

RFP 24-78424 (Enterprise Decision Support Solutions):

Attachment K: Scope of Work

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1 Introduction

In accordance with Indiana statute, including IC 5-22-9, the Indiana Department of Administration (IDOA), acting on behalf of the Indiana Family and Social Services Administration (FSSA), requests maintenance, operations, and enhancements services for FSSA's Enterprise Decision Support Solutions. FSSA seeks to contract with one or two vendors to support two Enterprise Decision Support Solutions scopes of work, as further described below. One solution is the Enterprise Data Warehouse (EDW) while the other is the FSSA Cloud Analytics Environment (CAE).

The EDW and CAE are managed by the FSSA Division of Healthcare Strategies & Technology (DST) Data and Analytics (D&A) team with several FSSA divisions as data generating stakeholders and recipients of decision support solution services. The D&A team is dedicated to supporting the EDW and the FSSA CAE. The team develops recurring and ad hoc reporting for business users and supports oversight of the incumbent vendors, including helping to review, design, and prioritize change requests. A key goal of the team is to increase user self-service using data visualization tools to both promote flexible business intelligence solutions and respond to data inquiries across the State, as appropriate. Please see the D&A Data Services Catalog in the Bidders Library for an overview of the type of services provided by the D&A team to FSSA.

Throughout this scope, unless a scope-specific reference is called out (e.g., "EDW Contractor only"), the described work will be applicable to all awarded Contractors. References to "the Contractor" shall refer to all Contractors for their respective awarded scopes.

1.1 Enterprise Data Warehouse (EDW) Scope

The FSSA Office of Medicaid Policy & Planning (OMPP) and FSSA Division of Family Resources (DFR) are the most significant EDW stakeholders.

While State DST staff manages the EDW, they are supported by two incumbent vendors. The first vendor, at a high level, manages and supports the EDW's Teradata and Informatica ETL infrastructure and OMPP Data Warehouse (OMPP DW) healthcare-oriented data extraction and reporting. The second vendor supports the Social Services Data Warehouse (SSDW), which is used by several program areas across FSSA, along with other agencies such as the Indiana Department of Health (IDOH). There is some overlap between the two vendors and they both have had roles in furthering the EDW with consolidated infrastructure and standard data warehouse-oriented tools. Note: Although both the Medicaid and social service data extraction and reporting are contained under the Teradata/Informatica platform, they are considered to be two distinct systems.

Though the current EDW is composed of two distinct segments handled by two vendors, the State wishes to combine these responsibilities under one vendor ("EDW Contractor") for the future state of the EDW, as this Scope of Work describes. It is expected that the Contractor will find resource and cost savings efficiencies in their staffing structure to provide the needed support for both segments, while not sacrificing level of service across distinct State programs (e.g., utilizing a single Project Executive or shared security team who are able to meet service expectations across State teams). For both segments, the EDW Contractor is expected to provide the following systems and M&O services:

- a. Data warehouse platform infrastructure, tools, and services
- b. Data governance
- c. Clearinghouse, functioning as the staging, ETL (extract, transform, and load) and cleansing clearinghouse for data conversion

- d. Decision support and reporting tools and services
- e. Federal reports and Management and Administrative Reporting (MAR)
- f. Operational reports (financial reports, program performance measurement, including but not limited to trending and forecasting)
- g. Program management reporting (e.g., using health care data as available through the advancement of Health Information Technology (HIT) in the State)
- h. Business intelligence tools and support staff dedicated to addressing program monitoring and analysis. Data analytic subject matter experts (SMEs) to serve as consultants to FSSA and liaisons to the technical data analytics team
- i. Maintenance and operations (M&O) and enhancements for the EDW, including the State's Teradata/Informatica ETL warehousing platform's infrastructure, the OMPP DW, and the SSDW.
 - o The EDW infrastructure will be a hybrid cloud/on-prem solution at the start of the Contract. See Section 2.1.1 for information on the transition of the Teradata software components for the Production and Dev/DR systems to GovCloud-based virtual machines beginning in April 2024.
 - o Note: The State is planning to request that the EDW Contractor transfer the EDW to a cloud native data warehousing solution during the Contract term, including migration of all EDW functionality, data, and reporting. The timing and scope are not finalized but this large SDLC effort is expected to be added to the Contract via amendment.
- j. Support the reporting needs of FSSA as well as its State and Federal partners, including IDOH and the Department of Child Services (DCS).
- k. If requested, purchase necessary Teradata licenses and infrastructure on behalf of the State. These costs will be passed through to the State **with no price markup** over the price paid by the EDW Contractor. Section 2.1.1 and Section 3.6 will provide further information regarding key elements of the infrastructure.

The segment-specific needs of the EDW are:

- OMPP DW: A minimum of four staffing resources (Business Analysts and Business Intelligence (BI) Developers) from the EDW Contractor will be collocated with the D&A team to provide direct support for their OMPP data warehouse needs. Current BI tools include Cognos and Tableau, but if the State switches to another tool, the EDW Contractor shall adjust their BI staff to provide replacement staff with expertise in the new BI tool.
- SSDW:
 - o Work closely with the State Board of Accounts (SBOA) and DFR concerning TANF audits.
 - o Work closely with the FSSA Privacy and Security Office and DFR concerning compliance, ongoing risk assessments, and corrective action management for example CMS POAM/Minimum Acceptable Risk Standards for Exchanges (MARS-E) requirements, SSA security requirements, and IRS Publication 1075 Audits.

1.2 FSSA Cloud Analytics Environment (CAE) Scope

In 2021, FSSA expanded its data infrastructure and implemented an Azure CAE to support advanced analytics both within DST and across the organization. The CAE is managed by the D&A team in collaboration with the Indiana Office of Technology (IOT). The "CAE Contractor" is expected to provide the following systems and services:

- a. Support the CAE in collaboration with IOT. Assist the D&A team in the continued growth of the CAE in support of creating an integrated decision support platform for the Agency.

- b. Provide an appropriately experienced staff to manage infrastructure as code using the Terraform language, promoting automation, consistency, and scalability in FSSA's infrastructure management processes.
- c. Provide Databricks data engineering, big data processing and cloud technology support.
- d. Work closely with the D&A team and other State staff in the development of Tableau dashboards based actionable visualizations, dashboards, and reports.
- e. Support development of various outputs utilizing a variety of analytic tools.
- f. Utilize agile principles to provide early and continuous delivery of valuable insights to stakeholders.
- g. Support analysis of complex program and policy issues. Provide evidence-based recommendations and contribute to informed and effective policy making processes.
- h. Provide Business Intelligence and Performance Reporting services. This includes, but is not limited to dashboard creation, management, and business process integration, user training, situational awareness.
- i. Support Azure Cloud Administration needs of the D&A team.
- j. Maintain various data models for the CAE across agency/program/division(s). The CAE Contractor will be responsible for maintaining the existing LTSS business environment with the expectation that new data pipelines supporting other business outcomes may be added in the future.
- k. Note: Unlike with the EDW, the CAE Contractor is not responsible for infrastructure maintenance as the environment will be maintained by IOT. Rather, the CAE Contractor will provision new services as needed as part of their support services (e.g., when Microsoft introduces Azure changes that impact the CAE or a Kubernetes update that requires container updates). The CAE Contractor is responsible for conducting any necessary design, development, and implementation work and software installation/configuration to roll out the changes. Once the changes are implemented and stabilized, IOT will continue to maintain the environment.

CAE Team Composition

The CAE Contractor team will comprise of 1 Project Executive, 5 FTEs who work on the CAE M&O services, and 8.5 FTEs who work on Rapid Response Team (RRT) related services. Please see Section 7.1.3 of this Scope of Work for the breakdown of positions by team. The RRT currently supports the LTSS (Pathways for Aging) data flows full time. However, over time, it is expected the LTSS resource demand will lessen as the LTSS data flows stabilizes and the initial surge of incidents and user requests diminishes. In time, other data flows (e.g., DMHA, DDRS, OECOSL) will be rolled out and some RRT resources will be redeployed to the new data flows.

CAE Workplan

The CAE Contractor will create and maintain a CAE Workplan that clearly lays out the "CAE Projects" assigned to the CAE Contractor, the associated CAE Project deliverables, CAE Project schedules, and resource plan for each project (including names of assigned CAE Contractor team individuals). The CAE Workplan will be forward-looking with different views available for the upcoming week, month, and three-month period.

CAE Workplan Updates

In weekly meetings with the State, the State and CAE Contractor shall review upcoming CAE Projects and new deliverables and changes in project prioritization. The CAE Contractor shall then update the CAE Workplan with State approval. Attachment O (RFP Bidders Library) contains the D&A Data Service Catalog, which shows the types of projects that the D&A team may assign to the CAE Contractor. Examples are provided below.

- Data request: considered low-complexity and low level of effort. Typically, these are the result of data extraction and simple transformation of data the D&A team already has access to. This work totals fewer than 20 hours of work.
- Data project: considered to be work that is of medium-to-large complexity and medium-to-large level of effort. Projects can take anywhere from days to months to complete.
- Data science and research: Work that requires advanced analysis techniques beyond simple aggregations. It is often aimed at understanding causality and prediction. These projects can take anywhere from 1–9 months to complete, based on several factors, such as data availability, data cleanliness, method development and validation.
- Visuals and analysis (“business intelligence”): Work requiring a visual rendering of data in order to more easily understand the trends or aggregations in time and space. Visualization is the last step in the data lifecycle and as such is dependent upon many factors upstream. This can impact the timelines and these projects can take anywhere from 1–8 months as a result.
- Engineering and architecture projects: Work that involves the design, storage, extract, transformation and movement of data elements from one place to another. These projects can take 1–6 months based on complexity, cleanliness, volume and velocity of data sources involved.
- Metadata capture: creation and organization of descriptions of the fields and tables used in data development.
- Record linkage (“entity resolution”): Process of relating two or more of the same objects, like people, across multiple systems in order to merge the data in each of those systems for further analysis.

There may be other types of CAE Projects submitted to the CAE Contractor.

The CAE Contractor is expected to be a nimble and flexible team that can adapt to changing priorities and new CAE Projects. It is anticipated that the CAE Contractor team shall remain the same size and mix of resources and adjust to the tasks as they arise. Each new CAE Project will be processed through the Change Request process (see Section 5.4.1). With the State’s approval, the Change Request process may be simplified for a specific project due to the need for expediency or because a Change Request is determined to be low effort, risk, or priority. The State looks to the CAE Contractor to bring their project effort estimation expertise and experience to create realistic schedules and resource plans.

Changes to CAE Team Composition and Size

The CAE Contractor shall be expected to maintain the minimum staffing requirements to execute the obligations outlined in the Scope of Work. In the event there is a departure, the CAE Contractor must inform the State of any turnover that occurs within the team with as much advanced written notice as possible. The CAE Contractor shall provide expectations for how the duties and responsibilities of the role(s) that have been vacated shall be met to ensure no disruption to services to the State. Vital Personnel are also subject to the expectations outlined in Section 7.2 of this Scope of Work.

If it is decided that the CAE Contractor team needs to expand (temporarily or permanently), the increase in staff and costs will be addressed via a Contract Amendment and use the contractual staff hourly rates in the Cost Proposal. The structure of the additional costs will be determined by the State (e.g., deliverable based fixed fee or hourly based). All changes to monthly fees must be approved by the State before going into effect.

1.3 Proposals For More Than One Scope

Respondents may propose responses to one or both scopes of work. If one Respondent is awarded both scopes, it is expected that they will maintain distinct teams to handle each scope, with the exception of the Project Executive (see Section 7.2 for more information about this role) who may be staffed across both scopes. This maintenance of distinct teams is critical as the State anticipates the need for scope-specific familiarity and expertise with the respective program areas throughout the Contracts. Please see Section 7 for more information about the State’s staffing expectations.

Please note: If a Contractor is awarded multiple scopes, the State reserves the right to explore operational efficiencies which may be agreed by mutual consent (for cost savings or other factors) so long as each scope’s specific tasks are not negatively impacted.

2 Background Information

2.1 Current Solutions

2.1.1 EDW/OMPP DW

The State implemented a Data Warehousing/Decision Support Systems/Business Intelligence solution in 2015 to address the needs of the Medicaid program and its associated State and Federal reporting and data analysis needs. As part of the implementation, in 2017 reporting from the legacy Advanced Information Management (AIM) system was transitioned to the OMPP DW system and to the new CORE Medicaid Management Information System (MMIS). The OMPP DW also provides Federal and State reporting to help secure and maintain CMS certification.

