snap-benefits-increase-beginning-october-1/>

SNAP serves over 421,000 individuals in Mississippi each month.¹³ The MDHS reported 440,296 clients received SNAP benefits in Mississippi during fiscal year 2020.³

3.2.2.1 DSNAP

The MDHS is the State Agency that has primary responsibility for mass care, including housing and human services, during a disaster. As such, the MDHS coordinates all State efforts to provide sheltering/temporary housing, feeding, and other human needs following a catastrophic earthquake, hurricane, or other significant disaster requiring mass care assistance. Mississippi's approach to disaster planning and response is based on the severity of the disaster established by USDA FNS three-tier protocol as follows¹⁴:

- Level I: The disaster has a very limited strike zone, limited number of victims and no need for SNAP disaster declaration. Claims for food lost due to a household misfortune can be made at local offices, if the client signs an affidavit attesting to the loss.
- Level II: The disaster has a broader strike zone, moderate number of victims but still within a well-defined geographic area. SNAP ongoing certification system is adequate but may require some modification with FNS guidance. Some program requirements are waived for disaster victims.
- Level III: The disaster damage is catastrophic with large numbers of victims from all economic strata and there is widespread destruction of businesses and residences. A Presidential Disaster Declaration often accompanies this type of disaster. There is also coordination of effort with the Federal Emergency Management Agency (FEMA), Mississippi Emergency Management Agency (MEMA), and other federal, state, and local entities focused on emergency relief. Mississippi's approach to conducting the major disaster is controlled by the Declaration of Disaster as determined either by the Governor's Office or in coordination with the Governor's Office and the sponsoring Federal Agencies.

DSNAP provides food assistance to low-income households with food loss or damage caused by disasters that fall within the definition of Levels I and II. To be eligible, DSNAP recipients must reside in a county that has been declared a federal disaster area. DSNAP clients access cash benefits with a specially designated disaster EBT card, issued to the applicant by the DSNAP application site card issuance cashier upon completion of the application process. In the event of a natural disaster, eligible counties authorize food assistance through DSNAP. Participating counties accept applications from residents affected by the disaster. Eligibility for

¹³ <https://www.mdhs.ms.gov/snap-benefits-increase-beginning-october-1>

¹⁴ USDA FNS SNAP Guidelines

DSNAP is also determined by SNAP caseworkers using DSNAP program criteria. Participants must comply with all requirements of DSNAP in order to remain eligible.

The MDHS website is used to post information of DSNAP locations, hours of operation, and information required. In addition, Regional and County MDHS offices disseminate disaster related material to best reach the affected population.¹⁵

An assessment of the technology available, based on the impact of the disaster, is made by the MDHS Executive Management to determine DSNAP systems operability. Household members' data and approved and denied applications are collected in the DSNAP eligibility system, paper applications are scanned into the WorkSite electronic file repository.

3.2.2.2 SNAP E&T

SNAP E&T is administered by MDHS' Division of Workforce Development and allows eligible SNAP recipients to access career and technical education programs and workforce skills training. SNAP E&T connects SNAP clients with work experience, short-term workforce skills training, and career/technical pathways. The Lead Agency, the MDHS, determines eligibility requirements for the SNAP E&T program. Individual eligibility for the SNAP E&T program is determined by SNAP caseworkers and community-based organizations. Participants must comply with all requirements of the SNAP E&T program in order to remain eligible.

Federal funds are leveraged by the Division of Workforce Development and Partnership Management to implement career and technical education programs and workforce skills training for low-income individuals. Workforce Development and Partnership Management enters into agreements with State agencies and community-based organizations across the State to provide employer-driven, career-technical education, workforce skills training, wrap-around services, and access to career navigators to help eligible SNAP recipients be successful in the job market. The agreements authorize contracted institutions to offer employment-based training and education services to eligible individuals.¹⁶

3.2.2.3 Skills2Work

The MDHS SNAP funding provides tuition reimbursement assistance and other support services for adult basic education, career/technical pathways and workforce skills training programs through Skills2Work. The MDHS Division of Workforce Development and Partnership Management has established Skills2Work partnerships with Mississippi community colleges and other workforce skills training partners to provide Skills2Work services to qualified SNAP recipients.

¹⁵ MDHS DSNAP Operations Plan

¹⁶ <https://www.mdhs.ms.gov/workforce-development>

The MDHS website offers web-based resources related to SNAP E&T contact information, eligibility information, and affiliated organizations. The MDHS website connects eligible individuals and organizations to:

- Information on becoming a SNAP E&T employment partner
- Online application forms and portals for multiple family-serving programs and subsidies (e.g. TANF, Head Start/Early Head Start, SNAP, Medicaid, etc.)
- Information about program standards and application requirements

The MDHS reported serving 572 SNAP E&T participants during fiscal year 2020.³

3.2.3 CCPP

The CCPP provides subsidiaries and support for the provision of child care to families receiving assistance with TANF who are:

- Homeless
- Caring for foster children
- Working poor
- Students
- Individuals with special needs

The Mississippi CCPP is administered by the Division of Early Childhood and Development within the MDHS. The CCPP provides subsidized child care to eligible Mississippi parent(s) through the issuance of certificates allowing parents to select the provider of their choice.

The State Agency, the MDHS, enters into agreements with approved child care providers. The agreements authorize the providers to offer services to eligible children and their families. Approved child care providers include, but are not limited to: (1) licensed child care centers, (2) family child care homes, and (3) in-home child care providers. The MDHS determines eligibility for the CCPP and issues payments. Individual eligibility for the CCCP is determined by TANF caseworkers and community-based organizations. Participants must comply with all requirements of the TANF program in order to remain eligible.

There are 13 Child Care Resource and Referral (CCR&R) agencies across the State staffed with early child care professionals who provide parents with consumer education materials and assist parents with locating a child care provider. All functions traditionally provided through CCR&R organizations are coordinated by the MDHS through partnerships with the Early Childhood Academy (ECA) and the Mississippi State Department of Health (DOH). The DOH has a contractual agreement with the Mississippi Community College Board to operate ECAs in

locations on community college campuses across the State. ECAs provide professional development, coaching, technical assistance, outreach, and services based on research and best practices to child care providers. The ECAs maintain CCR&Rs as the first point of entry for parents/families seeking information on programs and services ranging from workforce and family programs to high-quality child care services. ECAs also provide assistance with completing child care applications and make referrals to local MDHS county offices for those families who are interested in applying for or would like additional information about a specific program that falls under that umbrella of service (i.e., TANF, CCPP, or Healthy Families Mississippi). In addition, ECAs maintain and update resource guides annually that list all service programs targeting families.

The MDHS website offers web-based resources related to child care providers contact information, maximum enrollment, and age groups served. The MDHS also gathers child care provider data regarding supply and demand.¹⁷ The MDHS child care portal connects consumers and providers to:

- A searchable database of licensed child care providers in the State
- Online application forms and portals for multiple family-serving programs and subsidies (e.g. TANF, Head Start/Early Head Start, SNAP, Medicaid, etc.)
- Information about curriculum standards and child care licensing requirements
- Best-practice research on early childhood development and learning
- Information about how to support children’s social-emotional development and physical health
- Resources for school readiness and kindergarten transition

TANF also has an online search tool that enables parents and the general public to locate subsidy-approved providers based on a variety of search criteria, including location, provider type, care type, and quality rating.

3.2.3.1 Family Child Care Network

In FFY 2022, the MDHS will launch a Family Child Care Network that will increase the supply and skill of family child care providers. The MDHS is increasing the number of resource and referral sites from 13 to at least 18 so more technical assistance support is available to providers across the state. The MDHS expanded its methods of providing technical assistance in order to support health and safety protocols as a result of the COVID-19 pandemic, and to allow for expanded coverage in rural areas where resource and referral sites are not within 30 miles.¹⁸

¹⁷ MS-CCDF-State-Plan-2019-2021.pdf (adobe.com)

¹⁸ MDHS_State_Plan_Summary.02.pdf

The CCPP uses the CCPS—a statewide automated network to administer—process applications, and collect required federal reporting data on families, children, and dollars spent on child care. Providers must submit payment ledgers to bill for services provided (including number of days and payment rates) electronically through the CCPS. Providers submit payment ledgers once per month in one of two payment cycles. Providers receive one payment per month from the MDHS for child care services rendered.

In 2020, the CCPP served 31,605 children for the fiscal year of 2020.

3.2.4 Child Support

The Division of Child Support enforces State and federal child support laws under the MDHS. Services provided by the Child Support Program include paternity establishment, location, and enforcement services, and the obtaining and modification of court orders. Cooperation with Child Support requirements serve as a condition of TANF eligibility, and appropriate TANF cases may be referred to the Child Support Program.