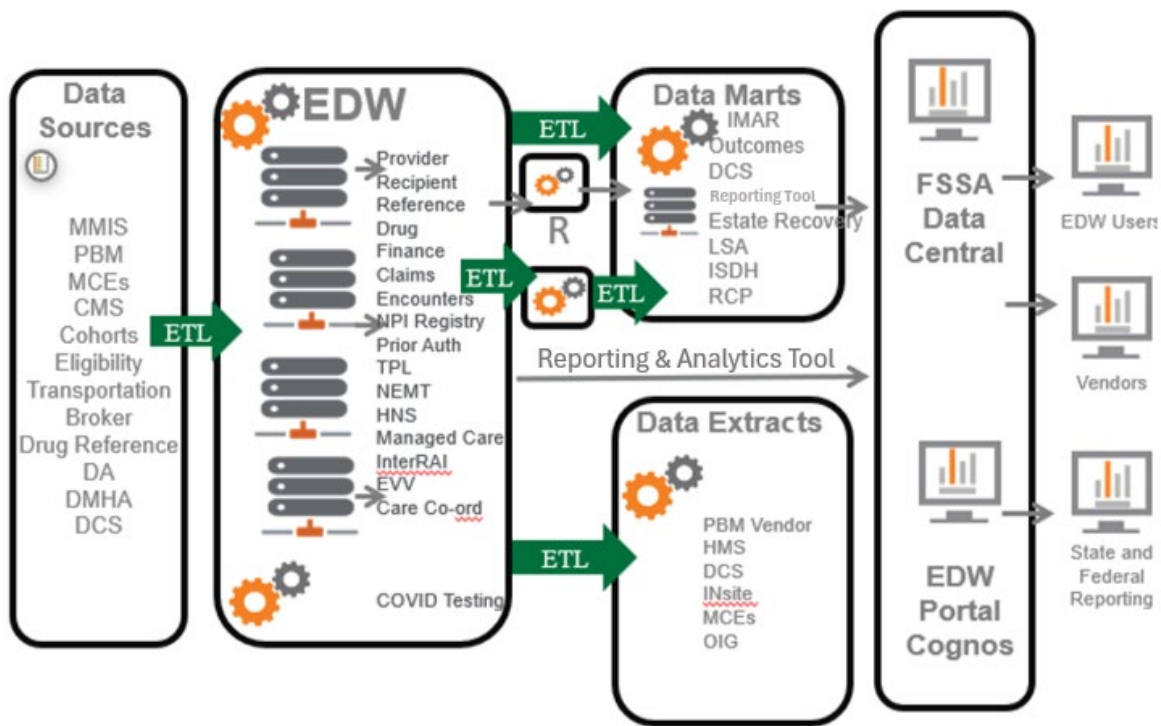
The Bidders Library (Attachment O) holds the latest version of the “EDW Operations Document” that is maintained and updated semiannually to document the procedures and other related information utilized in the day-to-day operation and maintenance of the OMPP DW Data Warehouse system environment. It has been provided for informational purposes to give Respondents further clarity on the responsibilities for the EDW Contractor. Examples of useful information provided in the document include:

- Further details on the responsibilities of the EDW Contractor
- Reports generated through the OMPP DW
- Data dictionary (“Metadata Manager Glossary”)
- Technical architecture
- EDW hardware environment and software
- Dataflow architecture
- Job sequence overviews and schedule
- Data extracts and run schedule
- Data marts and refresh schedule
- Incumbent vendor delivery/SDLC model and change management process
- Helpdesk responsibilities
- Training responsibilities

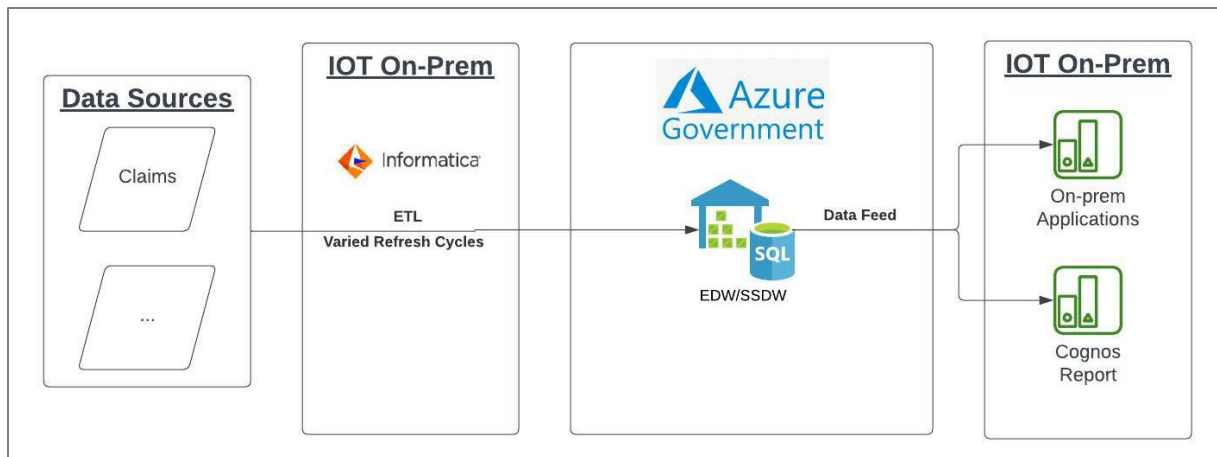
This document was last updated November 2023, and the latest version will be shared with the awarded vendor upon Contract execution.

NOTE: Beginning in April 2024, GovCloud based virtual machines will be used to host the Teradata Software components for the Production and Dev/DR systems in the Microsoft Azure GovCloud tenant space provisioned by Teradata and owned and managed by the incumbent OMPP DW vendor for the incumbent OMPP DW vendor to then use on behalf of the State, and for the incumbent OMPP DW vendor to then permit use by the State. Costs related to the Teradata infrastructure will be passed through to the State **with no price markup** over the price paid by the EDW Contractor. The Teradata Azure GovCloud tenant space will be provisioned at the Teradata Vantage 17.10/17.20 software version level. Bidders will work with the incumbent during the transition phase to determine logistical elements needed to ensure a smooth transfer of responsibilities related to the ownership and management of the Teradata platform.

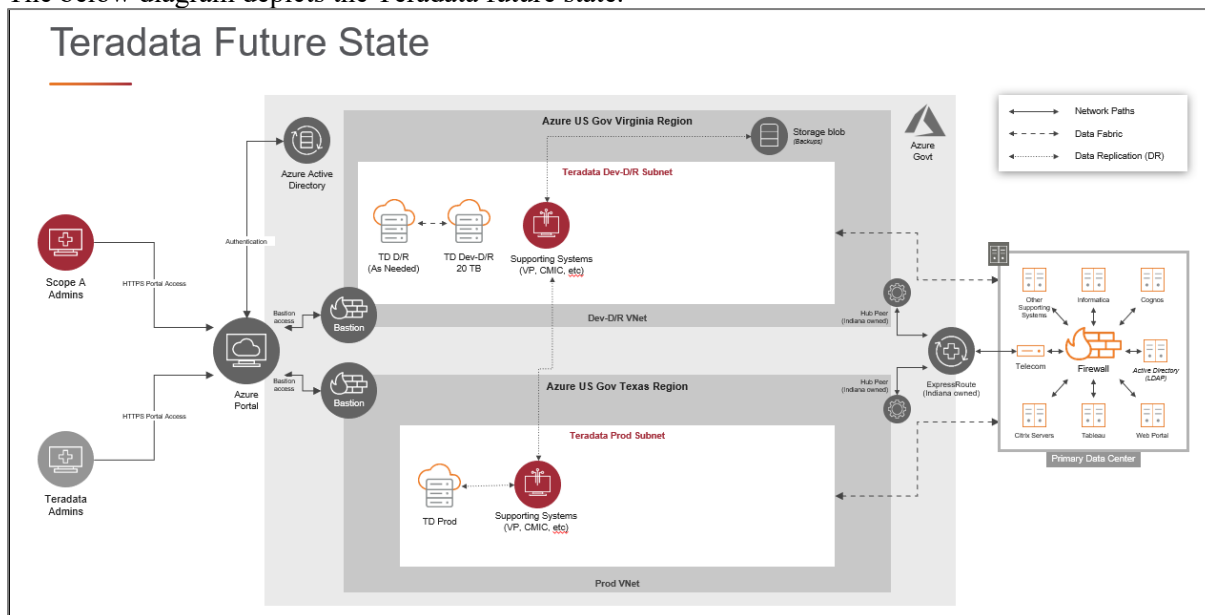
The diagram below represents the current data flow of the EDW solution, with the focus on the OMPP DW. Note: The data sources, data marts, and data extracts are representative and do not represent the comprehensive list. Additionally, these elements may change by the time the Contract begins.



As noted above, beginning in April 2024, GovCloud based virtual machines will be used to host the Teradata Software components for the Production and Dev/DR systems. An additional view of the hybrid environment is provided below.



The below diagram depicts the Teradata future state.



2.1.2 SSDW

The SSDW system was originally established by DFR in 1996 to meet the Federal reporting requirements for Temporary Assistance to Needy Families (TANF) but has since expanded to cover several agencies, programs, and FSSA divisions. It collects source system data, matches clients across source systems, identifies qualifying persons and families, and aggregates the data into reports. For example, it reports benefits, services, and financial data to the Department of Health and Human Services (HHS), including CMS Health Coverage Program. ACF TANF Program operational data is reported to the HHS Administration and Children and Families. SNAP program operational data is reports to Food and Nutrition Services (FNS). Data is also reported to the Agency Controller and FSSA Management.

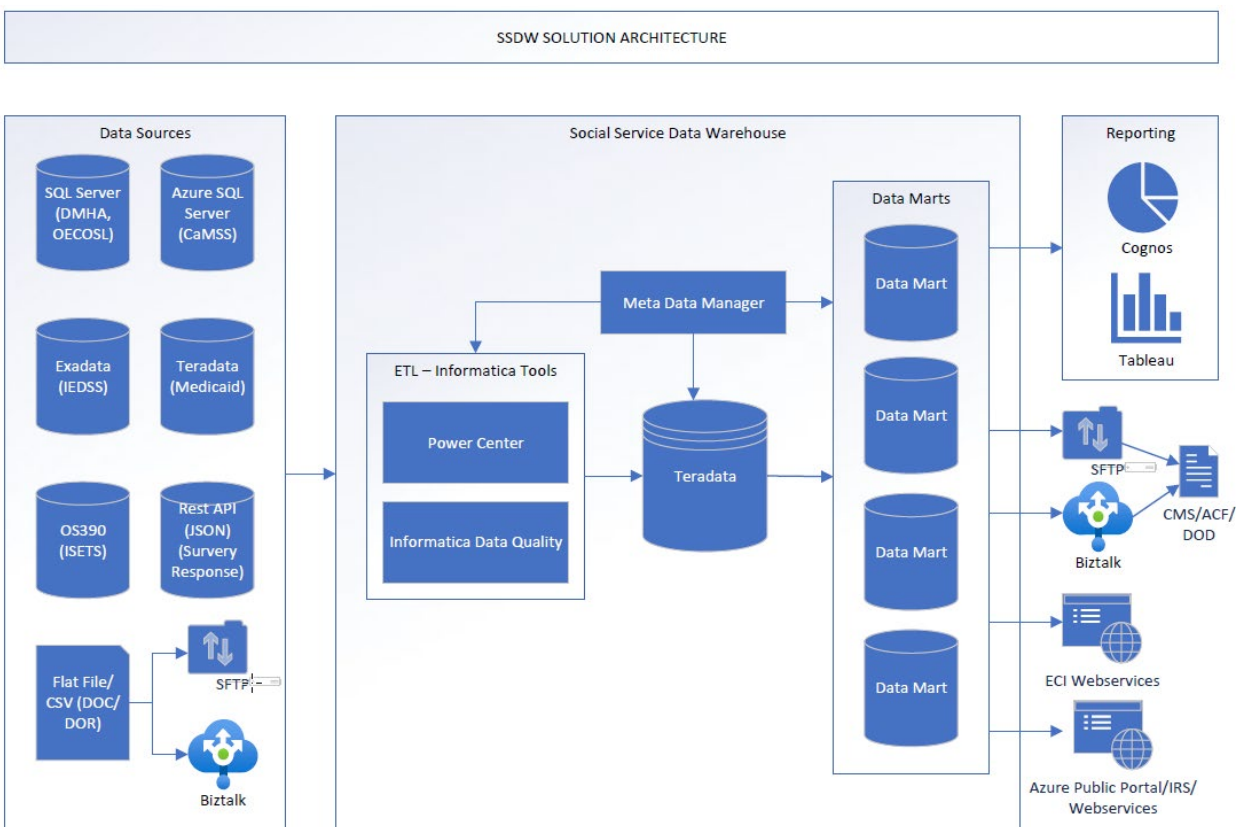
The Bidders Library (Attachment O) is the latest version of the “SSDW Environment Document” that is maintained and updated semiannually by the incumbent SSDW vendor to capture the SSDW background, application environment, and services. It has been provided for informational purposes to give EDW Respondents further clarity on the responsibilities for maintaining the SSDW. Examples of useful information provided in the document include:

- Further details on the responsibilities of the EDW Contractor
- Technical architecture
- Source systems (contributing, participating, or other)
- List and frequency of deliverables by program area (currently over 580 types of reports)
- SSDW hardware environment and software
- Active data sources and frequency of the file transfers (currently over 175 files)
- Current development and production environments

This document was last updated October 2023 and the latest version will be shared with the awarded Contractor upon Contract execution.

The State reserves the right to adjust some of the responsibilities during the Contract term.

The diagram below represents the technical architecture of the SSDW solution. Note: The data sources are representative and are not a comprehensive list. Additionally, these elements may change by the time the Contract begins.



2.1.3 FSSA CAE

In 2021, FSSA deployed a hybrid cloud architecture and analytics environment that is fully integrated with the on-premises network and assets through a dedicated, private connection. The CAE added the necessary functionality to consume non-traditional Medicaid data sources and link these data sources in an effective and sustainable way. The Azure cloud environment was a requirement to ensure that Indiana was able to have a cost-effective and efficient way to share and leverage data across divisions, and to support its programs. As more demands were placed on FSSA to drive decision-making, the need for scalability was paramount. Scalability was achieved with communication and collaboration functionality, automated data usage tracking, self-service security, access request monitoring, and more streamlined data access request and data extraction processes.

These capabilities delivered a significantly improved user experience beyond a traditional approach which might consist of simply giving users a database and select analytical tools. Scalability was also enabled by capabilities to quickly provision dedicated sandbox environments (and retire them with minimal manual intervention), administrator portal functionality to manage user access and the consumption of data assets, the ability to capture resource utilization for potential chargebacks, and tools to mitigate the risk of disallowed data use. These capabilities focused on minimizing the operational burden on FSSA and provided improved capabilities to enable disparate data integration and advanced analytics.

Data and products created and managed within the CAE are for supporting situational awareness and decision-making, including business intelligence, quality reporting, performance management, and other internal reporting needs.

The base of the CAE consists of four main interactive components:

- **User Portal.** Serves as the access point for all users seeking access to the CAE.
 - Though it is one CAE user portal, there are two instances of the CAE – one for State staff and one that is a closed access (Trustless) environment. Data should not be exportable from the Trustless environment to other external partners. These are two different environments for JupyterHub with two different infrastructures for Virtual Machines. The CAE Contractor’s responsibilities encompass both instances.
- **Personalized Virtual Desktop Infrastructure (VDI).** A personalized VDI is a remote, cloud-based machine that users will use to conduct their development and analysis. Users can start and stop their VDI, upload new files, and access their personal VDI environment. This environment operates currently on Windows 10, and with the exception of certain functional limitations enacted for the purpose of maintaining the privacy and security of the restricted data provided therein, operates exactly like the Windows operating system that resides on local machines. Here the user can access Office 365, Tableau, and other select tools approved by FSSA and IOT to conduct their analysis.
- **Custom JupyterHub image dedicated to each project.** The JupyterHub module provides users with a set of images containing pre-installed open-source data analytic tools and packages that allow users to conduct data discovery and analysis.
- **Business intelligence and performance reporting.** Dashboard and visualization creation, management and data analysis, business and process integration, user integration, situational awareness

The CAE was provisioned utilizing Terraform – infrastructure as code – to manage the underlying networking configurations, deployment, and storage of the code base in Azure DevOps. This required solution architecture and cloud engineering using Azure native services that maintain the highest level of cybersecurity ensuring HIPAA, NIST-800, and FedRamp compliance.

In 2022, the FSSA DST team deployed an Azure Databricks Lakehouse to begin centralizing the data sources that have been traditionally fragmented due to the lack of modern technology and properly identified use cases. This provided the opportunity to continue modernizing the data orchestration and availability of data sources that had been difficult to access in the past. Data engineering has been essential to the success of the CAE because it allows data scientists the ability to access and develop data products using high-impact FSSA data. This work included both following the software development lifecycle (SDLC) for the CAE and the continued buildout of the Lakehouse to optimize the availability of data sources and provide a well-balanced end-user experience. There are currently live reports and dashboards related to OMPP's Long Term Services and Supports (LTSS) program and the IN211 program.

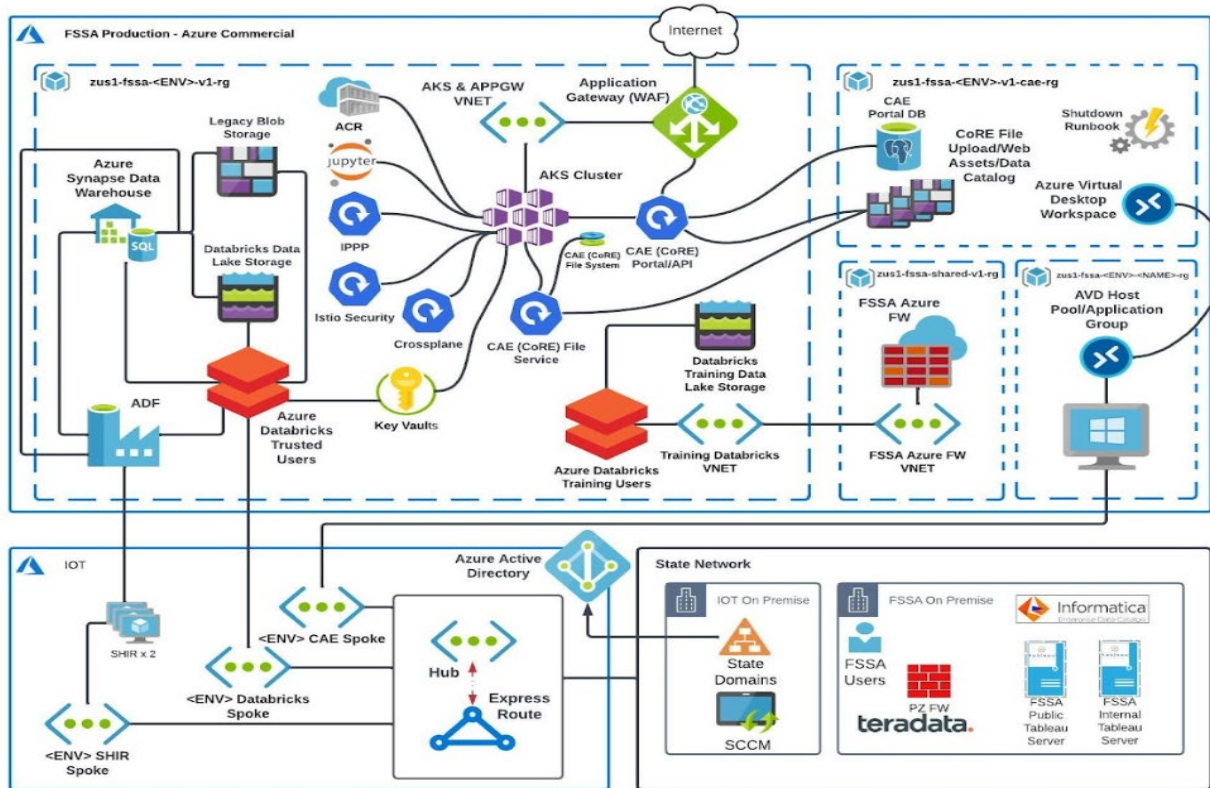
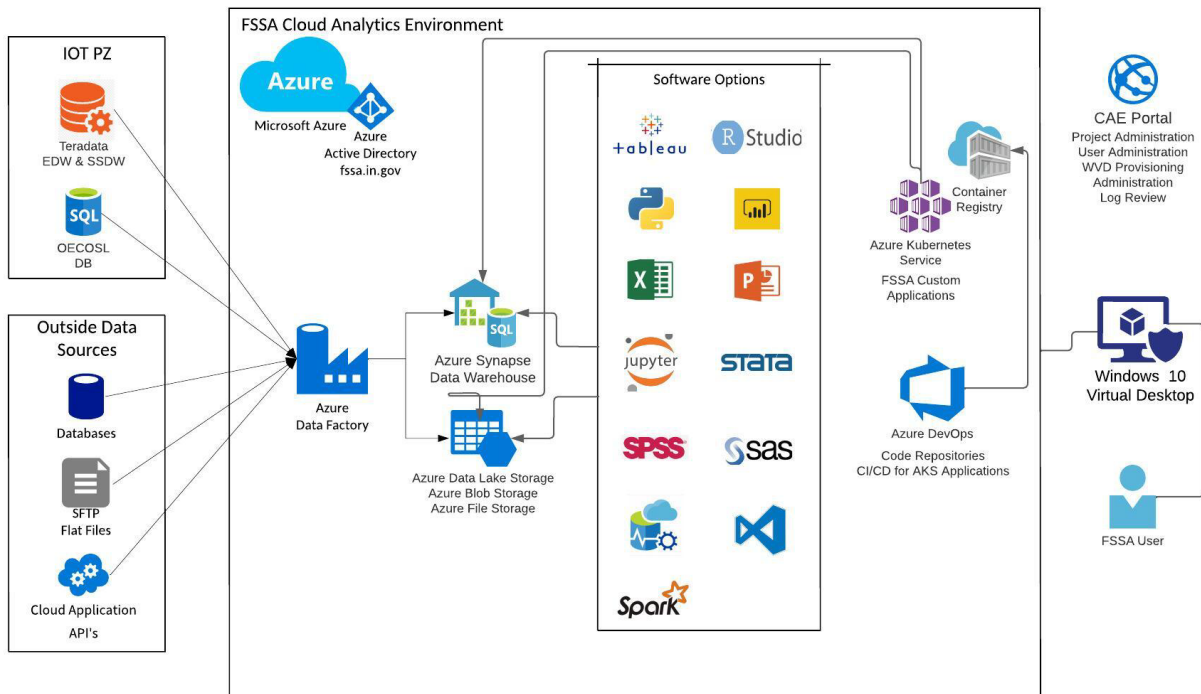
The vision for the CAE is to support various data models allowing programs or divisions to access, query, and run reports to meet their specific business requirements. As of December 2023, there is one division with a data model in production (Medicaid) but there is a desire to explore adding additional divisions (e.g., Office of Early Childhood and Out-of-School Learning (OECOSL), Division of Mental Health and Addiction (DMHA), and Division of Disability and Rehabilitative Services (DDRS)). It is anticipated that the State resources supporting the CAE will to some degree reflect the various data flows as well over time.

NOTE: The CAE is currently in CAE 1.0 environment, with the web application developed in Ruby on Rails. There will be a move to the CAE 2.0 environment starting January 2024 (estimated) that will change the environment. Updated information will be provided to the awarded CAE vendor upon Contract award.

The diagrams below represent the current technical architecture of the CAE solution. Note: The data sources are representative and do not represent the comprehensive list. Additionally, these elements may change by the time the Contract begins.



FSSA Cloud Analytics Environment Diagram



2.2 Organizational Overview

Below is additional background information about the current and anticipated (near term) groups utilizing the EDW/CAE solution. Note some of these groups will also have contractors and other partners that may use the system. This list is not exhaustive as additional requests may come from other agency divisions as needed (e.g., Office of the Secretary, etc.).

1. FSSA

- **Office of Medicaid Policy and Planning (OMPP)** – Administers Medicaid programs and performs medical review of Medicaid disability claims. OMPP’s suite of programs, called the Indiana Health Coverage Programs, includes traditional Medicaid, risk-based managed care, Healthy Indiana Plan (HIP) 2.0, a variety of waiver services, and a prescription drug program tailored to the needs of specific populations. Examples of some of the systems OMPP owns are the following: CORE MMIS, Pharmacy, and management and Administrative Reporting (MAR).
- **Division of Family Resources (DFR)** – Establishes eligibility for Medicaid and Health Coverage, Supplemental Nutrition Assistance Program (SNAP – food assistance), and Temporary Assistance for Needy Families (TANF – cash assistance) benefits. Manages the timely and accurate delivery of SNAP and TANF benefits. Provides employment and training services to SNAP and TANF recipients. Focuses on the support and preservation of families by emphasizing self-sufficiency and personal responsibility. Examples of some of the systems DFR owns are the following: Indiana Eligibility Determination Services System (IEDSS), Medical Review Team (MRT), FSSA Benefits Portal (fssabenefits.in.gov), and Indiana Manpower and Comprehensive Training (IMPACT). The SSDW consumes data from these systems for reporting; moreover, some of these systems consume reporting platforms from the EDW for their internal reporting/dashboarding (e.g., Informatica/Cognos).
- **Division of Aging (DA)** – Establishes and monitors programs that serve the needs of Indiana seniors. Focuses on home- and community-based services for the elderly and disabled. Responsible for nursing home reimbursement policies. Oversees the Residential Care Assistance Program. Includes Adult Protective Services (APS). Examples of data provided by the EDW to DA include Medicaid prior authorizations, paid claims, and client eligibility recertification dates for all DA clients. This information is sent to CaMSS (State Case Management System) to facilitate the work of the case managers.
- **Division of Disability and Rehabilitative Services (DDRS)** – Manages the delivery of services to children and adults with intellectual and developmental disabilities. DDRS develops, finances and compassionately administers programs to provide healthcare and other social services to Hoosiers in need in order to enable them to achieve healthy, self-sufficient and productive lives. Examples of data provided by EDW are the Developmental Disability Automated Resource Tool (DART) client data reports.

- **Division of Mental Health and Addiction (DMHA) Services** – Sets care standards for the provision of mental health and addiction services to residents of the State of Indiana. Ensures that individuals have access to quality services that promote individual, family, and community resiliency and recovery. DMHA operates State Operated Facilities (SOFs) and certifies all Community Mental Health Centers and addiction treatment services providers. Provides funding support for mental health and addiction services to target populations with financial need and administers federal funds earmarked for substance abuse prevention projects. Examples of data covered by current EDW reports include TEDS (Treatment Episode Data Set) reporting and the SAMHSA (Substance Abuse and Mental Health Services Administration) reporting.
 - **Office of Early Childhood and Out-of-School Learning (OECOSL)** – Oversees early childcare, education and out-of-school-time programs. The vision of OECOSL is that every Indiana community will have a strong network of Early Care and Education and Out-of-School Time programs that support the child, the family and local schools. Programs will be high quality, affordable and accessible to enable families to work effectively to obtain economic self-sufficiency. Examples of data covered by current EDW reports include the Public Assistance Reporting Information System (PARIS) match report and the Voucher Transaction report.
 - **Division of Strategy & Technology (DST)** - Division of Strategy and Technology supports the technology needs of the agency including information security, application development, Cognos, data and reporting services including the Data & Analytics team. The vision for FSSA's data strategy is to enable data-informed strategic and operational decision-making in working to improve the health and well-being of Hoosiers. To that end, it is necessary to efficiently deliver innovative, high-quality data solutions that seamlessly connect stakeholders to actionable insights, improving FSSA's policies and programs.
2. **Office of Administrative Law Proceedings (OALP)** - OALP is housed within the State Personnel Department (SPD), with the goal of providing efficient, effective, and impartial administrative proceedings for Indiana's citizens and agencies. Administrative Law Judges (ALJs) preside over administrative proceedings and conduct evidentiary hearings in disputes with state agencies. OALP provides Indiana with a central and independent hearings process with independent administrative law judges who administer justice for many types of disputes to ensure fair, efficient, and quality legal proceedings for parties in administrative matters with the State of Indiana. The OALP system of record is IEDSS. The SSDW consumes data from IEDSS for required federal hearings and appeals reporting for Medicaid, SNAP, and TANF as well as OALP reporting needs in general. Examples of data covered by current EDW reports include FNS SNAP Appeals and Current Status of Hearings and Appeals.
 3. **Department of Child Services (DCS)** - Protects children who are victims of abuse or neglect and strengthens families through services that focus on family support and preservation. The Department also administers child support, child protection, adoption and foster care throughout the State of Indiana. Examples of data covered by current EDW reports include child support payments, caseloads, collections, paternity establishment, and Support Enforcement Tracking System data (the latter will be transitioned to the modernized replacement solution (INvest) but an ancillary service still needs to interface with the SSDW until it is eventually moved to off the legacy solution).