The MDHS enters into law-binding agreements and support orders with custodial and noncustodial parents and law enforcement agencies. The agreements authorize the MDHS to enforce child support for impacted children. The MDHS determines eligibility for child support and issues payments. Eligible and active child support cases have access to the following services:

- Location of noncustodial parent by searching all available local, State, and federal sources
- Paternity establishment, including in-hospital paternity acknowledgment, genetic investigation, signed acknowledgment, and court action as appropriate
- Establishment of a legally enforceable child support obligation, including medical support when feasible, through court action
- Enforcement of a spousal support obligation for a spouse or former spouse who is living with the targeted children, but only if a child support obligation has been established for the custodial parents and the child support obligation is being enforced
- Enforcement of the child and/or medical support obligation by initiating appropriate enforcement actions
- Periodic review of existing child support order to determine if the child support obligation is in accordance with State guidelines for setting child support obligations, and to determine if the criterion for seeking a modification is met
- Collection of private and divorce orders through the MDHS

- Distribution of support payments in accordance with federal regulations and State-prescribed procedures

The MDHS website offers web-based resources related to parents and employers, and connects custodial parents to disbursement options such as:

- Mississippi prepaid card issued by Comerica
- Direct Deposit Authorization Agreement to personal checking account

Noncustodial parents have access to payment options such as:

- Payroll deduction
- PayNearMe locations accept cash payments. Mississippi currently has more than 25,000 trusted PayNearMe payment locations nationwide
- iPayOnline, a secure, easy method for individuals and employers to send child support payments to the MS State Disbursement Unit electronically
- Check, money order, and/or cashier's check

The MDHS website offers employers the following resource:

- iPayOnline, a secure, easy method for employers to send child support payments to the MS State Disbursement Unit electronically¹⁹

The Child Support Program uses METSS to implement Title IV-D program requirements, including an official statewide data repository for all child support case data. Detailed system information is provided in Section 3.3: Technical Environment.

In 2020, the MDHS reported 266,914 open and active child support cases.

¹⁹ Child Support – Mississippi Department of Human Service (ms.gov)

3.3 Technical Environment

3.3.1 Overview of Technical Environment

The MDHS maintains several IT systems for supporting critical State program areas, specifically SNAP—including DSNAP and SNAP E&T sub-modules—TANF, Child Support Program, and CCPP. IT systems that support these program areas were previously operational within a mainframe environment and recently converted to a Linux-based environment. Supported IT systems are as follows:

- MAVERICS: A Natural/COBOL-based system accessed via Citrix and operating on Linux servers used to manage Mississippi’s SNAP, DSNAP, and SNAP E&T participants.
- JAWS: A Natural-based system accessed via Citrix and operating on Linux servers that is used to manage TANF eligibility, and case management duties for TANF recipients.
- eFITS: A Natural-based system operating on Linux servers that is utilized to interface with State EBT systems.
- METSS: A Natural-based system operating on Linux servers that maintains data on all child support cases.
- CCPS: A Structured Query Language (SQL)-Server-based, .NET system used to manage the CCPP.

Although these IT systems offer a wide array of internal and external integrations (including a CWP—a public-facing portal for SNAP, TANF, and LIHEAP eligibility—and the *myMDHS* mobile application), each system operates and is maintained independently of each other. BerryDunn used the information from the sections below to inform the findings detailed in Section 5.2.

3.3.2 Approximate Maintenance and Support Costs

At the time of this report, the MDHS’ ability to provide detailed cost information for maintaining the legacy IT systems was limited. MDHS was able to obtain staffing-related costs for MAVERICS, JAWS, eFITS, and METSS and licenses/software costs (e.g., IBM Cognos, Software AG products, JIRA, etc.) as reflected in Table 5 on the following page. Deliverable 4: Cost Benefit Analysis will provide more detailed cost information, if available.

Table 5: Approximate Continued Maintenance and Support Costs Summary—All Systems²⁰

Cost Item	MDHS Installed Products	MAVERICS	JAWS	eFITS	METSS	CCPS
KnowledgeServices ²¹		\$X			\$X	
Annual State Personnel Costs ²²		\$X	\$X	\$X	\$X	
ITS Consultant Costs ²³						\$X
Software AG ²⁴	\$X					
Secure4/Cronus ²⁵	\$X					
TreeHouse/tcVision ²⁶	\$X					
WebMethods (Software AG) ²⁷	\$X					
Microsoft SQL ²⁸	\$X					
Micro Focus/Migrationware ²⁹	\$X					
Cronus/COSORT ³⁰	\$X					

20 Limited systems maintenance and support costs were available at the time this report was developed. Please reference constraint #5 in Section 2.4.2.

21 Does not include costs allocated towards JAWS and eFITS

22 Mississippi State Personnel Board (MSPB) Data, 2021, includes salary and fringe

23 Total consultant costs for 2021; MDHS ECCD Spreadsheet, November 2021

24 Annual Contract maintenance costs for the following: ADABAS 6.5.1, 6.7.1; (In testing) Natural 8.3.8, 8.4.1 (In user for ApplinX), 9.1.2 (in Testing); Natural One (Windows Eclipse); Natural IDL Generator 8.2.0; Natural Development Server 8.3.8; Natural Security 8.3.8; Predict 8.3, 8.4 (In Testing); Construct 8.2.2; Natural Development Server, 8.3.8, 8.4.1, 9.1.2; SQL Gateway (CONNX) with Infonaut; MDHS Installed Products report, November 2021

25 Annual contract maintenance costs as part of the Master Agreement; MDHS Installed Products report, November 2021

26 Annual contract maintenance costs; MDHS Installed Products report, November 2021

27 Annual Contract maintenance costs for the following: Integration Server; Active Transfer; Mash Zone; ApplinX; EntireX; Command Central; Service Designer ; MDHS Installed Products report, November 2021

28 Annual Contract maintenance costs for SQL utilities for Open Systems; MDHS Installed Products report, November 2021

29 Annual Contract maintenance costs for SQL utilities for COBOL, COBOL Enterprise, COBOL development Environment (Eclipse); MDHS Installed Products report, November 2021

30 Annual Contract maintenance as part of the Cronus Master Agreement for ESPConnect (Con-nect Main Menu); EspBatch (Job Scheduler); EspMenu (Menu Administration); XI-TEXT; Conform; Connect; MDHS Installed Products report, November 2021

Cost Item	MDHS Installed Products	MAVERICS	JAWS	eFITS	METSS	CCPS
JIRA ³¹	\$X					
GitLab/Fierce Software ³²	\$X					
Power BI ³³	\$X					
Cognos ³⁴	\$X					
ITS MDHS VPN ³⁵						\$X

3.3.3 MAVERICS

MAVERICS has been in use for over 30 years and is the statewide IT system utilized to manage initial and ongoing eligibility calculations and determinations for SNAP, including DSNAP and SNAP E&T.

Converted from a mainframe environment, MAVERICS is a Natural and COBOL-based solution utilizing an adaptable database system (Adabas) framework within a Linux environment.

MAVERICS integrates with eFITS, METSS, and JAWS. In addition, MAVERICS is integrated with or used alongside several other in-scope solutions, including:

- **Case Review System (CRS):** An in-house .NET, SQL Server system that provides access to cases for review. Information is populated via MAVERICS utilizing batch processing. Security for CRS is managed within the MAVERICS security tables.
- **CARS:** An in-house .NET, SQL Server system that populates client application data via the Common Web Portal. Caseworkers manually review information in CARS for entry into MAVERICS. A web-services-based integration will be built in 2021 to transfer information from CARS to MAVERICS. Like CRS, security for CARS is managed within the MAVERICS security tables.
- **SNAPME:** An Angular-based .NET single-page application that provides users with read-only access to supervisory and reviewer reports and dashboards.

³¹ Annual Contract maintenance ticketing system; MDHS Installed Products report, November 2021

³² Annual Contract maintenance version control system; MDHS Installed Products report, November 2021

³³ Annual Contract maintenance for reporting systems; MDHS Installed Products report, November 2021

³⁴ Annual Contract maintenance for reporting systems; MDHS Installed Products report, November 2021

³⁵ ITS MDHS VPN split cost for ECCD Total for 2021, MDHS ECCD Spreadsheet, November 2021

- SNAP Claims: The Monitoring and Administrative Hearing Team uses an in-house Adabas claims database. SNAP Claims uses both COBOL and Natural for overnight batch processing between SNAP claims and MAVERICS to review SNAP claims.
- iManage: A third-party document management system (formerly owned by Hewlett Packard) managed by BCS that stores reports from jobs run in MAVERICS. The system is heavily utilized by the MDHS and delivers reports to a user's inbox, manages alerts, and also leverages dashboard functionality. iManage notifies workers when actions are needed on a case and integrates with MAVERICS, JAWS and METSS.

County users' access MAVERICS via Citrix, with authentication established via Active Directory. MAVERICS-specific, role-based security grants access to system menus based on division and job occupation. MAVERICS is a menu-driven application that leverages hotkeys (as opposed to more modern drop-down menus and pick-lists) to not only enter data, but to navigate from screen to screen. As a result, users often launch multiple instances of MAVERICS, with one instance used as a data entry tool, and another used for reference since the application lacks intuitive navigation between pages. In addition, users still rely on paper-based forms to manage caseloads and work tasks.

County workers have employed a wide array of workarounds to accommodate the system usability limitations. While MAVERICS is functional, the general consensus from stakeholders is that an updated user interface and underlying technology architecture would help maximize user efficiencies. Table 6 provides a summary of MAVERICS.

Table 6: MAVERICS Summary

Item	Description
Number of Users	Approximately 1,000
Technology	Linux environment employing an Adabas Framework. Languages utilized include Natural 8.3.8 and COBOL (Citrix-based) Authentication through Active Directory
Affiliated Systems and Interfaces	eFITS; METSS; JAWS; JSCAPE Portal; <i>myMDHS</i> ; CARS; CRS; iManage; Gen+; SNAPME; SNAP Claims; Social Security Administration (SSA); Department of Education; National Accuracy Clearinghouse LexisNexis; Office of Child Support Enforcement; Electronic Disqualification Recipient System/FNS; Public Assistance Reporting Information System; Department of Rehabilitation; MS Department of Employment Security
Known Support Issues	<ul style="list-style-type: none"> • Technical resources with COBOL expertise are scarce and expensive • Menu-driven, no ability to use drop-down lists and relies on the user to memorize codes, keep hard copy “cheat sheets” available or copy/paste from other electronic documents • Heavy reliance on paper forms to manage caseloads • Cumbersome to use, workers often keep multiple instances of MAVERICS running at one time and rely on memorization of menu codes to swiftly navigate through the system • Relies on memorization of codes • Multiple systems (CARS, CRS, etc.) utilize separate underlying code bases. Ideally would be folded into a single solution as an extension of MAVERICS • CARS does not utilize an optimal workflow as workers have no way of knowing which types of applications are next as they navigate through their pending applications

3.3.4 JAWS

JAWS has existed for over 20 years and is the statewide IT system used to manage TANF eligibility and TWP case management services. Primary individuals of participating households are required to participate in TWP, which seeks to assist with work skills training and job interviews, with the goal of obtaining gainful employment.

JAWS is a Natural-based solution utilizing an Adabas framework within a Linux environment that was previously converted from a mainframe environment. JAWS is tightly coupled with MAVERICS, utilizing the same hotkeys for navigation through the menu-driven system. The intake process originates in MAVERICS, which populates JAWS through an interface. JAWS assists with managing:

- Eligibility determination

- Tracking of activities and other case management functions
- Client notices

JAWS relies on legacy technology, which hampers scalability and system improvements. Its user interfaces are outdated and cumbersome. While the model relies on access to data from MAVERICS provided through interfaces, the data is imported via batches (rather than real-time), which often impacts its utility to workers using JAWS. Challenges with interfaces sometimes impact timeliness of processing TWP tasks. Table 7 provides a summary of JAWS.

Table 7: JAWS Summary

Item	Description
Number of Users	50 concurrent
Technology	Linux environment employing an Adabas Framework. Languages utilized include Natural 8.3.8. Citrix.
Affiliated Systems and Interfaces	MAVERICS; eFITS; METSS; WIOA portal; iManage
Known Support Issues	<ul style="list-style-type: none"> • No workflow embedded into system, and system relies on experience of user for proper navigation • While the interface between MAVERICS and JAWS works well, data quality is lacking for others • Manual alerts create “alert fatigue” • Lack of ability to manually manage duplicate records—results in help desk ticket submission to resolve

3.3.5 eFITS

The eFITS IT system is over 15 years old, is written in Natural, and runs within a Linux environment employing an Adabas framework. It is the statewide IT system responsible for interfacing with the State’s EBT contractor systems. eFITS provides deposits to a client’s cash benefit debit card from multiple programs and reconciles benefit usage. eFITS integrates with all the MDHS legacy systems including MAVERICS, JAWS, METSS, and CCPS. Using nightly processing, eFITS relies upon several methods for data transfer, including direct database access, Secure File Transfer Protocol (SFTP), and batch exchanges.

eFITS is directly accessed by five financial staff users to access a breakdown of client financial and benefit information. Aside from the legacy technology, there are no articulated gaps in system functionality for eFITS. Since outside contractors are used for the configuration and administration of eFITS, there is a lack of experience with the management of the eFITS IT system. Table 8 on the following page provides a summary of eFITS.

Table 8: eFITS Summary

Item	Description
Number of Users	5
Technology	Linux environment employing an Adabas Framework. Languages utilized include Natural 8.3.8.
Affiliated Systems and Interfaces	MAVERICS; METSS; JAWS; CCPS; MACWIS; Conduent (EPPIC); IRS; Regions Bank; FNS; iManage
Known Support Issues	<ul style="list-style-type: none"> • The eFITS IT system as successfully tested a bi-directional interface with MAVERICS; all others are unidirectional • Lack of experience on staff with managing eFITS—consultants currently utilized

3.3.6 METSS

METSS is the statewide Child Support Enforcement (CSE) system used to support the Title IV-D program for the State. METSS is over 20 years old and is OCSE-certified. METSS currently meets all federal OCSE requirements and supports all core CSE functions for the State, including:

- Case initiation (intake)
- Paternity establishment
- Locate
- Case management/case closure
- Enforcement remedies
- Financial management

METSS leverages numerous interfaces to gather information for locating noncustodial parents, processing new hires, enforcing license suspensions, and intercepting financial assets to recover nonpayment of child support. METSS is written in Natural and operates within a Linux environment. METSS is screen-driven, where users must collect specific information on certain screens in order to continue navigating through the system.

Role-based security grants access to the application based on job description. Users are given multiple roles, which determine the screens they can view and update. Security access is managed by the MDHS Security Unit, which manages security for all systems.

Reports are generated and distributed using the iManage solution. Numerous users also leverage International Business Machines (IBM®) Cognos for nightly and reporting against

METSS data. The MDHS is currently in the early stages of transitioning from Cognos to the Microsoft Power BI analytics solution. Table 9 provides a summary of METSS.

Table 9: METSS Summary

Item	Description
Number of Users	1,600
Technology	Linux environment employing an Adabas Framework. Languages utilized include Natural 8.3.8.
Affiliated Systems and Interfaces	MAVERICS; eFITS; JAWS; FCR/FPLS, NDNH, SDNH, CSENet, MCTS, State Tax Intercepts; DOH, Medicaid, Public Safety, Credit Reporting Agencies, Employment Security, AOC, MARS, MACWIS, Regions Bank, OCY; iManage; IBM® Cognos; Bills & Notices Website; Foster Care
Known Support Issues	<ul style="list-style-type: none"> • Lack of bi-directional integration results in data silos with differing information (e.g., case status differs within systems) • Duplication of statistics on federal reporting • Leverages the MPI, but only for financial disbursement • IBM® Cognos environment is reaching end-of-life and is in the early process of being transitioning to Microsoft's Power BI analytics solution. • Lack of ability to create ad hoc reports against METSS data

3.3.7 CCPS

CCPS is maintained by the Department of Information Technology Services (ITS). It was developed using .NET and uses a MS SQL Server database platform. The system leverages several interfaces to other data systems in the ecosystem and is tied to a public-facing web portal through which parents can apply for the program, add children to their records, and request a redetermination of eligibility. A provider-facing portal enables providers to report attendance and bill for services. The public-facing and provider-facing portals leverage SmartSheets technology, which may limit scalability. CCPS is linked through interfaces to several other State systems, most commonly using nightly batches, though some are real-time (e.g., address verification and payment data).

CCPS helps successfully manage several functions and workflows critical to operation of the CCPP, including:

- Application processing
- Re-certifications
- Modifications (e.g., adding children)
- Provider selections
- Client and Provider Notifications/Correspondences

- Retrieval of authorizations
- Attendance reporting/billing
- Document management
- Syncing with other State systems, including the child care licensing system (LARS), CSE system (METSS), JAWS, and several others

CCPS is generally viewed by users as working well and is more modern than several other systems used within the MDHS. CCPS supports approximately 6,000 monthly applications (including re-certifications), 19,000 active parental enrollments, and 1,400 providers statewide.

Future-state aspirations include mobile applications and expanded interfaces to additional systems to make more data accessible to State staff directly through the system, such as a child care workforce registry. Table 10 provides a summary of CCPS.