4. **Indiana Department of Health (IDOH)** - Improves quality of life by promoting, protecting and improving the health of Hoosiers in their communities. Examples of areas where IDOH exchanges data with the EDW are Vital Records, Maternal and Children Health, Long Term Care, Children and Hoosiers Immunization Registry Program (CHIRP), Children with Special Health Care Services (CSHCS), Lead and HIV/STD/Viral Hepatitis.
5. **Indiana Office of Technology (IOT)** - Provides measurable, secure, consistent, reliable enterprise-technology services at cost-effective prices to partner agencies so they can better serve the Hoosier taxpayer.
6. **Management Performance Hub (MPH)** - Works with State agencies and external partners to unlock and leverage data to drive decisions, inform policy development, increase government efficiency and transparency, and improve outcomes for Hoosiers around the State. More information can be found at the following: <http://www.in.gov/mph/>. MPH has a direct database connection for Medicaid members data.
7. **Indiana Department of Corrections (IDOC)**- Promotes public safety by providing meaningful, effective opportunities for successful re-entry to the incarcerated individuals in our care. As the model of best correctional practices, IDOC strives to return productive citizens to communities and inspire a culture of accountability, integrity, and professionalism.
8. **Indiana Alcohol and Tobacco Commission (ATC)**- Provides a safe environment for Indiana citizens, especially youth, by promoting crime prevention, educating the alcohol and tobacco industries, educating youth to the adverse effects of alcohol and tobacco, and developing community involvement to prevent the sale of alcohol and tobacco to minors.

Note: The Contractor may be requested to provide requested information and support to the IEDSS Operational Verification and Validation (OV&V) Vendor. DFR has contracted with an OV&V vendor to help review changes (e.g., solution changes, report configuration changes, etc.). They may be requested to provide checkpoints during SDLC activities that allow the SDLC process to move forward: Change Requests (CRs); Requirements; Design, Development, and Testing; and Implementation. They may conduct a Post Implementation Review to ensure the change is working as expected, all documentation is accurate/consistent/correctly stored, and any post implementation defects are properly addressed. Additionally, they may track the Contractor's predefined service level agreements (SLAs) regularly to monitor and report on Contractor performance. The OV&V Contractor may be granted access to all documentation repositories owned by the State. This strategy will allow the OV&V Contractor to easily access any documentation and follow changes as they are made.

If during the term of the Contract, the State chooses to utilize an Independent Verification and Validation (IV&V) vendor as part of DDI and/or enhancement activities (as a separate contract or within the OV&V scope), the Contractor may also be required to provide requested information and support to this vendor, as dictated by State (IOT and FSSA) and Federal (CMS and FNS) requirements. These activities may include providing the IV&V vendor sufficient information for them to support CMS certification and/or FNS implementation concurrence. Consequently, the Contractor may be required to support certification activities with State, CMS, the OV&V vendor, and the IV&V vendor (if the State is using an IV&V vendor to support major DDI or enhancement activities) and monitor necessary modifications.

2.3 System Users

2.3.1 EDW Users

The following table contains the user count by EDW system. Note that there is some user overlap across the various systems as a single user may have access to multiple systems. There are approximately 1,070 unique active user logins; in the chart below users may be counted in multiple areas. Other than the End Users and two (2) Administrators, the other users are with the EDW Contractors.

User Type	Teradata Users	Informatica Users	OMPP DW Users	SSDW Users	Grand Total
Administrator	3	3	3	8	17
Analyst	-	10	11	27	48
Developer	-	45	3	10	58
End User	218	-	47	805	1,070
Metadata Manager	-	13	-	-	13
Service Account	41	1	-	-	42
Training/Test ID	15	-	15	-	30
Total	277	72	79	850	1,278

2.3.2 FSSA CAE Users

The following table contains the user count for the FSSA CAE solution. There are approximately 184 unique user logins; in the chart below users may be counted in multiple areas.

User Type	Azure Virtual Desktop Users	JupyterHub Users	Azure DataBricks Users	Azure Data Factory Users	Azure Synapse Analytics Users	Grand Total
Dev Ops Engineers	3	3	3	3	3	3
Service Account	-	-	2	2	-	2
Azure Integrated RunTime	3	-	-	3	-	3
Data Engineers	5	5	5	5	5	5
Data Analysts	5	-	-	-	-	5
Data Scientists	10	10	10	10	20	10
Informatica EDC (Enterprise Data Catalogue)	n/a	n/a	n/a	n/a	n/a	50
Tableau Server	n/a	n/a	n/a	n/a	n/a	75
IPPP Data Collection App	34	-	-	-	-	34
Estate Recovery App	9	-	-	-	-	9
APS Sunset App	4	-	-	-	-	4
Purdue DataMine	29	29	-	-	-	29

2.4 Technology Tool Set

2.4.1 EDW Technology Tool Set

The State mandates the use of the State-approved technology tool set for the current EDW solution. The tool set is shown in the table below along with the current version, a brief description, and the party who is responsible for maintenance services. The listed software version numbers are current as of October 2023. All listed technology tools are owned by FSSA.

Software	Tool	Version	Brief Description of the Purpose	Responsible for Maintenance Services
Oracle Db	Oracle SQL Developer	20.2	Oracle Database Querying Tool	IOT
Cognos BI (Note: FSSA may switch the BI tool to another solution before or during the Contract term)	Cognos Server	11.1.7	Accessing data and BI reporting out of both OMPP data warehouse and SSDW	EDW Contractor; oversight from D&A
	Cognos Framework Manager	11.1.7	Modeling for Cognos packages.	EDW Contractor; oversight from D&A
	Cognos Transformer	11.1.7	Modeling for Cognos Cubes	EDW Contractor; oversight from D&A
Teradata Db	Teradata Query Grid: Teradata to Teradata	02.18.00.01	Use SQL across two Teradata databases	EDW Contractor
	Teradata BTEQ	17.10.0.3	Database scripting language	
	Teradata FastExport	17.10.0.3	Data exporting	
	Teradata FastLoad	17.10.0.3	Data loading	
	Teradata MultiLoad	17.10.0.3	Data loading	
	Teradata OleLoad	17.10.0.3	Data loading/exporting	
	Teradata SQL Assistant	17.10.0.3	SQL tool for Teradata	
	Teradata TPump	17.10.0.3	Data loading	
	Teradata Wallet	17.10.0.3	Secure password storage	
	Teradata Viewpoint	17.10.0.3	Database monitoring	
	Teradata DSC	17.10.0.3	Database backup	
	Teradata TPT	17.10.0.3	Data loading/exporting	
	Teradata Schema Workbench	17.10.0.3	Schema designer for OLDAP Connector	
	Teradata Studio	17.10.0.3	Database administration	
	Teradata Studio Express	17.10.0.3	SQL tool for Teradata	
	Teradata SQL Assistant	16.20.00.13	Legacy Querying tool	
Informatica ETL	Informatica Developer	10.5.4	ETL	EDW Contractor
	PowerCenter Data Validation Client	10.5.4	Data validation and auditing	
	PowerCenter Repository Manager	10.5.4	Informatica Metadata	
	PowerCenter Studio	10.5.4	ETL	
	PowerCenter Workflow Manager	10.5.4	ETL	
	PowerCenter Workflow Monitor	10.5.4	ETL monitor	
	PowerCenter Designer	10.5.4	ETL	
	Informatica Data Quality	10.5.4	Address validation	
	Informatica Analyst	10.5.4	Data profiling	
	Informatica Metadata Manager	10.5.4	ETL Metadata	
	Informatica Administration	10.5.4	Informatica Admin	

	Informatica Web Services Hub	10.5.4	Web services	
Tableau	Tableau Desktop	2021.4.20	Analytics and Advanced Visualizations	D&A
	Tableau Server	2021.4.20	Analytics and Advanced Visualizations	D&A/IOT
Microsoft SQL Server	Microsoft SQL Server Management Studio	18	Database Management	D&A
Others	Erwin	9.64	Data Modeling	D&A
	WinSCP		SSH File Transfer	D&A
	Microsoft Access	Microsoft 365 MSO Version 2303	Database	IOT
	Microsoft Excel	Microsoft 365 MSO Version 2303	Spreadsheets	IOT
	Microsoft Word	Microsoft 365 MSO Version 2303	Word Processing	IOT
	Microsoft Visual Studio	2022	Custom Process Development	IOT
	Microsoft Visio	Microsoft 365 MSO Version 2303	Diagramming/Vector Graphics	IOT
	Microsoft Project	Microsoft 365 MSO Version 2303	Project Management	IOT
	Windows	Windows 10 Enterprise	Operating System for Desktops	IOT
	JIRA	8.20.15	Issue Tracking/Project Management	FSSA DST
	Confluence	8.1.1	Document repository to maintain SSDW project related documents	D&A
	Windows Server	2016 R2 2019 2022	Operating System for Servers	IOT
	SUSE Linux	SLES 12 SP3	Operating System for Servers	EDW Contractor
	Protegrity	9.1.0.2	Encryption	EDW Contractor
	Notepad ++	8.4.7	Text Editor	IOT
	Microsoft Azure		Used for 1095B & DWD WOTC interface projects	IOT
	AWS Workspace		Remote desktop option to access State network	IOT
	Citrix Virtual Apps and Desktops (PZ)	19.12 CU6	Citrix Protected Zone to access SSDW Apps	IOT Citrix Support Team
	VMWare Horizon Client	5.5.3	Alternate method to access Protected zone apps	IOT
	GoAnywhere		SFTP/MFT Solution	IOT
	MuleSoft		API Management Platform	IOT

Additional Details on EDW Contractor Responsibilities: In addition to the items listed in the above technology tool set, the EDW Contractor must provide a tool with the ability to group raw data into detailed data sets and generate relevant Tableau reports based on those groupings. This functionality will predominantly be used in the OMPP DW area, and Respondents are encouraged to consider that when estimating costs associated with this technology. The State does not require a specific software for the tool that must be used, but any proposed software must contain certain key functionalities, which are listed below:

- a. Ability to take various formats of raw source data and return coherent data sets on different subject matters. These data sets may be used for the purposes of report and dashboard generation, and as standalone outputs. Examples of areas currently using outputs from the existing system include, but are not limited to, the following:
 - Governor’s KPIs
 - SMI/SUD program evaluations
 - Child/Adult coreset reporting to CMS
 - Ad-hoc outcomes reporting
- b. Ability to generate user-friendly Tableau report dashboards relating to various metrics and subject areas based on the aforementioned data sets. Examples of dashboards that may be requested include, but are not limited to, the following:
 - Waiver enrollment and utilization
 - Medicaid enrollment and utilization
 - Claims detail
 - Prescription drug utilization
 - Per member, per month, costs by County
 - Quality measures analysis
- c. Ability to interface with various data marts as needed (See Section 3.2.1 for more information).
- d. Ability to adapt to potential changing informational and reporting needs.

2.4.2 FSSA CAE Technology Tool Set

The State mandates the use of the State-approved technology tool set for the current CAE solution. The CAE Contractor shall manage the installation and configuration of licensed user accounts as required. The tool set is shown in the table below along with a brief description. All listed technology tools are owned by FSSA, but the CAE Contractor shall be responsible for maintaining the tool set but must work with D&A for planning, updates, and upgrades efforts. D&A must provide approval before any changes are implemented.

Env/ Software	Tool	Additional Details on the Purpose
User Portal	Custom software	
JupyterHub	Azure Blob Storage	User persistent volume stores a users’ code, notebook(s), and analysis outcome
JupyterHub	Kubernetes cluster	A cluster of small computing units (virtual machines) that facilitates users’ analytic activities such as data exploring and statistic modeling
JupyterHub	Management Server	A virtual machine server that manages packages and configurations of the Kubernetes cluster
JupyterHub	Container registry	A container registry stores customized images.
JupyterHub	DevOps repository	A collaborative workplace for users to share ideas and thoughts on the project, codevelop the code base, use git for the version control, apply QA tests, etc.

Env/ Software	Tool	Additional Details on the Purpose
CAE Infrastructure & Underlying Components		
Terraform	Infrastructure as Code	Terraform is an Infrastructure as Code (IaC) tool that allows engineers to define their software infrastructure in code.
Azure DevOps	Repos	Azure Repos is a set of version control tools that you can use to manage your code.
Azure DevOps	Pipelines	Azure Pipelines is a cloud-based solution by Microsoft that automatically builds and tests code projects.
Azure DevOps	Terraform	Terraform Azure providers enable you to manage all of your Azure infrastructure using the same declarative syntax and tooling
Azure App Services	Admin Portal	The Azure portal is a web-based, unified console that provides an alternative to command-line tools.
Azure App Services	User Portal	
Azure App Services	Maintenance Service	
Azure App Services	Clam AV	Antivirus software used to scan data in Azure storage accounts.
Azure App Services	CAE Portal	
Azure	Application Gateway	Azure Application Gateway is a web traffic load balancer that enables you to manage traffic to your web applications.
Azure	Container Registry	Azure Container Registry allows you to build, store, and manage container images and artifacts in a private registry for all types of container deployments.
Azure	Azure Firewall	Azure Firewall decrypts outbound traffic, performs required security checks, and then encrypts the traffic to the destination.
Azure	Azure VDI Images that include Windows 10, Office 365, Tableau, and other pre-approved software tools	Azure Virtual Desktop, formerly known as Windows Virtual Desktop, is a Microsoft Azure-based system for virtualizing its Windows operating systems, providing virtualized desktops and applications securely in the cloud.
Azure	Key Vault	Azure Key Vault is a cloud service for securely storing and accessing secrets
Azure	Kubernetes Service (AKS)	Azure Kubernetes Service (AKS) is used to develop and deploy cloud-native apps in Azure datacenters
Azure	Load Balancer	Azure application load balancer distributes incoming traffic among VMs to deliver high availability
Azure	Log Analytics Workspace	A Log Analytics workspace is a unique environment for log data from Azure Monitor and other Azure services
Azure	Azure SQL as a Service	SQL as a service (SQLaaS) is a database hosted in the cloud intended for developers.
Azure	Application Database	Azure SQL Database is a fully managed platform as a service (PaaS) database engine that handles most of the database management functions such as upgrading, patching, backups, and monitoring.
Azure	Storage Account	An Azure storage account contains all of your Azure Storage data objects: blobs, files, queues, and tables.