Table 10: CCPS Summary

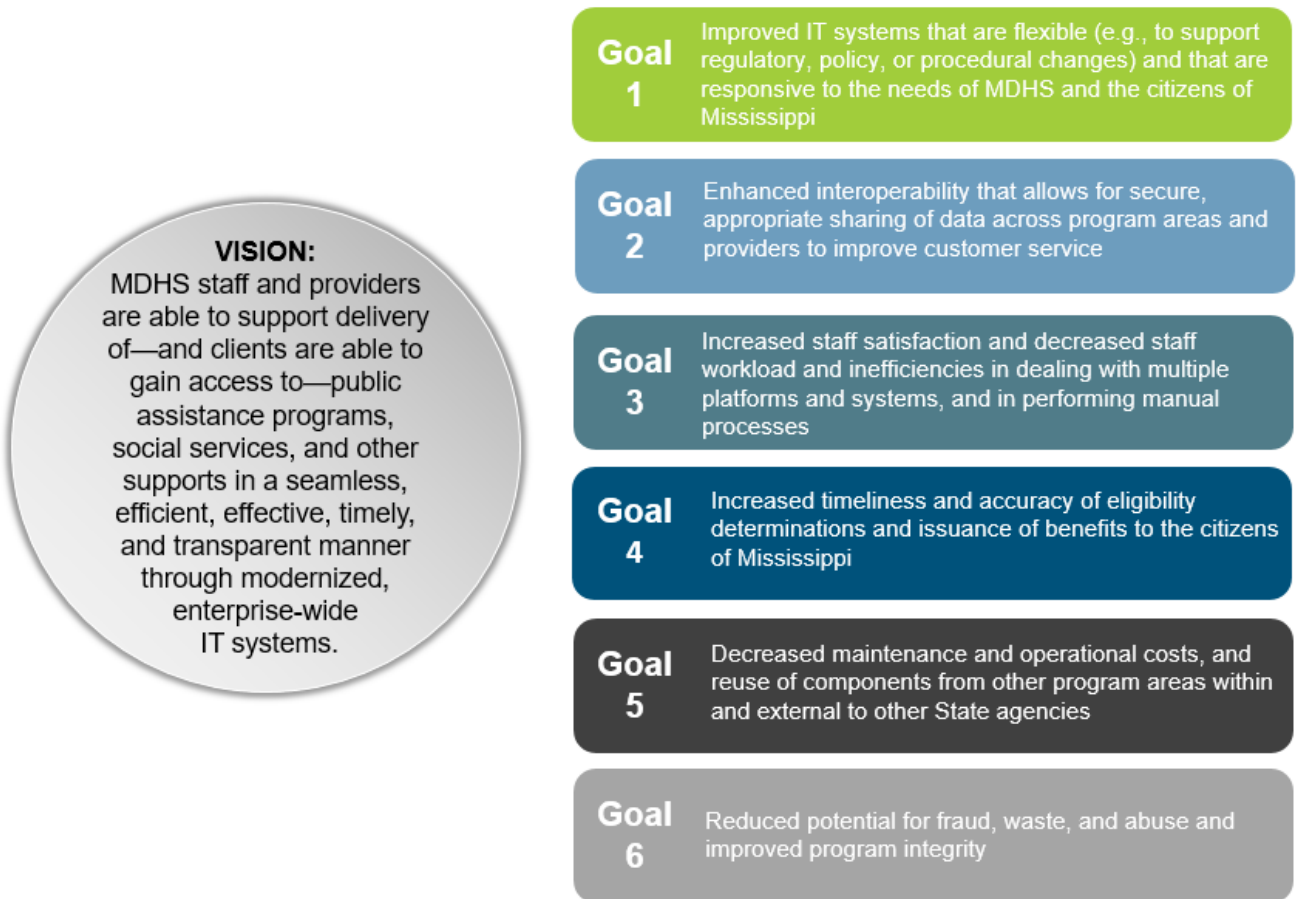
Item	Description
Number of Users	Currently 75 State staff users; Scalable to 798 concurrent users
Technology	MS .NET, SQL Server
Affiliated Systems and Interfaces	SmartSheets web portal; integration to LARS – Licensing & Inspection System (DOH); Other MDHS Systems: MAVERICS, JAWS, MACWIS, MELISSA data, USPS Postal ZIP Code; REGIONS, MDHS: Payment interface, OIG, Fraud, Recoupments
Known Support Issues	ITS does not have an MDHS/MIS technical support counterpart

4.0 Desired Future Environment

In support of the MDHS’ mission of promoting self-sufficiency and personal responsibility for all Mississippians, the MDHS envisions modernized, enterprise-wide systems that support the delivery of public assistance programs, social services, and other supports in a more efficient, effective, and timely manner.

Figure 4 provides the project vision and goals established by the MDHS leadership.

Figure 4: Project Vision and Goals



BerryDunn and the MDHS will revisit and update the desired future environment throughout the project to help ensure that BerryDunn provides recommendations and MDHS makes decisions based on the most current project vision and goals.

5.0 Assessment Findings

5.1 Overview of Findings

BerryDunn used information gathered from discovery and requirements work sessions to provide a detailed description of several key strengths and challenges with the legacy IT systems.

Overall, the underlying technical infrastructure and current functionality of the legacy IT systems, as well as ongoing technical support issues, negatively impact the long-term viability of the legacy IT systems to support MDHS' program areas and present several challenges, including:

- **Strain on current IT resources to maintain and enhance the environment:** Upgrades occur during allowable Sundays, but roll-back can be extremely difficult and time-consuming when problems are encountered. The MDHS IT staff must deal with multiple platforms and programming languages to make changes in the current IT systems. Due to the time involved in making these modifications, the MDHS often must establish manual processes and/or new stand-alone IT systems to implement regulatory, policy, or procedural changes.
- **Cost and availability of experienced resources:** Technical resources who have experience with the Natural and COBOL programming language are scarce, generally expensive, and often unavailable.
- **Strain on users:** Users must log in to multiple IT systems, maintain multiple sets of credentials, and navigate through multiple menu-driven screens. Users routinely enter redundant data into more than one system, creating an opportunity for data errors and causing inefficient use of staff time and resources.
- **Complex user management:** While some solutions leverage Active Directory to authenticate, other applications maintain their own ID and passwords. With limited or no single sign-on (SSO) capabilities, users can have difficulty maintaining their accounts and often have to reach out to the Help Desk for assistance with routine credentials and management requests.
- **Heavy Reliance on Citrix Connectivity:** Both MAVERICS and JAWS utilize Citrix, with routinely 650-680 Citrix sessions per day. Citrix has been plagued with performance issues that appear during peak times of usage, negatively impacting user productivity.
- **Lack of scalability and robustness of environment:** The current environment, although monitored, is not optimized for scale, nor is it load-balanced, often resulting in performance degradation when peak volume is reached. In addition, several databases are all used within the single environment, including Training, QA, and Help Desk, contributing to performance issues. In addition, applications run on a single server, which can further complicate the application delivery process.

- **Redundancy, disaster recovery, and general backup management:** While the MDHS does employ redundancy in some hardware servers, areas for improvement exist. There is currently no duplicate data center for disaster recovery. The MDHS used DRAAS, but has opted to discontinue this. In addition, general backups are run as part of a batch process, and full backups, as opposed to incremental backups, are generated nightly, contributing to further strain on performance and system usability. Storage is currently managed by EMC Storage Solutions.
- **Inconsistency in federal compliance, including security:** Since each legacy IT system utilizes unique code bases, they are often at different stages of federal compliance. The MDHS seeks to modernize its IT systems to verify compliance with federal security and programmatic standards across programs, including IRS-1075 and NIST-800-53 Rev. 5.
- **Lack of accessibility on modern, mobile devices:** Legacy IT systems are not accessible via mobile devices, including Android or iOS. While the MDHS has initiated the use MS Intune for Enterprise Mobility Management, State systems are not accessible on such devices due to the underlying architecture and technology of legacy IT systems.
- **Lack of data governance model:** The MDHS recognizes that a lack of data governance has a direct impact on data quality. Although an MPI exists, it is only used for disbursement of child support payments. A general MDM architecture does not currently exist, resulting in data duplication and data entry redundancy between programs.
- **Interoperability challenges:** To support programmatic needs, legacy IT systems are heavily dependent on IT system interoperability. Overall, interoperability efforts have been successful, e.g., the MDHS recently implemented an in-house Enterprise Service Bus to integrate solutions, including from the legacy IT systems to the CWP. However, the majority of interfaces use batch processes with few real-time exchanges, impacting timeliness of access to benefits and receipt of services. In addition, data quality between system integrations and process integrations are not consistent.

BerryDunn categorized each finding related to strengths and challenges within the MDHS current technical environment into the assessment areas defined in Table 11 on the following page.

Table 11: Assessment Areas

Assessment Area	Description
1.0 System Maintenance and General Support	System maintenance requirements and support resources needed
2.0 Interoperability	Ability to facilitate, standardize, streamline, manage, and audit the exchange of secure data between external systems
3.0 Reporting and Data Analytics	Reporting: Ability to compile, organize, and format results of database queries to present useful data for decision-making and analysis Analytics: Ability to interpret data in order to gain meaningful insights to improve business and program performance.
4.0 Data Management	Ability to collect, validate, store, protect, and process data to help ensure it is accessible, reliable, and timely for its intended users
5.0 Usability	Ability to meet or exceed expectations of user friendliness, understandability, system performance, and ease of use
6.0 Workflow Management	Ability to automate and monitor pre-defined processes and activities that benefit system users

5.2 Detailed Findings

Table 12 provides detailed findings, including the programs and IT systems impacted by each finding. For findings that could fall into multiple assessment areas, BerryDunn categorized the finding based on the core functionality of the finding. An alphanumeric ID denotes each finding as a strength (S) or challenge (C).

Table 12: Detailed Findings

Finding	Impact	
	Program(s)	IT System(s)
1.0 System Maintenance and General Support		
1.1S: OCSE Compliance The system supports all core CSE functions for the State and is OCSE compliant.	<ul style="list-style-type: none"> Child Support 	<ul style="list-style-type: none"> METSS
1.1C: Legacy Systems Impact on Support Staff – Client Merges Support staff must manually merge duplicate client records after a duplicate record is identified and requested by a user. This process is time-consuming for support staff, and the delays in merges create data inconsistencies.	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> All

Finding	Impact	
	Program(s)	IT System(s)
<p>1.2C: Legacy Systems Impact on Support Staff – User Credentials</p> <p>Due to lack of user-facing credential management tools, support staff must handle all account requests, including password resets. Users cannot perform basic user management functions such as password resets for themselves and the process is overly burdensome on both users and support staff.</p>	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> All
<p>1.3C: System Performance and Scalability</p> <p>Performance degradation occurs during peak usage which causes timer interrupts, sporadic resets, general performance issues, and effects usability.</p>	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> All
<p>1.4C: Backups</p> <p>The systems require full backups, which are time-consuming and can cause system degradation--as opposed to smaller, faster incremental backups.</p>	<ul style="list-style-type: none"> SNAP SNAP E&T DSNAP TANF TWP Child Support 	<ul style="list-style-type: none"> MAVERICS JAWS METSS
<p>1.5C: System Resources</p> <p>Different modules use various code sets. Modules use legacy programming languages and resources with experience in COBOL and Natural/Adabas are scarce and expensive.</p>	<ul style="list-style-type: none"> SNAP SNAP E&T DSNAP TANF TWP Child Support 	<ul style="list-style-type: none"> MAVERICS JAWS METSS
<p>1.6C: System Maintenance and Updates</p> <p>Legacy programming languages and the system environment make installation of maintenance updates (including rollbacks) difficult and time-consuming.</p>	<ul style="list-style-type: none"> SNAP SNAP E&T DSNAP TANF TWP Child Support 	<ul style="list-style-type: none"> MAVERICS JAWS METSS
<p>1.7C: Federal Compliance</p> <p>Legacy IT systems do not comply with all federal and State security regulations. Current systems are not certified as FedRamp Moderate compliant.</p>	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> All
<p>2.0 Interoperability</p>		

Finding	Impact	
	Program(s)	IT System(s)
<p>2.1S: Existing MAVERICS and JAWS Interfaces are Stable</p> <p>Interfaces with MAVERICS, JAWS, Social Security, New Hire, Corrections Divisions, and iManage work well.</p>	<ul style="list-style-type: none"> • SNAP • SNAP E&T • TANF • TWP 	<ul style="list-style-type: none"> • MAVERICS • CCPS • JAWS
<p>2.2S: Existing METSS Interfaces are Stable</p> <p>METSS effectively leverages a high number of interfaces to gather information for locating non-custodial parents, processing new hires, enforcing license suspensions, and intercepting financial assets to cover non-payment of child support.</p>	<ul style="list-style-type: none"> • Child Support 	<ul style="list-style-type: none"> • METSS
<p>2.3S: Existing DOH LARS Systems Interfaces are Stable</p> <p>DOH LARS and JAWS interfaces work well to support CCPS program functionality.</p>	<ul style="list-style-type: none"> • CCPP 	<ul style="list-style-type: none"> • JAWS • CCPS
<p>2.4S: The CWP is Effective</p> <p>The MDHS CWP provides public access to apply for SNAP and TANF and directly integrates with CARS.</p>	<ul style="list-style-type: none"> • SNAP • TANF 	<ul style="list-style-type: none"> • MAVERICS
<p>2.1C: Real-Time Data Integration is Nonexistent</p> <p>MAVERICS and JAWS data integration is performed in nightly batch files; therefore, changes to—and verification of—client information is delayed.</p>	<ul style="list-style-type: none"> • SNAP • SNAP E&T • DSNAP • TANF • TWP 	<ul style="list-style-type: none"> • MAVERICS • JAWS
<p>2.2C: Missing Interfaces</p> <p>Key interfaces do not exist, e.g., with FNS, DOH, and Medicaid. There are no internal interfaces from CARS to MAVERICS. As a result, users often operate with multiple screens open at once, duplicating data entry and increasing chances of error.</p>	<ul style="list-style-type: none"> • SNAP • SNAP E&T • DSNAP • TANF • TWP 	<ul style="list-style-type: none"> • MAVERICS • JAWS
3.0 Reporting and Analytics		
<p>3.1S: QC Samples</p> <p>The randomized selection of QC samples works well.</p>	<ul style="list-style-type: none"> • SNAP 	<ul style="list-style-type: none"> • MAVERICS
<p>3.1C: Reporting Across Data Silos</p> <p>Due to the lack of a unified MPI and data governance policies, producing accurate reports across programs/divisions can be a challenge.</p>	<ul style="list-style-type: none"> • All 	<ul style="list-style-type: none"> • All

Finding	Impact	
	Program(s)	IT System(s)
<p>3.2C: Limited Ad Hoc Reporting</p> <p>Reports are designed against MDHS data sources using Cognos and results are offered to users through the iManage application. Users do not have access to the data to customize reports as needed without going through a report request.</p>	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> All
<p>3.4C: Machine Learning</p> <p>The current technical architecture does not leverage machine learning platforms and languages, limiting the ability for predictive reports and trend analysis, including the detection and identification of potential fraud, waste, and abuse.</p>	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> All
4.0 Data Management		
<p>4.1C: Data and System Redundancy</p> <p>While the MDHS does have access to data backups should a disaster occur, a robust disaster recovery architecture does not exist. The current backup processes utilize a slow connection with high latency resulting in performance degradation that impacts users. Cloud backup options also available to the MDHS use slow, unstable connections. The MDHS had worked with a DRAAS vendor, but has opted to discontinue. The MDHS employs redundancy on some, but not all, hardware servers. As a result, it would be a laborious and time-consuming process to re-build a working environment to recover from an outage or disaster.</p>	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> All
<p>4.2C: Inconsistent Data Quality for Referrals</p> <p>Client demographic data varies based on the interface source; as a result, referrals are not received consistently.</p>	<ul style="list-style-type: none"> SNAP E&T Child Support 	<ul style="list-style-type: none"> JAWS METSS
<p>4.3C: Manual Data Entry</p> <p>Users must manually enter data into the systems from printed/hardcopy reports due to lack of real-time updates. This increases risk of data entry errors and duplication.</p>	<ul style="list-style-type: none"> SNAP SNAP E&T DSNAP TANF TWP 	<ul style="list-style-type: none"> MAVERICS JAWS

Finding	Impact	
	Program(s)	IT System(s)
<p>4.4C: Data Quality</p> <p>Information across systems is siloed and disaggregated. There is a lack of data completeness (e.g., Fraud Tip feature) and differing quality between data collected via integration. Lack of a universal parent record, coupled with manual data entry processes, result in limited protection against duplicate records. Lack of real-time integration causes a lag time for updates to records and directly affects data integrity.</p>	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> All
<p>4.5C: Notice Generation</p> <p>A page limitation when printing notices exists. A streamlined way of generating notices on demand is needed.</p>	<ul style="list-style-type: none"> SNAP SNAP E&T DSNAP TANF TWP Child Support 	<ul style="list-style-type: none"> MAVERICS JAWS METSS
<p>4.6C: Data Quality Impedes the Ability to Measure and Monitor Performance</p> <p>A lack of automated data validation, the existence of data silos, and a lack of general data governance inhibits performance monitoring and accurate, trusted performance measurement and reporting.</p>	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> All
5.0 Usability		
<p>5.1S: Document Storage</p> <p>QC Case Reviewer has the ability to add documentation to case reports as needed as attachments.</p>	<ul style="list-style-type: none"> SNAP 	<ul style="list-style-type: none"> MAVERICS
<p>5.2S: Hotkeys</p> <p>Hotkeys utilized between MAVERICS and JAWS expedite data entry.</p>	<ul style="list-style-type: none"> SNAP SNAP E&T DSNAP TANF TWP 	<ul style="list-style-type: none"> MAVERICS JAWS
<p>5.1C: Limited Functionality of Mobile Application</p> <p>Mobile application has limited functionality and is used to view case notes but does not directly share data with all modules.</p>	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> All