Env/ Software	Tool	Additional Details on the Purpose
Azure	Azure Networking	A virtual network enables many types of Azure resources, such as Azure Virtual Machines (VM), to securely communicate with each other, the internet, and on-premises network
Azure	Azure Data Factory	Azure Data Factory is a cloud-based data integration service that allows you to create data-driven workflows in the cloud for orchestrating and automating data movement and data transformation.
Azure Automation	Runbooks	Runbooks are stored and managed in Azure Automation and then delivered to one or more designated Hybrid Worker computers.
MuleSoft	API	Mulesoft Anypoint Platform is a cloud-based solution offered by MuleSoft that enables businesses to monitor and manage their APIs (Application Programming Interfaces)
Terraform	Databricks Provider	The Databricks Terraform provider supports all Databricks REST APIs.
Business intelligence and performance reporting	Tableau	Tableau is a visual analytics platform that allows users to visualize data and reveal patterns for analysis in business intelligence, making the data more understandable.

The end users are allowed to bring select tools (preapproved by FSSA and IOT) to conduct their analysis on the CAE data. Examples of such tools are SPSS, SAS, and Tableau.

3 Scope of Services

3.1 Overview

The Contractor shall be required to provide the following M&O services for their respective scopes while meeting service level agreements (SLAs) as described in Section 8. Additional details about several of these services are provided further within this section.

- a. **System Support and Reporting:** Manage processes and procedures required to provide technical and functional support.
 - Perform resolution of all defects discovered and prioritized by the defined processes.
 - Make routine maintenance changes in the ordinary course of the Contractor's provision of services defined within the scope of its Contract (such as changes to operating procedures, schedules, equipment configurations) at no additional cost to the State.
 - Conduct monitoring and analysis of system performance to determine if actions are required to meet or improve on adherence to Service Level Agreements.
- b. **Enhancements:** Design, develop, test, and implement enhancements to the system and reports, including modifications to existing reports, via the integrated change control process (Section 5.4.1). Note: It is the State's expectation that most federally mandated changes are included in the releases and upgrades as part of support and maintenance (described later in this section).
- c. **Service Desk Management:** Manage a service desk to address user requests and troubleshoot issues. Address all questions and reported problems related to the technical and functional operation of the Contractor's respective system.

- d. **Service Requests, Incident and Problem Management:** Properly plan and conduct services to minimize the occurrence of incidents and/or problems with the system and service delivery. If incidents and/or problems are to arise, the Contractor shall work with the State to resolve issues in a timely manner based on the governance plan and priorities of the State.
- e. **Infrastructure/Application Management:** Maintain the infrastructure architecture and tools for all applicable users
- f. **Business Continuity and Disaster Recovery:** The Contractor is required to comply with and maintain existing Business Continuity Plan (BCP) and Disaster Recovery (DR) plans and support FSSA in updating these plans, as applicable, based on the evolution of data, infrastructure/architecture, and tools. This includes an annual disaster recovery exercise.
- g. **Document Management:** Maintain and keep up to date all artifacts.
- h. **System Expertise:** Provide business and technical subject matter expertise on all Data Warehouse managed data and reporting. (The EDW Contractor must provide health data expertise, the EDW Contractor must provide social services and health care data expertise, and the CAE Contractor must provide technical expertise in Azure administration, data science & engineering, business intelligence, and related components, including Medicaid data expertise).
- i. **Access Management:** Assist in the definition of user roles and security configurations, specifically the creation of new roles and monitoring of user access rights in relation to internal requirements. Manage unique logon IDs and security profiles for users authorized by the State, including other contractors, to have access to system and service operations. The Contractor shall maintain the role-based security functionality within the system for production and non-production environments.
- j. **Training:** Provide regularly scheduled training sessions for new state users and refresher training for existing users when needed.
- k. **Medicaid Information Technology Architecture (MITA) Support:** Provide information to the State throughout their support lifecycle regarding applicable MITA maturity of the EDW solution, including maintenance of the conceptual data model and logical data model.
- l. **Data Governance:** Support the establishment, maintenance, implementation and management of a data management strategy, which will include a data governance plan, staff roles and responsibilities, data catalog plan, metadata creation, data quality strategy, data retention standards, and privacy and data security standards in accordance with State and Federal standards

3.2 System Support and Reporting

At a high level, the Contractor will provide the following services:

- a. Provide required reports and business intelligence reporting for State and Federal partners.
- b. Provide State and federally required reports including those for the CMS (e.g., CMS Streamlined Modular Certification (SMC) Reporting), ACF, FNS (e.g., FNS Major Change Reporting), and other State entities (**EDW only**)
- c. Maintain legacy HIP and Medicaid reporting requirements (**EDW only**)
- d. Maintain legacy interface and data sharing requirements.
- e. Support the continuation and finalization of new reporting requirements, as well as maintenance of resulting reports.
- f. Support the continuation and finalization of new interface and data sharing requirements, as well as maintenance of resulting interfaces and data sharing mechanisms.

- g. At a minimum, the Contractor is expected to staff a sufficient number of FTE-equivalent resources to serve in the Business Analyst (or similar) role, adhering to the standards set forth in Section 7 – Staffing. The individual(s) will be expected to support State staff in various ad hoc reporting and data querying requests. The Contractor is expected to train the individual(s) for this role to ensure a strong programmatic understanding of the State’s needs. The Business Analyst(s) are expected to have the technical and quantitative skills required to conduct advanced analytical functions, as well as the qualitative skills to translate programmatic details into meaningful reports and other outputs. The individuals filling this role are expected to have a strong background and experience in the following areas and continue building their subject-matter-expertise during the Contract term:
 - **EDW:**
 - State and Federal Medicaid laws as well as the ability to navigate Medicaid reporting requirements.
 - TANF/Maintenance of Effort (MOE), SNAP, EBT, employment and training programs, eligibility determination, application tracking and redetermination tracking, and related State and Federal laws. For additional information on other FSSA divisions/systems/program areas including but not limited to FSSA Admin, Division of Aging, DMHA, OALP, along with agencies/program areas outside of FSSA including but not limited to IDOH, IDOC, Department of Revenue, and DCS.
 - **CAE:** Medicaid, LTSS, and state government experience is highly preferred. For future data flows, the State prefers the CAE Contractor provide staff with relevant program experience.

3.2.1 Data Warehouse Management

As a part of their responsibilities, the Contractor shall:

- a. Manage Operational Data Stores (**EDW only**).
- b. Manage any Data Marts to act as a summarized subset of the enterprise's data specific to a functional area or department, geographical region, or time period. Data Marts allow State users to create and run their own reports using the summarized subset of the data. The State intends for Data Marts to encourage end user self-service.
 - EDW Data Marts:
 - OMPP DW: Currently there are Data Marts for Medicaid and Medicare claims, Medicaid Eligibility, IMAR, Outcomes, DCS, Estate Recovery, Legislative Services Agency (LSA), and Right Choices Program (RCP), IDOH, Finance, State Agency data, and the EDW vendor’s Tableau reporting (see Section 2.4.1).
 - SSDW: Data marts exist around the following divisional/agency data: SNAP/TANF, Division of Aging, DMHA, OECOSL, DDRS, DCS, IDOH, Finance, and State Agency data.
 - The State expects to expand the OMPP Data Mart and the Division of Aging Data Mart and add additional data to the DMHA Data Mart. The EDW Contractor will be responsible for the expansion and addition of these Data Marts as directed by the State. The State expects to add an informational executive dashboard for SLAs and an additional Opioid Abuse Data Mart.
 - CAE Data Marts (see Section 2.1.3 for additional data flows that may be part of CAE):
 - Long Term Services & Supports (Pathways for Aging) - integrated Medicaid and Medicare encounters and additional data sources into a centralized data model for analytics, Medicare Data Model - integrating Medicare FFS, Medicare Advantage, Part D PDE, Home Health (OASIS), and Supplemental Benefits data.

- Indiana 211 (IN211) – includes caller, interaction, and referral data as well as call volume data streams.
 - INMax (Medicaid data extract) - to provide data scientists the ability to access de-identified Medicaid claims data in a usable structure for analytics.
 - Division of Aging – Master Plan on Aging Data Model integrates programmatic and external data streams to provides insights into elder care within the State of Indiana.
 - DMHA – integrating data for the Certified Community Behavioral Health Clinics and 988 Crisis Hotline call center data.
 - Office of Early Childhood and Out-of-School Learning (OECOSL) - integrating programmatic data into a series of data marts for streamlined analytics and insights based on division’s needs while documenting metadata, pipelines, and data mart based on established frameworks and standards.
 - DDRS – integrating programmatic data into a centralized data mart for streamlined analytics and insights into individuals on FSW, CIH, and SGL programs.
- c. Manage the Development (DEV) and Production (PROD) Databases for ad hoc and joint development purposes and ensure the databases allow users to store results, data information, queries, and procedures.
 - d. Maintain tool development that includes but is not limited to the following: source data extraction and transformation, data cleansing, data load, data refresh, data access, security enforcement, version control/configuration management, backup and recovery, disaster recovery, performance monitoring, database management, platform, data modeling, and metadata management.
 - e. Maintain a notification protocol for all users to report any problem or issue that affects data accuracy or integrity immediately.
 - f. Maintain the current ETL that involves extracting data from outside sources; transforming it to fit operational needs (which can include quality levels); and loading it into the end target (data mart or data warehouse) and resolving pipeline failures to ensure complete data models.
 - g. Manage audit processes and audit trail for historical reference for any records such as deleted records and merged records which complies with Federal laws and guidelines for audits such as annual SAS-70 audit (or its successor), HIPAA Security Rule, compliance with all State and Federal privacy and security regulations.
 - h. Manage the Enterprise Data Store to act as a central repository which supplies atomic (detail-level) integrated information to the whole organization.

3.2.1.1 CAE Management (CAE Scope Only)

CAE is the future of how FSSA will incorporate data as an operating principle of the agency, conduct evaluations and performance monitoring, and embrace and answer etiologic and inferential business questions through advanced analytics. The Contractor shall scale the program as required. As part of their responsibilities for each data flow, the Contractor shall:

- a. Maintain the CAE Infrastructure
 - **Declarative Configuration:** Utilize Terraform's declarative syntax to define the desired state of infrastructure components in a concise and human-readable manner.
 - **Version Control:** Store Terraform configuration files in a version control system (e.g., Git) to track changes, enable collaboration, and ensure a consistent history of infrastructure modifications.
 - **Modularization:** Structure the Terraform codebase into reusable modules that encapsulate specific infrastructure components or patterns, promoting code organization and maintainability.

- **Variables and Input Parameters:** Utilize variables to parameterize configuration values, allowing for dynamic input and configuration customization without modifying the core codebase.
- **State Management:** Configure a remote state backend, such as Terraform Cloud, AWS S3, or HashiCorp Consul, to store the Terraform state file centrally. This enhances collaboration and prevents state file conflicts.
- **Dependency Management:** Define explicit dependencies between resources to ensure proper provisioning order and avoid race conditions during infrastructure deployment.
- **Resource Provisioning:** Leverage Terraform providers to manage resources across various cloud providers, ensuring consistent and reliable infrastructure deployment.
- **Lifecycle Management:** Implement resource lifecycle management using features like `'create_before_destroy'`, enabling seamless updates and replacements of resources with minimal downtime.
- **Remote Execution:** Employ Terraform workspaces to manage multiple environments (e.g., dev, staging, prod) and enable remote execution of Terraform commands while isolating state and configuration.
- **Sensitive Data Handling:** Use Terraform's sensitive data handling mechanisms (such as sensitive input variables or secure environment variables) to manage and protect sensitive information, such as API keys or passwords.
- **Code Review and Testing:** Establish a code review process to ensure the quality, security, and adherence to best practices of Terraform code. Implement automated testing for infrastructure code using tools like Terratest.
- **Documentation:** Maintain comprehensive documentation for Terraform code, describing the purpose, functionality, and usage of modules and configurations. Maintain conceptual and logical data models.
- **Drift Detection and Remediation:** Regularly perform Terraform plan and apply commands to detect and address any drift between the desired and actual infrastructure states.
- **Audit and Compliance:** Implement auditing mechanisms to track changes to infrastructure configurations and ensure compliance with organizational policies and security standards.
- **Backup and Recovery:** Develop strategies for backing up Terraform state files and creating disaster recovery plans to restore infrastructure in case of unexpected failures.
- b. Manage the continued design, development, and implementation of successive waves of expansion following, including necessary infrastructure, governance, process, reporting, and dashboard development.
- c. Provide appropriate experience and staffing related to managing infrastructure as code using the Terraform language, promoting automation, consistency, and scalability in FSSA's infrastructure management processes. These general requirements include, but are not limited to:
 - Azure Cloud Services
 - Databricks Engineering
 - Data Science Capabilities
 - Tableau Developers
 - Policy Analysis
 - Project Management and Agile Framework
 - Performance Measurement and Outcomes
- d. Provide support and expertise in Azure Cloud Administration requiring a combination of technical skills and knowledge across various areas of Microsoft Azure cloud services and administration practices. The following are essential technical skill sets:

- **Azure Services Knowledge:** Have a solid understanding of a wide range of Azure services, including compute, storage, networking, databases, analytics, security, and identity management.
 - **Virtualization and Networking:** Proficiency in virtualization concepts including hands-on experience with Azure Virtual Machines, Virtual Networks, Load Balancers, and Azure Firewall.
 - **Azure Resource Management:** Mastery of Azure Resource Manager (ARM) templates for infrastructure deployment and management as code.
 - **Identity and Access Management:** Familiarity with Azure Active Directory (Azure AD), role-based access control (RBAC), conditional access policies, and single sign-on (SSO) configurations.
 - **Azure Security:** Knowledge of Azure Security Center, Azure Policy, Azure Key Vault, and best practices for securing Azure resources and data.
 - **Azure Storage Solutions:** Understanding of Azure storage services such as Azure Blob Storage, Azure Files, Azure Disks, and Azure Backup.
 - **Azure Networking:** Ability to configure and manage Virtual Networks, Subnets, Network Security Groups, VPN Gateway, ExpressRoute, and Azure Load Balancer.
 - **Azure Monitoring and Logging:** Proficiency in Azure Monitor, Azure Log Analytics, Application Insights, and setting up alerts and diagnostics.
 - **Azure Databases:** Experience with Azure SQL Database, Azure Database for MySQL, PostgreSQL, and other database services.
 - **Azure DevOps and CI/CD:** Understanding of Azure DevOps for continuous integration and continuous deployment (CI/CD) pipelines, including configuring build/release pipelines.
 - **Backup and Disaster Recovery:** Knowledge of Azure Site Recovery, Backup Vaults, and strategies for ensuring data availability and recovery.
 - **Azure Governance:** Familiarity with Azure Policy, Blueprints, and Resource Graph for enforcing organizational standards and policies.
 - **Scripting and Automation:** Proficiency in scripting languages like PowerShell and/or Azure CLI for automating administrative tasks.
 - **Troubleshooting and Debugging:** Strong problem-solving skills and the ability to diagnose and resolve issues related to Azure services and configurations.
 - **Containerization and Orchestration:** Basic understanding of Azure Kubernetes Service (AKS) or other container orchestration platforms for deploying and managing containerized applications.
 - **Cloud Cost Management:** Awareness of Azure Cost Management and tools to monitor and optimize cloud spending.
 - **Soft Skills:** Effective communication, teamwork, and a willingness to learn and adapt as new Azure features and updates are released.
- e. Complete reporting requests to comply with state and federal requirements as necessary and monitor program performance and success.
 - f. Support additional Special Projects and Ad Hoc Requests.
 - The Contractor shall maintain sufficient staffing levels to manage Business Intelligence requests for Medicaid, special project requests, and other agency division ad hoc reporting requests.

3.2.1.2 CAE Management – LTSS Data System (CAE Scope Only)

Indiana is reforming its delivery of long-term services and supports to remove barriers that prevent Hoosiers' from choosing where they age, to increase and incentivize quality, to create outcomes-focused care, and to manage the high cost of LTSS for the growing population of older adults. LTSS encompasses health and social services that assist individuals with functional limitations due to physical, cognitive, or mental illnesses and/or disabilities. LTSS can be delivered in institutional (i.e., nursing facilities) or home and community-based settings.

To address Choice, Cost, and Quality, FSSA's vision is to improve LTSS delivery for Hoosiers so that by 2024 at least 75% of new members who receive LTSS services receive them in a home and community-based setting (HCBS). To achieve this objective, Indiana pursued the following five key results, one of which was to create an integrated LTSS data environment, linking individuals, providers, facilities, and the state to measure outcomes across the LTSS spectrum.

To facilitate data-sharing in support of programmatic outcomes, FSSA recognized the need to make immediate improvements to its view of data across the LTSS spectrum. As a result, in 2022, FSSA developed the LTSS surveillance plan. The plan identified and validated performance and operationally focused short and long-range data strategy including defining data sources, interfaces, specifications, flows, and key gaps for the baseline, process, and outcomes metrics needed to support operational surveillance of the LTSS reform.

Key activities conducted during the assessment and planning of the LTSS surveillance plan included the following:

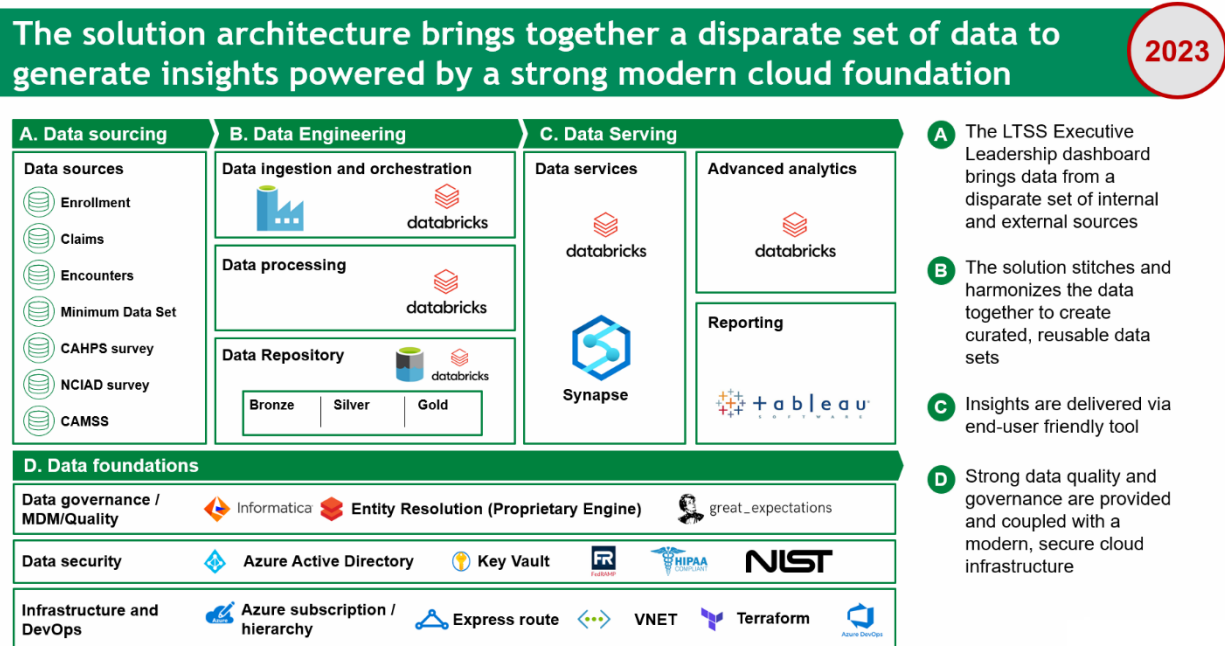
- a. **Measure needs and relevance:** Level of measure, relationship to program/policy, establish benchmark/standard, VBP, Equity, SDOH, Evaluation
- b. **Measure definition:** Included/excluded, numerator, denominator, timeframe
- c. **Data source/s:** primary or secondary, internal or external, existing system capability or change requirements, partner reporting requirements, third party collection, direct from consumer
- d. **Data velocity:** Timing and speed of data collection or reporting meets the need
- e. **Data specificity:** Data structure meets current and future needs, allows for person-, provider-, facility-, and health plan-centric longitudinal assessments
- f. **Data exchange:** How does the state receive and consume data? From whom?
- g. **Data governance:** Ownership, stewardship, quality, access, sharing, privacy and security; and
- h. **Data product/s:** Audience and type: Technical report, dashboard, evaluation, analytics/modeling, decision support/situational awareness, scorecards, notifications, extracts, etc.

The State is continuing design, development, and implementation of successive waves following the initial DDI work, including necessary infrastructure, governance, process, reporting, and dashboard development. The Contractor shall execute the following as part of their responsibilities to achieve the LTSS integrated data goals:

- a. Prioritize and implement required FSSA system changes to capture data required for data plan, identify, prioritize, assign ownership to any required population-based survey data, and identify, prioritize, and define granularity of data required to be shared by enrollment brokers and/or managed care.
- b. Support implementation of a holistic data model to support infrastructure, metadata scanning, role assignment, business curation, data quality, and data lineage for all LTSS assets, business engagement, and project management, translation of business requirements into technology approach.

- c. Support infrastructure development and engineering modern data pipelines, network security, database hosting and management, data transformation, storage/staging/load/compute/delivery for record linkage, continuous integration/continuous deployment, disparate system/source integration through common data model, managed file transfers and API connectivity, data mart/extract construction, automated data quality and pipeline assessments.
- d. Create data dashboards, data management, data quality monitoring, business process integration, user training, and situational awareness.

The picture below provides a high-level view of the LTSS data flow architecture.



3.2.2 Information Management

The Information Management section addresses the areas of data governance, architecture, models, standards, and handling of the information for the FSSA. Further breakdown of information management responsibilities is described in this section.

3.2.2.1 Data Governance

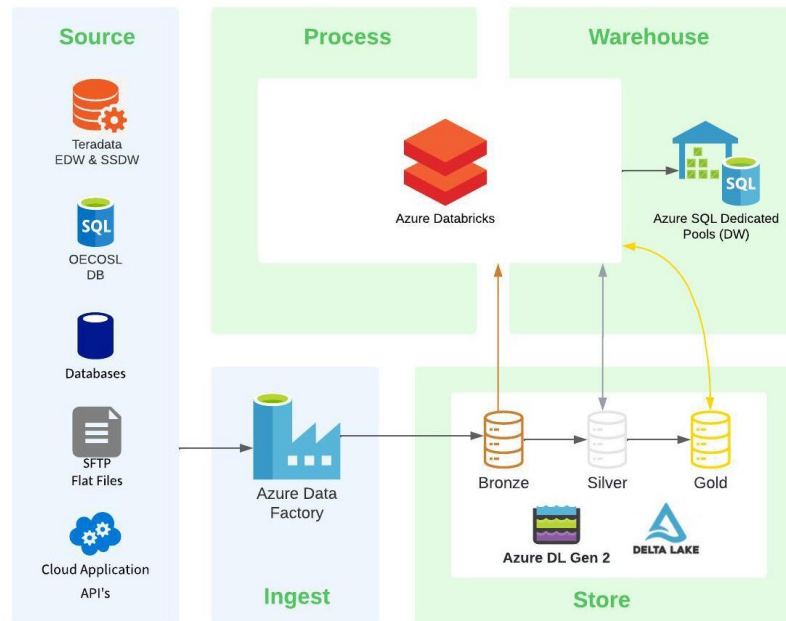
The Contractor shall maintain the data governance plan, data standard adoption process, data quality strategy, data retention and backup standards (State and Federal), data ownership standards, data security standards, and arbitration protocol set in place by the State.

3.2.2.2 Data Architecture

The Contractor shall maintain the standard data-management procedures for the State's data models to include but not be limited to the maintenance of the following:

- Data architecture
- Data dictionary
- Data model
- Business rules

- Data quality and lineage
- Data architecture plan
- Any other relevant design and schematics documents
 - Medallion Data Architecture (CAE Scope Only). Please see the Medallion structure as reference.



Please see Attachment O for the current EDW Data Dictionary (Meta Data Manager). The SSDW Data Dictionary can also be found in Attachment O.

3.2.2.3 Data Sharing Architecture

The Contractor shall:

- Maintain the data-sharing architecture, definitions, schemas, dictionary, directory, and environmental standards to include but not be limited to data, applications, and infrastructure.
- Manage conceptual and logical mechanisms used for data sharing to include but not be limited to data hubs, repositories, and registries.
- Manage the data sharing data semantics, harmonization strategies, and ownership policy and procedure.
- Maintain the data sharing security and privacy policy and procedure and quality standards.
- Manage data exchange requirements, the service interface standards, and service interfaces.
- Create and maintain interfaces with internal and external entities.
 - **EDW:** Indiana Medicaid Enterprise and systems and social services information network
 - **CAE Scope:** Interfaces through a lot more channels (electronic file transfers, APIs, SFTP, direct database connections (on-prem + cloud data stores))
- Exchange data with Federal entities to include but not be limited to:
 - **EDW:** CMS, ACF, FNS, other external sources and other public information sources
- Ensure all outbound data exchange shall meet timeliness and accuracy standards agreed upon by Contractor and State.

3.2.2.4 Conceptual Data Model

The Conceptual Data Model provides a mechanism to bridge the gap between subject matter experts and IT architects and designers. The model depicts the major business information objects (subjects/entities) in their relationships to each other using business terminology. The Conceptual Data Model has the following associated data: Entities, Relationships, Definitions, Domains, Related Standards, and Entity-Relationship Diagrams.

As a part of the model, the Contractor shall manage the Conceptual Data Models, standards, entities, relationships, definitions, domains, and entity-relationship diagrams.

3.2.2.5 Logical Data Model

The Logical Data Model provides policy and procedure for the establishment and maintenance of the following: physical data model, the business model, and the reengineering of business processes. The Logical Data Model has the following associated data: Entities, Relationships, Definitions, Domains, Related Standards, and Entity-Relationship Diagrams.

The Contractor shall manage the Logical Data Model, including the following responsibilities:

- a. Manage the logical and physical data model, standards, entities, relationships, definitions, domains, and entity-relationship diagrams.
- b. Manage the established business model standards.

3.2.2.6 Data Standards

The data standards provide a syntactic and semantic understanding of the State's data and information. As a part of data standards, the Contractor shall:

- a. Manage the metadata development and maintenance approach, metadata, and standards.
- b. Manage the data standards (specify how data should be formatted or structured).
- c. Manage the structure data standards. The structure data standards and vocabulary data standards include the following: Title, Category, Objective, Source, Type, Version, Status, Applicability, Classification, References, relationships to other standards, and Key Terms.
- d. Manage the vocabulary data standards (i.e., specify what the meaning of the data is).
- e. Publish and maintain the metadata standards, data standards, structure data standards, and vocabulary standards.

3.2.2.7 Manage Information

This section discusses the management of State information, including but not limited to member, provider, payment, and program data and information.