Finding	Impact	
	Program(s)	IT System(s)
<p>5.2C: User Interface</p> <p>A graphical, easy-to-use user interface across modules does not exist. Disparate systems are largely menu-driven and rely on user memorization of menu commands, multiple identical sessions opened at one time, and the printing of documentation to help navigate through the system. This often results in incorrect data entry or other errors that are difficult to catch.</p>	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> All
<p>5.3C: SSO</p> <p>Because an SSO does not exist across all systems, user identity and password management is cumbersome and burdensome on support staff. Users must maintain different user accounts (e.g., user IDs and passwords) and separately log into each system to perform their work.</p>	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> All
<p>5.4C: Reliance on Paper Forms</p> <p>In lieu of automated system alerts, dashboards, or intuitive reporting, county workers often rely on paper printouts to manage their workload.</p>	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> All
6.0 Workflow Management		
<p>6.1S: Provider Portal</p> <p>The provider portal works effectively to track attendance and manage billing.</p>	<ul style="list-style-type: none"> CCPP 	<ul style="list-style-type: none"> CCPS
<p>6.2S: Parent Portal</p> <p>The parent portal works effectively to allow parents to apply for services and redeterminations, report the addition of a child, and update general information.</p>	<ul style="list-style-type: none"> CCPP 	<ul style="list-style-type: none"> CCPS
<p>6.1C: Data Transparency</p> <p>There is a lack of data transparency for operational support, including access to case workers appointment types, which makes it difficult to schedule re-certification interviews and research appointments.</p>	<ul style="list-style-type: none"> SNAP SNAP E&T DSNAP TANF TWP 	<ul style="list-style-type: none"> MAVERICS JAWS

Finding	Impact	
	Program(s)	IT System(s)
<p>6.2C: Alert Limitations</p> <p>Many of the IT system alerts are not automated. The IT system ranks alerts in chronological order based on when the alert is generated and lacks the ability to prioritize alerts. Alerts have a 32 character limit on text.</p>	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> All
<p>6.3C: Manual Workflows</p> <p>Menu-driven screens require memorization and education of users in order to ensure a proper workflow is followed. The use of paper forms with client information, as well as system-related “cheat sheets”, creates increased strain on workers, increases the risk of errors, and creates the potential for security/privacy incidents or breaches.</p>	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> All
<p>6.4C: Manual Case Review</p> <p>The case review process is manual and menu-driven, making it time-consuming to complete. This negatively impacting workloads and directly affects timeliness standards.</p>	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> All
<p>6.5C: Limited QC Functionality</p> <p>The legacy IT system does not fully support QC processes and has limited functionality. The QC process is extremely time consuming to complete and does not allow case reviews to be completed in the timeframes required to comply with federal and State regulations.</p>	<ul style="list-style-type: none"> SNAP 	<ul style="list-style-type: none"> MAVERICS

6.0 Functional and Technical Requirements

Appendix C: RTM enumerates the detailed functional and technical requirements for the modernized IT solution. BerryDunn developed the requirements by reviewing background documentation provided by the MDHS team, gathering information in facilitated discovery and requirements work sessions with MDHS program and systems' stakeholders, and reviewing requirements for potential gaps based on similar procurements from other states and federal laws, standards, and guidelines.

The requirements in the RTM are mapped to applicable program areas (e.g.; SNAP, TANF, CCPP, etc.) to assist with activities such as cost allocation and IT solution design and implementation. In addition, the RTM provides columns for vendors to complete in response to a RFP for a modernized IT solution, (e.g., indicating if their proposed solution will meet the requirement and if the requirement will be met natively or through configuration and/or custom coding, etc.).

Requirements are grouped into business areas to help with organization; however, some functional requirements might be applicable to multiple business areas. Table 13 defines each of the business areas within the RTM.

Table 13: RTM Business Areas

Business Area	Description
General	This business area addresses general capabilities needed across human services programs (e.g., alerts, store and retrieve documents, etc.)
Client Management	This business area addresses managing client information and managing communications and outreach with clients.
Eligibility and Enrollment (Client)	This business area addresses determining client eligibility and enrolling and disenrolling clients in programs and services.
Service Management	This business area addresses identifying client needs, providing appropriate services, and monitoring and managing client status/outcomes.
Eligibility and Enrollment (Provider)	This business area addresses eligibility determination and enrollment for human services providers (e.g., Child Care).
Provider Management	This business area addresses maintaining information on providers, (especially their performance and certification), and communicating with the provider community.
Financial Management	This business area addresses payments and receivables and “owns” all information associated with service payment and receivables.
Performance Management	This business area addresses compliance management, performance evaluation, reporting.

Business Area	Description
Business Relationship Management	This business area addresses the standards for interoperability between agencies and partners.
Operations Management	This business area addresses managing case workloads and related support.
Legal Management	This business area addresses legal processes related to establishment, modification, and removal of court orders, including generation of legal documents. It also contains other supporting legal processes that address program-related requirements, such as paternity establishment and acknowledgment.
Enforcement Management	This business area addresses processes related to enforce payment of child support obligations, including income withholding, unemployment compensation, financial asset seizure, and license suspension. It also contains processes to enforce health insurance coverage for children.
Technical	This business area addresses technical requirements, such as security, architecture, and performance.

7.0 Other Considerations

In addition to modernizing its legacy IT systems, BerryDunn recommends the MDHS consider the following high-level actions to address several findings and prepare stakeholders for successful implementation of the modernized IT solution.

- Develop a framework to govern the use, accessibility, and security of data across all programs by initiating a formal data governance team. The team should define, implement, and oversee the MDHS data governance policies, processes, and procedures to help ensure data quality, security, and accuracy.
- Update the MDHS technology plan to reflect future MDHS systems' operations with an integrated system, including QA (related to initial design and requirements definition) and testing processes, roles and responsibilities, tools used, and documentation developed.
- Establish an ongoing M&O governance structure and processes for communications, decision-making, oversight of the IT solution vendor, and collaboration with system architecture and data governance teams.
- Centralize the financial management of IT assets to better allocate budgets, track M&O costs, and inform funding requests.
- Engage other State departments and/or other providers to discuss the improvement of interoperability prior to issuing an RFP to ensure all relevant stakeholders have buy-in and are informed.
- Perform an organizational change readiness assessment and develop and implement an OCM plan to build buy-in and otherwise prepare MDHS stakeholders for upcoming changes (e.g., business process changes) resulting from implementation of the modernized IT solution.
- Redesign business processes to maximize the return on investment and achieve intended project goals prior to the DDI of the modernized IT solution.
- Assess impact to State policies and begin developing and documenting policy changes to reflect future MDHS operations with a modernized IT solution.
- Develop a funding optimization plan—including appropriately maximizing FFP for both DDI and M&O costs—for the modernized IT solution.

8.0 Next Steps

After the Legacy Systems Assessment Report is finalized, BerryDunn will conduct an analysis of several potential IT solution alternatives available to help MDHS achieve its project vision and goals. BerryDunn will evaluate each alternative against agreed upon criteria.

Table 14 provides a summary of the alternatives the MDHS has identified to include in the alternatives analysis.

Table 14: Summary of Alternatives

Alternative	Description
Alternative 1: Status Quo	No major changes to existing systems
Alternative 2: Enhancements to Existing Solution Architecture	Upgrade or enhance existing systems
Alternative 3: New Development	Custom build
Alternative 4: Commercial off-the-Shelf (COTS) Solution	Incremental replacement using primarily third-party COTS solution
Alternative 5: Transfer Solution	Transfer and minimal modification of a solution from another state
Alternative 6: Enterprise-Wide System Framework	A combination of integrated technology functionalities designed to support enterprise-class integration initiatives

Table 15 provides the analysis criteria that the MDHS has selected for BerryDunn to use during the alternatives analysis. The criteria was developed with the MDHS strategic business and technical goals in mind (e.g., improving worker efficiency, enterprise adaptability using open standards, improving accessibility and mobility for clients, IT stabilization, and risk reduction).

Table 15: Analysis Criteria

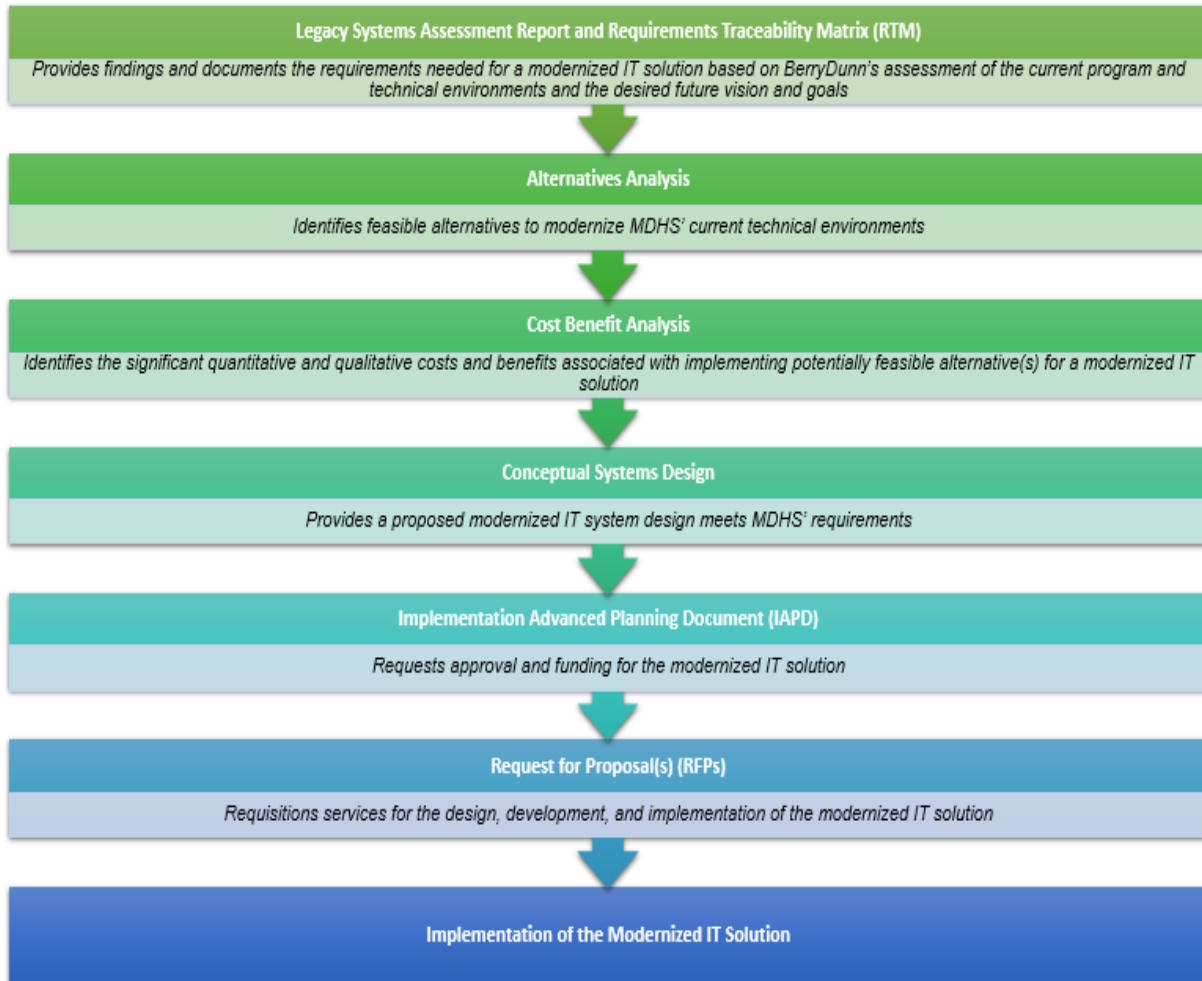
Analysis Criteria	Description
Functional Fit	This criterion focuses on how well the alternative aligns with the functional requirements identified in the RTM. This includes the following business areas: Business Relationship Management, Client Management, Eligibility and Enrollment (client and provider), Enforcement Management, Financial Management, General, Legal Management, Operations Management, Performance Management, Provider Management, and Service Management.
Technical Fit	This criterion focuses on how well the alternative aligns with the technical requirements identified in the RTM. This includes the overall self-configuration and administration of the solution, as well as the following requirements categories: Architecture, Audit, Client and Provider Portal, Configuration, Conversion and Migration, Data Governance, Document Management,

Analysis Criteria	Description
	General, Interfaces, Performance, Reporting and Analytics, Security, Validation Checks, and Workflow Management.
Operational Improvements and Business Goals	This criterion focuses on the impact the alternative might have on addressing MDHS business goals and daily operations, including cost-driving impacts on quality and timeliness of services and on staff time, workload, and productivity.
One-Time Costs	This criterion focuses on the single-occurrence implementation costs, including costs for planning, configuration, migration, testing, and initial launch.
Ongoing Costs	This criterion focuses on overall cost of maintenance and operations, including the recurring licensing and subscription costs required to support the solution.
Implementation Considerations	This criterion focuses on implementation opportunities and efficiencies through data migration and phased implementation. It also includes and the use of implementation tools, such as pre-established functional models, accelerators, and other rapid delivery tools that can improve the chances for implementation success and expedite the delivery timeline.

BerryDunn will include alternatives deemed to be potentially feasible as a result of the alternatives analysis in the subsequent cost benefit analysis.

Figure 5 demonstrates how the MDHS and BerryDunn will use the findings in this report to inform project next steps and ultimately the future implementation of a modernized IT solution.

Figure 5: Next Steps Related to Legacy Systems Assessment Report



Appendix A: Glossary of Acronyms and Terms

Table A1 provides a list of acronyms and terms used in this document.

Table A1: Glossary of Acronyms and Terms

Acronym/Term	Definition
ABAWD	Able Bodied Adult Without Dependents
Adabas	Adaptable Database System
AAA	Area Agencies on Aging
BBCE	Broad-Based Categorical Eligibility
CARS	Client Application and Registration System
CCCP	Child Care Certificate Program
CCPP	Child Care Payment Program
CCPS	Child Care Payment System
CCR&R	Child Care Resource and Referral
COBOL	Common Business-Oriented Language
COTS	Commercial Off-the-Shelf
COVID-19	Coronavirus Disease 2019
CRS	Case Review System
CSE	Child Support Enforcement
CWP	Common Web Portal
DDI	Design, Development, and Implementation
DOH	Department of Health
DRAAS	Disaster Recovery as-a-Service
DSNAP	Disaster Supplemental Nutrition Assistance Program
ECA	Early Childhood Academy
E&T	Employment and Training.
EBT	Electronic Benefit Transfer
EDP	Employability Development Plan
eFITS	Electronic Financial Interface Tracking System
EPPIC	Electronic Payment Processing and Information Control
FEMA	Federal Emergency Management Agency
FTE	Full-Time Equivalent

Acronym/Term	Definition
HBCS	Home Based Community Services
HMO	Health Maintenance Organization
HOPE	Restore Hope Opportunity and Prosperity for Everyone Act
iOS	iPhone Operating System
IT	Information Technology
ITS	Information Technology Services
IBM®	International Business Machines
JAWS	Jobs Automated Work System
LARS	Child Care Licensing System
LIHEAP	Low-Income Energy Assistance Program
M&O	Maintenance and Operations
MAC	Mississippi Access to Care Centers
MAVERICS	Mississippi Application, Verification, Eligibility, Reporting, & Information Control System
MDES	Mississippi Department of Employment Security
MDHS	Mississippi Department of Human Services
MDM	Master Data Management
MECIC	Mississippi Early Childhood Inclusion Center
MEMA	Mississippi Emergency Management Agency
METSS	Mississippi Enforcement and Tracking of Support System
MIS	Management Information Systems
MOE	Maintenance of Effort
MPI	Master Person Index
MS	Microsoft
OCSE	Office of Child Support Enforcement
OIG	Office of Inspector General
QA	Quality Assurance
QC	Quality Control
PINS	Personnel in Need of Supervision
RTM	Requirements Traceability Matrix
SHIP	State Health Insurance Program

Acronym/Term	Definition
SFTP	Secure File Transfer Protocol
SNAP	Supplemental Nutrition Assistance Program
SNAP-ED	Supplemental Nutrition Assistance Program Education
SNAP E&T	Supplemental Nutrition Assistance Program Education & Training
SQL	Structure Query Language
SSA	Social Security Administration
SSO	Single Sign-On
TANF	Temporary Assistance for Needy Families
TEFAP	The Emergency Food Assistance Program
TWP	TANF Work Program
USDA	U.S Department of Agriculture
WFD	Workforce Development
WIC	Women, Infants and Children

Appendix B: Project Participants and Meetings

Table B1 provides a list of meetings that BerryDunn facilitated with the MDHS stakeholders to gather feedback about strengths, challenges, and opportunities in the current systems environment and the desired future systems environment. In addition to the meetings listed below, BerryDunn participated in weekly project status and Executive Steering Committee meetings, during which MDHS project leadership and the BerryDunn core project team shared and discussed project information.