- a. **Manage Member Information:** Managing member information encompasses managing all aspects of the member data, which is the source of comprehensive information about applicants and members and their interactions with the Medicaid Enterprise. Member information includes but is not limited to member demographic, financial, socio-economic, and health status information.
- b. **Manage Provider Information:** Managing provider information addresses managing all operational aspects of the provider data store, which is the source of comprehensive information about prospective and contracted providers, and their interactions with the State. The provider data store will encompass provider demographic, business, credentialing, enumeration, performance profiles, payment processing, tax information, and all other provider data and information.

- c. **Manage Payment Information:** Managing payment information includes managing all the operational aspects of the payment information data store, which is the source of comprehensive information about payments made to and by the State for healthcare services.
- d. **Manage Program Information:** Managing program information addresses managing all the operational aspects of the program information data store, which is the source of comprehensive program information that is used by all business areas and authorized external users for analysis, reporting, and decision support capabilities required by the enterprise for administration, policy development, and management functions. Program information will include all data and information required by the State, Federal stakeholders, business areas, and any other applicable stakeholder.
- e. **Manage Information Requirements:** The Contractor shall:
 - Adhere to the current data and information development and maintenance approach.
 - Adhere to the data and information standards.
 - Capture data and information from multiple sources as specified by State, Federal, and business areas.
 - Validate that the data and information is received from an authorized entity as specified by State, Federal, and business areas. Validate the data and information and determine if data and information validation is successful as specified by State, Federal, and business areas.
 - Apply data and information hierarchy prioritization process in accordance with the State, Federal, and business specifications.
 - Accept the data and information into the system in accordance with the State, Federal, and business specifications.
 - Notify impacted processes and other stakeholders of the acceptance of the data and information.
 - Associate data and information in accordance with the State, Federal, and business specifications.
 - Establish an audit trail for data and information in accordance with State, Federal, and business area specifications.
 - Update data and information sets with newly requested data and information in accordance with State, Federal, and business area specifications.

3.2.3 Decision Support Systems and Reporting Requirements

3.2.3.1 Decision Support Systems User Interface

The Decision Support Systems include front-end and query tools and interfaces. The front-end tools support multiple levels of users, ranging from executive users to developers. State authorized software developers have access to all tool sets.

The Decision Support Systems include appropriate privacy and security features to allow for the sharing of data among State agencies. This also includes the support of de-identified data logic so that members receiving services from multiple agencies can be “linked” without violating any HIPAA, State, and Federal statutes.

The query interface tool set includes a user-friendly graphical query language tool to construct database queries that accommodate varying levels of user skills (from the basic, occasional user to the power user). There is an online library/catalog for storage and retrieval of standardized or frequently used queries, with security levels (creator, user, read-only) to eliminate inadvertent changes to the query. It has online capability for specifying query selection criteria (data element-specific for ad hoc queries), query computation, sort, and format (report presentation) characteristics and the capability to save and view or print the criteria used in the query.

The Contractor shall be required to maintain their respective Decision Support System Interfaces. As a part of the Decision Support System User Interface management, the Contractor shall:

- a. Maintain the Decision Support System solution, development and maintenance approach, and Help Desk.
- b. Maintain a training plan to help users to effectively utilize the Decision Support System.
- c. Maintain application availability as defined by the State.
- d. Maintain the user interface(s) for the Decision Support System that allows users to develop reporting that can support multiple levels of users utilizing a structured query language. Notify the State of any issues with the User Interface within one (1) hour of detection of the issue.
- e. Manage tool development and maintenance approach for Decision Support System tools.
- f. Manage the procedure development and maintenance approach, the Decision Support System procedures, and the Decision Support System solution.
- g. Maintain a notification protocol for all users to report any problem or issue that affects data accuracy or integrity immediately.
- h. Maintain the State's authentication protocol.

3.2.3.2 Data Analytics

The Decision Support Systems provide a wide range of analytic capabilities that allow for quantitative and qualitative analysis of data that meet industry standards. As part of Data Analytics, the Contractor shall:

- a. Manage the State's current methodology for the development and maintenance of the data analytic capabilities.
- b. Maintain analytic capabilities that include but are not limited to the following: data summarization, data comparison, forecasting, trending, and statistical analysis.
- c. Maintain qualitative analytic capabilities and geo mapping functionality within the analytic capabilities.
- d. Address identified necessary program changes.
- e. Conduct modeling and analysis activities to manipulate and review what-if scenarios, identify impact of potential changes, and analyze potential program additions, modification, or deletions for fiscal impact.
- f. Manage required program monitoring, quality and management reports per business area need, reporting for fiscal impact statements, and mechanisms that will track activity and effectiveness at all levels of monitoring.
- g. Perform "what if" impact analysis.

EDW Only:

- a. Manage Healthcare Effectiveness Data and Information Set (HEDIS) and HEDIS-like reporting.
- b. Determine cost effectiveness by collecting information such as policy coverage and past usage to anticipate future needs.

3.2.3.3 Data Visualization

The Decision Support Systems provide a range of dynamic data visualization capabilities, such as charts, graphs, and diagrams. The Contractor shall be required to support Data Visualization, which includes the following responsibilities:

- a. Maintain the methodology for the development and maintenance of the data visualization and presentation capabilities.
- b. Support data visualization that includes but is not limited to the following: interactive graphical representation, dashboarding, and dynamic drill down capabilities.
- c. Support data presentation that includes but is not limited to: editing capabilities, capability to interface with a variety of printers, and the ability to support a variety of formats and output options, such as Word, Excel, HTML, Access database, or GUI format.
- d. Maintain data visualization and presentation capabilities.

3.2.3.4 Reporting Overview

The Contractor shall be required to support all reporting needs of their respective scope. As part of the reporting responsibilities, the Contractor shall:

- a. Maintain existing reports and data extracts.
- b. Develop, test, implement, and manage new recurring reports in a timely and accurate way in accordance with standards agreed upon by the Contractor and the State.
- c. Develop ad hoc reports when requested. For example, for EDW, the SSDW also supports a wide range of ad hoc report requests within FSSA, including DFR Management and DFR Program Policy report requests related to eligibility, maintenance of eligibility, employment, employment supportive services, and work participation.
- d. Develop recommendations for ad hoc reports that should be moved into production.
- e. Adhere to State, Federal, or business area defined format and distribution methodology.
- f. Ensure that report requests are documented and validate that the delivered report meets the requester's requirements for content, format, quality, and timeliness.
- g. Notify the requester when report timeliness or quality standards cannot be met.
- h. Store production reports based on the State's existing protocol.
- i. Store historic reports in accordance with State, Federal, and business area retention schedules.
- j. Review reporting and extract formats, criteria, coding, and distribution vehicles in order to ensure that they continue to meet State, Federal, and business area standards.
- k. Capture requests for reporting and track and report on the status of each data and reporting request.
- l. Revise existing measures, reports, and extracts when requested.
- m. Track reporting utilization and demand.
- n. Maintain detailed documentation for reporting/extract logic and design.

EDW Only:

- a. Provide care management reporting and any other reporting as needed to help to secure and retain CMS certification for OMPP. Please see Section 4.3 for more information on the support that the EDW Contractor must provide for CMS certification. The Contractor will be required to go through a certification process beginning at the time of Contract signing. The Contractor will also be expected to maintain and adhere to the system security requirements.
- b. Work with DFR/TANF Program Policy as needed concerning TANF data discrepancy errors received from quarterly report submission.
- c. Submit requests for Live Federal Tax Information (FTI) Data Testing Request Form to IRS every 3 years to seek their approval for using FTI in pre-production testing activities.
- d. Support Audit Reporting as needed for ACF (DFR/TANF), State Board of Accounts (DFR/TANF/SNAP EBT), CMS, FNS, DMHA, SSA/OCSE, and IRS (DCS/Child Support).

CAE Contractor Only:

- a. Work with data pipeline stakeholders in the development of dashboards and reports that support the program's goals and objectives.
- b. Maintain and support:
 - o LTSS surveillance plan dashboards, data quality reports, executive briefings, data storytelling, statistical analysis, proactive signal detection and investigation, and MCE reporting dashboards and reports.
 - o IN211 public resource and client interaction dashboard and call volume streaming dashboards.
 - o Expedited Waiver Eligibility program monitoring.
 - o Indiana dually eligible dashboard and Medicare data model.
 - o DMHA, DDRS, OECOSL data dashboards and automated reports, Other divisional business uses (planned).
- c. Data Quality & Dashboards and monitoring Tableau server usage and viewer statistics.

3.2.3.5 Reporting

The number of reports shown below in this section are estimates and serve to give potential Respondents insight into the reporting types and volume. As reports are continually created, these figures are expected to evolve over time.

3.2.3.5.1 Recurring Reports

During the Initial Transition Period (the time before the incumbent vendor transfer responsibilities over to the newly awarded Contractor), the Contractor shall work with the State to clarify the report delivery deadlines for each recurring report.

- Number of reports: As of August 2023, the State has identified the following unique “recurring” EDW reports. Please note that in Cognos, each summary and detail/drill-thru report is a separate report build and each are therefore included as unique reports in the figures below:
 - o There are 50 OMPP DW reports that are financial and CORE MMIS converted reports for select users.
 - o There are 583 recurring SSDW reports. Please see The SSDW Environment Document Appendix B (Attachment O) for a listing of the 583 recurring SSDW reports and their required submission frequency.
 - o There are 86 reports run by D&A on a recurring basis. These will be managed and delivered by the D&A.
 - o The figures above do not include reports that end users run independently. For instance, the Management Performance Hub team has a user log-in and runs reports on their own.
- Volumes: In 2022, there were 54,407 runs of recurring reports generated for the EDW, of which 25,795 were generated for the OMPP DW and 28,612 were generated for the SSDW; and 225 recurring reports for the CAE scope. The State anticipates that the migration to a cloud environment will affect the volume of EDW report runs required as a business process, resulting in fewer runs required for reporting. The State expects an increase in the CAE scope reports as the CAE grows in data systems.

In addition to the regular reports run by the Contractor, the State teams shall also be granted access to the reporting system in order to run reports themselves as needed. Of the total OMPP DW recurring report runs, 309 were generated by the D&A team of which 216 originated from OMPP.

It is the State's expectation that these volumes will continue to grow as new reports are created. The State estimates that the volume of reports will grow by an estimated 10-20% annually.

- Annual Report: In addition to the above standard recurring reports, the Contractor shall produce an annual report at the end of each fiscal year for the duration of the contract. The annual report shall include, at a minimum, the following, but may include additional key metrics at the State's discretion:
 - A spend analysis comparing final yearly costs against anticipated yearly costs.
 - A Summary of all change orders from the year.
 - A Summary of all performance reporting completed for the year.
 - Recommendations for process, or any other, improvements, including analysis of improvements and actionable items that have been implemented as a result.
 - Forecasted spending for the remainder of the Contract term, based on enhancements requested by the State.
 - Rollup of SLA metrics compliance.

Attachment O contains a full listing of the EDW reports.

3.2.3.5.2 Ad Hoc Reports

Deadlines for ad hoc reports shall be determined by the State according to a scale of urgency.

- Type 1: One (1) - Two (2) business days turnaround time
- Type 2: Five (5) business days turnaround time
- Type 3: Ten (10) business days turnaround time

The potential need for ad hoc reports on an emergency basis may arise, in which case the production of such report is expected to take less than one (1) to two (2) business days. This is expected to occur infrequently. Some ad hoc reports are run by the D&A team and the Contractor shall provide assistance to the D&A team with the generation of ad hoc reports as needed.

In 2022, 58 ad hoc reports were generated for the OMPP DW by the D&A team, of which 45 originated from the incumbent OMPP DW vendor's embedded Medicaid team and 13 originated from D&A. In addition, 64 ad hoc requests were completed by the incumbent SSDW Contractor, and 225 ad hoc requests were completed by the CAE Contractor.

3.2.3.5.3 Overview of Reports

Below is a high-level summary of the key recurring reporting needs. Please see Attachment O for a full listing of the EDW reports.