Table B1: Project Meetings

Meeting	Meeting Date	MDHS Invitees
MDHS Programmatic and Systems Assessment Kick-Off Meeting	August 31, 2021	Johnny Waldrop, Mark Allen, Tina Ruffin, Kenyada Blake, Toni Kersh, Cynthia Edwards, Denise Cooper, Kimberly Smith, Cheryl Joiner, Beverly Williams, Breanne Anderson, Janie Crapps, Chuck Francis, Daniel Garrett, Marcus Gentry, Thomas Hederman, Jason Campbell, Jay Harper, Michael Wise, Steve Mitchell, Brenda Wilson, James Barlow, Richard Taylor, Guy Sylvester, Jesse Nicholson
MDHS Legacy Systems Assessment Programs Discovery Session	September 1, 2021	Robert Anderson, Richard Taylor, Johnny Waldrop, Mark Allen, Guy Sylvester
MDHS Legacy Systems Assessment Systems Discovery Session	September 1, 2021	Richard Taylor, Johnny Waldrop, Guy Sylvester, Jesse Nicholson, Mark Allen, Cheryl Joiner, Steve Mitchell, Brenda Wilson, Sherry Jackson, Beverly Williams, Chuck Francis, Jason Campbell, James Barlow, Debra Dixon, Janie Crapps, Nathan Wilson, John McManus
MDHS Legacy Systems Assessment CCPS Discovery Session	September 2, 2021	Richard Taylor, John McManus, Johnny Waldrop, Guy Sylvester, Chad Allgood
MDHS Legacy Systems Assessment Executive Kick Off Meeting	September 9, 2021	Johnny Waldrop, Mark Allen, Guy Sylvester, Clair Graves, Rachelle Richardson, Mark Williamson, Bob, Anderson, Wayne Carpenter, Daniel Gallarno, Nathan Wilson, Patrick Black, Sandra Griffith, Richard Taylor

Meeting	Meeting Date	MDHS Invitees
MDHS Legacy Systems Assessment - Case Management Workflow Breakout Discovery Session	September 9, 2021	Breanne Anderson, Eleanor Monroe, George Berry, Guy Sylvester, Johnny Waldrop, Mark Allen, Mark Williamson, Richard Taylor
MDHS Legacy Systems Assessment - DSNAP - Eligibility Breakout Discovery Session (including determination/benefit issuance workflow)	September 9, 2021	Breanne Anderson, Eleanor Monroe, George Berry, Guy Sylvester, Janie Crapps, Johnny Waldrop, Mark Allen, Marilyn Williams, Richard Taylor
MDHS Legacy Systems Assessment - Quality Control Process Breakout Discovery Session (including current error rates and federal compliance issues)	September 9, 2021	Cynthia Edwards, Richard Taylor, Sandra Griffith
MDHS Legacy Systems Assessment - Child Care - Provider Management Discovery Session (including the provider portal, licensing and payments)	September 9, 2021	Richard Taylor, Chad Allgood, Angela, Laura Dickinson
MDHS Legacy Systems Assessment - TANF - Case Management (Work Program) Discovery Session	September 9, 2021	John Brown, Kimberly Smith, Richard Taylor, Sherry Jackson, Sherry Jackson, Cheryl Joiner, Mark Williamson, Jacqueline Hughes, Suzanne, Lanitra Robinson
MDHS Legacy Systems Assessment - CSE/METTS Workflow Breakout Discovery Session	September 14, 2021	Beverly Williams, Chad Shook, Guy Sylvester, Jesse Nicholson, Mark Allen, Rachelle S. Richardson, Richard Taylor, Shane Cooley
MDHS Legacy System Assessment Enterprise and Infrastructure Breakout Discovery Session	September 14, 2021	Beverly Williams, Charles Krout, Cheryl Joiner, Chuck Francis, Guy Sylvester, Jason Campbell, Jay Harper, Jesse Nicholson, Johnny Waldrop, Mark Allen, Michael Wise, Richard Taylor, Shane Cooley, Steve Mitchell, Thomas Hederman
MDHS Legacy Systems Assessment - HB 1090 Review and Discussion	September 14, 2021	Guy Sylvester, Johnny Waldrop, Mark Allen, Richard Taylor, Nathan Wilson, Jesse Nicholson, Shane Cooley

Meeting	Meeting Date	MDHS Invitees
MDHS Legacy Systems Assessment - OIG Workflow Processes Discovery Session	September 15, 2021	Brett Estes, Guy Sylvester, Hadley Gable Eisenberger, Jesse Nicholson, Johnny Waldrop, Justin Huff, Marci Rushing, Mark Allen, Richard Taylor, Shane Cooley, Stephanie Goodman
MDHS Legacy Systems Assessment Community Services Workflow Processes and VR2 Discovery Session	September 15, 2021	Beverly Williams, Cheryl Joiner, Guy Sylvester, Jesse Nicholson, Johnny Waldrop, Marcus Gentry, Mark Allen, Richard Taylor, Tina Ruffin
MDHS Legacy Systems Assessment - HHSTP Review Discovery Session	September 16, 2021	Ashley Galloway, Breanne Anderson, Guy Sylvester, Johnny Waldrop, Mark Allen, Richard Taylor, Shane Cooley, Thomas Costa
MDHS Legacy Systems Assessment - System Costs Discovery Session	September 23, 2021	Richard Taylor, Debra Dixon, Wayne Carpenter, Tiffany Ledbetter, Guy Sylvester, Johnny Waldrop, Mark Williamson, Mark Allen, Cheryl Joiner, Beverly Williams, Chad Allgood, Chad Shook, Rachelle S. Richardson, JD, Nathan Wilson, Jesse Nicholson, Shane Cooley, Tina Ruffin, Kimberly Smith, Breanne Anderson, George Berry, Eleanor Monroe, Janie Crapps
MDHS Legacy Systems Assessment Requirements Work Sessions (Eligibility and Enrollment--Client and Service Management)	October 26, 2021	Richard Taylor, Jennifer Allen, Rachelle Richardson, Angela Crockett, Eleanor
MDHS Legacy Systems Assessment Requirements Work Sessions (Eligibility and Enrollment--Provider and Provider Management)	October 26, 2021	Richard Taylor, Shane Cooley, Angela Crockett
MDHS Legacy Systems Assessment Requirements Work Sessions (Financial Management)	October 27, 2021	Richard Taylor, Shane Cooley, Angela Crockett, Marci Rushing, Rachelle Richardson, Guy Sylvester, Jennifer Allen
MDHS Legacy Systems Assessment Requirements Work Sessions (Business Relationship Management)	October 27, 2021	Angela Crockett, Guy Sylvester, Rachelle Richardson, Jennifer Allen, Eleanor Monroe

Meeting	Meeting Date	MDHS Invitees
MDHS Legacy Systems Assessment Requirements Work Sessions (Operations Management)	October 27, 2021	Richard Taylor, Shane Cooley, Guy Sylvester, Johnny Waldrop, Rachelle Richardson, Angela Crockett, Jennifer Allen
MDHS Legacy Systems Assessment Requirements Work Sessions (Performance Management)	October 27, 2021	Richard Taylor, Guy Sylvester, Johnny Waldrop, Eleanor Monroe, Chad Shook, Angela Crockett, Marci Rushing, Jennifer Allen
MDHS Legacy Systems Assessment Requirements Work Sessions (Technical)	October 28, 2021	Shilpa Naidu, Michael Wise, Jason Campbell, Richard Taylor, Marion Johnson, Mike Wa, Cheryl Joiner, Shane Cooley, Johnny Waldrop, Jerry Weir, Sherry Jackson, Marcus Gentry, Melissa Goodson, Patrick Curran, Guy Sylvester, Beverly Williams, Eric Coleman
MDHS Legacy Systems Assessment Requirements Work Sessions (Service Management) - Continued	October 28, 2021	Johnny Waldrop, Richard Taylor, Jennifer Allen, Rachelle Richardson, Angela Crockett, Laura Dickinson, Eleanor Monroe
MDHS Legacy Systems Assessment Requirements Work Sessions (Legal Management and Enforcement Management)	October 28, 2021	Richard Taylor, Shane Cooley, Rachelle Richardson
MDHS Executive Steering Committee Meeting	November 3, 2021	Robert Anderson, Richard Taylor, Johnny Waldrop, Mark Allen, Nathan Wilson, Mark, Williamson, Rachelle Richardson, Patrick Black, Guy Sylvester
MDHS Legacy Systems Requirements Work Sessions OC and OIG	November 5, 2021	Johnny Waldrop, Kameron Harris, Dr.PH, Sandra Griffith, Vickie Collins, Cynthia Edwards, Denise Cooper, Marci Rushing, Guy Sylvester, Mark Allen

Appendix C: RTM

Link to Microsoft Excel file of the functional and technical requirements for the future modernized, integrated IT solution is [HERE](#).