High Level Overview of OMPP DW Reports

- Center for Medicare and Medicaid Services (CMS) reports
 - Example: Produce the CMS-416 report including State-defined criteria, such as the number of children provided child health screening services, the number of children referred for corrective treatment, the number of children receiving dental services, and the State's results in attaining goals set for the State under section 1905(r) of the Act provided according to a State's screening periodicity schedule.
- Transformed Medicaid Statistical Information System (TMSIS) reports
 - Data sets for TMSIS reports to include the following adjudicated claims: inpatient hospital, long term institutional care, prescription drugs, and other origins.
 - Merge into TMSIS data from outside sources, if required, such as capitation payment records from enrollment process, eligibility characteristic data from eligibility intake process, Medicaid services processed by non-MMIS State departments, such as mental health services, and utilization based on Managed Care encounter.
 - Provide TMSIS tapes for submission in accordance with the tape delivery schedule.
 - Maintain encounter data in appropriate claim file.
 - Follow eligibility reporting guidelines (see <https://www.medicaid.gov/medicaid/data-and-systems/macbis/tmsis/index.html> for TMSIS Data Dictionary information).
- Federal Budget and Expenditure Reporting (CMS-21, CMS-372, CMS-64, and Incurred but not Reported (IBNR) expenditure report)
 - Show detail for all feeder forms required to be entered into the CMS Medicaid Budget Expenditure System (MBES). The reports are customized to show the total computable amounts entered into the MBES for each federal share column of the CMS-64/CMS-21 and only show lines with expenditure activity for each quarter.
 - Report the breakout of weekly Indiana Health Care Program expenses by program and waiver Medicaid Eligibility Group (MEG). The report matches total expense issued for the week with all weeks in a quarter summing to the totals reported on the CMS-64 for the program/MEG. Monthly and quarterly summaries of the Weekly Payment Summary reports are also needed.
 - The claims data is pulled in from the MMIS for fee-for-service claims and pharmacy claims are pulled from the Pharmacy Benefit Manager (PBM) system. These are combined with managed care claims. Thus, all of Medicaid claims information resides in the EDW and forms the basis of Medicaid financial reports.
 - These reports described above are dynamic reports whose format are continuously revised per CMS directives, such as adding a service or procedure. The Contractor will proactively monitor CMS directives and bring the State's attention to any changes needed to comply with new directives.
- Children's Health Insurance Program (CHIP) reports
- Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) reports
- Health Management Systems (HMS) reports
- Home and Community Based Services (HCBS) Waiver reports, including the CMS-372 and CMS-372S Annual reports on Home and Community Based Waiver Reports, for any HCBS Waivers that exist in accordance with CMS requirements
- Indiana Automated Information Management (AIM) reports (these may be phased out with the CORE MMIS conversion completion)
- Information to support Diagnosis Related Group (DRG) audits
- Managed Care Entity reports
- Management and Administrative Reporting Subsystems (MARS) reports
- Office of Inspector General (OIG) reports
- Payment Error Rate Measurement (PERM) reports

<ul style="list-style-type: none"> ● Pharmacy Benefits Management (PBM) reports ● Program Waiver reports ● Quarterly enrolled provider file by County, by specialty ● Quarterly Dental Reports ● Surveillance and Utilization Review (SUR) reports as defined in 42 CFR 456.654
High Level Overview of SSDW Reports (detailed listing is in Appendix B of Attachment O in the SSDW Environment Document)
<ul style="list-style-type: none"> ● DFR reports (TANF, P-EBT, SNAP, SNAP Fraud, WIC, IQ (Intranet Quorum) Dashboard) ● OMPP reports (CMS Performance Indicators, Healthy Indiana Plan, Department of Correction Medicaid, Estate Recovery, My Healthy Baby (MHB), 1095-B, Public Health Emergency (PHE), other OMPP reports) DWD Reports ● OECOSL Reports (Licensing, Quality, Finance, Subsidy, On My Way Pre-K, background check, and audit reporting, ● Division of Aging reports (CaMSS reports, CHOICE reports) ● DMHA reports (TEDS Reporting/Dashboard, SDOH Reports) ● DCS Child Welfare (Community Partners/Healthy Families) reports and Child Support Bureau reports ● OALP reports ● Social Determinants of Health (SDOH) reports ● KPI reports ● FSSA Finance reports
High Level Overview of CAE Reports
<ul style="list-style-type: none"> ● IN211 call center and call volume reports ● IN211 legislative reports ● IN211 public dashboard (https://in211.communityos.org/datadashboard) ● LTSS surveillance plan dashboards (currently 79 metrics, will be more by go-live in July 2024) ● Pathways and OMPP MCE reporting reports ● Consumer Assessment of Healthcare Providers and Systems Home and Community-Based (CAHPS HCBS) survey report ● LTSS executive briefing and business intelligence (planned) ● LTSS public dashboard (planned) ● Medicaid Enrollment and Disenrollment public dashboards ● Bureau of Development Services dashboards and internal reports ● Medicaid and Aged and Disabled Expedited Waiver eligibility reports and dashboard ● DMHA competency restoration reports

3.2.3.5.4 Data Extracts

The Contractor will be required to complete data extraction from various internal and external source systems using the State's Informatica ETL software, Azure Data Factory, or Azure Databricks (method may be Scope-dependent) based on the State's developed data governance plan. Data extracts can be inbound, outbound, or bidirectional depending on the stakeholder. The inbound data extracts are from various source systems or divisional databases. Outbound data extracts compile predefined information that is sent to clients and customers based on their unique needs. The Contractor will be required to maintain data extract interfaces. Note: not all data extraction is conducted automatically through an interface. Currently, other methods such as manual data transfer are also used. The Contractor shall also offer the flexibility to handle all FSSA delivery protocols, including MuleSoft API Management, GoAnywhere MFT, BizTalk, and Secure FTP.

- **Memorandum of Understandings:** FSSA has memorandums of understanding (MOU) with external agencies for data extracts necessary for program reporting. The EDW Contractor shall be required to support the requested data extraction based on the State's developed data governance plan. The table below includes the majority of the MOUs that apply to the EDW Contractor.

#	Data From	Data To	Description	Frequency	Area
1	FSSA-OMPP	IDOH-MCH	Prenatal and Postnatal Medicaid Claims	Daily	OMPP DW
2	FSSA-DFR	IDOH-CSHCN	IHCP enrollees, including TPL	Weekly	SSDW
3	FSSA-OMPP	IDOH-HIV	Eligibility for MA & TANF	Daily	OMPP DW
4	FSSA-OMPP	IDOH-HIV	Eligibility for MA & TANF	Annually; Monthly	OMPP DW
5	FSSA-OMPP	IDOH-Immunization	MA ages 0-18	Monthly	OMPP DW
6	FSSA-OMPP	IDOH-Lead	Blood lead data match (2-way)	Monthly	OMPP DW
7	FSSA-OMPP	IDOH-Lead	Blood lead data match (2-way)	Real-time	OMPP DW
8	IDOH-Vital Records	FSSA-DFR	Newborn records	Weekly	SSDW
9	IDOH-Vital Records	FSSA-DFR	Newborn records	Daily	SSDW
10	FSSA-DFR	IDOH-WIC	Medicaid, SNAP and TANF eligibility	Monthly	SSDW
11	IDOH-Vital Records	FSSA-Audit	Birth and Death records	Upon request	SSDW
12	IDOH-Vital Records	FSSA-Estate Recovery	Death records	Monthly	SSDW
13	IDOH-Vital Records	FSSA-DMHA	Death records	Daily	SSDW
14	IDOH-Vital Records	FSSA-DDRS (BQIS)	Death records	Upon request	SSDW
15	IDOH-Vital Records	FSSA-Aging (QAQI)	Birth and Death records	Daily	SSDW
16	IDOH-Vital Records	FSSA-Aging (CaMSS)	Death records	Monthly	SSDW
17	IDOH-Vital Records	FSSA-OMPP	Mortality	Monthly	OMPP DW
18	FSSA-OMPP	IDOH-MCH	Obstetric Navigator	Daily	OMPP DW
19	FSSA-OMPP	IU Bowen Center	Primary Care Provider Data	Annually	OMPP DW
20	FSSA-OMPP	IDOH-MCH	Social Determinants of Health	Annually	OMPP DW

#	Data From	Data To	Description	Frequency	Area
21	FSSA	IDOH Vital Records	Maternal Opioid Misuse Indiana Initiative	Quarterly	OMPP DW
22	FSSA	IDOH Vital Records	Maternal Opioid Misuse Indiana Initiative	Daily	OMPP DW
23	FSSA-OMPP	[Hemophilia treatment center], IDOH, [Research vendor]	Sickle Cell Data Collection Program	Annually	OMPP DW
24	FSSA-OMPP	IDOH	Indiana Maternal Mortality Review Committee (MMRC)	Monthly or annually as required by law	OMPP DW
25	IDOH-DOA	FSSA-DA	Behavioral Risk Factor Surveillance System (BRFSS)	Annually	OMPP DW
26	FSSA-OMPP	IDOH CRDS	Claims for Asthma services	Annually	OMPP DW

Additional Details on OMPP DW Inbound Data Extracts. The OMPP DW acquires inbound data extracts from the following stakeholders. The EDW Contractor shall be required to support the requested data extraction based on the State's developed data governance plan.

Data Sources	Source	Data Sets	Refresh Frequency	Data Span/Volume
CORE (MMIS)	[MMIS Vendor]	Paid Claims, Denied Claims, Encounter Claims, Provider Eligibility, Member Eligibility, TPL, Prior Authorization, Care Coordination, Eligibility Data, and Reference Data	Weekly	Claims history: ~ 13 Years Total claim volume: 2 Billion
PBM	[PBM Vendor]	Pharmacy Claims	Weekly	Claims history: ~ 15 Years Total claim volume: 900 Million
Drug Reference	[Data Vendor]	Drug Reference	Weekly	
Estate Recovery	[Actuarial Vendor]	Historical Estate Recovery Claims	One-time	Claims data since 1994
IHIE	[IHIE Vendor]	OB Navigator	Daily	
ICES	[System Vendor]	Selected Eligibility Data	Monthly	
Pharmacy	[Health Plan 1]	Pharmacy Claims	Weekly	Source since Feb. 2016

Data Sources	Source	Data Sets	Refresh Frequency	Data Span/Volume
HNS	[Health Plan 1]	Health Needs Survey	Monthly	
Pharmacy	[Health Plan 2]	Pharmacy Claims	Weekly	Source since Jan. 2017
HNS	[Health Plan 2]	Health Needs Survey	Monthly	
Pharmacy	[Health Plan 3]	Pharmacy Claims	Weekly	Source since Feb. 2016
HNS	[Health Plan 3]	Health Needs Survey	Monthly	
Pharmacy	[Health Plan 4]	Pharmacy Claims	Weekly	Source since Feb. 2016
HNS	[Health Plan 4]	Health Needs Survey	Monthly	
TBQ	CMS	Member	Daily	
DSNP Encounters	DSNP	Encounters	Daily	
Cohorts	[Medical Services Provider 1]	Metabolic Screening data	Monthly	
Cohorts	[Medical Services Provider 2]	Metabolic Screening data	Monthly	
Cohorts	[Medical Services Provider 3]	Metabolic Screening data	Monthly	
Cohorts	[Medical Services Provider 4]	Metabolic Screening data	Monthly	
Cohorts	[Medical Services Provider 5]	Metabolic Screening data	Monthly	
Cohorts	[Medical Services Provider 6]	Metabolic Screening data	Monthly	

- Additional Details on CORE MMIS Outbound Data Extracts (EDW Only):** The OMPP DW manages outbound data extracts that are sent to the following stakeholders. There are also additional customized extracts run regularly for specific stakeholders. Please see the chart below for a full list of Core MMIS data extract recipients. The EDW Contractor shall be required to support the requested data extraction based on the State developed data governance plan.

Stakeholder	Frequency	Description of Data
CaMSS	Monthly	Claims and Spenddown Liability
BDDS	Weekly	Claims and Spenddown Liability
[State Vendors]	Monthly	Member eligibility, provider eligibility, claims data and financial data for all populations; Financial – Capitation History and Admin Fees
OIG	Monthly	Member eligibility, provider eligibility, claims data and financial data for all populations; Financial – Capitation History and Admin Fees
[State Vendor]	Annually	Member eligibility, provider eligibility, claims data, and TPL for HHW and HIP populations
SSDW	Monthly	Data for PRTF Reports

Stakeholder	Frequency	Description of Data
T-MSIS	Monthly	8 Files; 4500 + Data Elements
EGov	Weekly	Provider data
IDOH	Weekly/ Monthly	Prenatal and postpartum claims
Transparency Dataset	Annual	Claims file
DCS	Monthly	Psychotropic claim and membership
DMHA (CMT)	Monthly	Member eligibility, provider eligibility, claims data, Metabolic Screening data from Cohorts
PBM Vendor	Monthly	Claims data for Rebates
PBM Vendor	Monthly	Claims data
HMS	Monthly	Member eligibility, provider eligibility, claims data
[Health Plan 1]	Weekly	ESSR & ADPaR, RCP, MRO Extracts, FFS- Managedcare
[Health Plan 2]	Weekly	ESSR & ADPaR, RCP, MRO Extracts, FFS- Managedcare
[Health Plan 3]	Weekly	ESSR, ADPaR, Provider Pay To file, RCP, MRO Extracts, FFS- Managedcare
[Health Plan 4]	Weekly	ESSR & ADPaR, RCP, MRO Extracts, FFS- Managedcare
[State Vendor]	Monthly	PA Billing File, Provider files, RCP, MRO Extracts, FFS- Managedcare
[Health Plan 1]	Monthly	PMP List, PE HHW, HNS errors, RCP, MRO Extracts, FFS- Managedcare
[Health Plan 2]	Monthly	PMP List, PE HHW, HNS errors, RCP, MRO Extracts, FFS- Managedcare
[Health Plan 3]	Monthly	PMP List, PE HHW, HNS errors, RCP, MRO Extracts, FFS- Managedcare
[Health Plan 4]	Monthly	PMP List, PE HHW, HNS errors, RCP, MRO Extracts, FFS - Managedcare

- Additional Details on SSDW Inbound Data Extracts (EDW Only):** The SSDW currently receives data extracts from various sources (agencies, divisions, program areas) for social services and health care related data. The estimated number of incoming (inbound) extracts/files by source is listed in the table below. For a complete listing of inputs including but not limited to extracts/files, Text, PDF, Excel, refer to Appendix J within the SSDW Environment Document.

SSDW Incoming (Inbound) Extracts/Files	Total
Alcohol Tobacco Commission (ATC)	1
DCS Child Welfare - MaGIK (Management Gateway for Indiana's Kids)	2
DCS Child Welfare Community Partners for Child Safety (CPCS)	1
DCS Child Welfare Healthy Families Indiana (HFI)	1
DCS Child Support – Indiana Support Enforcement Tracking System (ISETS)	57
Department of Correction (DOC)	4
IDOE - Textbooks	3
IDOH	2

Department of Revenue (DOR) Earned Income Tax Credit (EITC)	1
Department of Workforce Development (DWD)	2
FSSA DORS - Indiana in-home services information system (INsite)	1
FSSA DFR – Indiana Eligibility Determination Services System (IEDSS) GoldenGate	37
FSSA DFR Electronic Benefit Transfer (EBT) Excessive Card Replacement	3
FSSA DFR Electronic Payment Processing and Information Control	11
FSSA DFR Federal Food and Nutrition Service (FNS) Database (SNAP QC)	3
FSSA DFR Indiana Manpower Placement and Comprehensive Training (IMPACT)	6
FSSA DFR Various (as listed in Appendix J of SSDW Environment Document 6.8)	12
FSSA Division of Aging - Ascend	1
FSSA DORS, Bureau of Developmental Disability Services (BDDS) - Developmental Disability Automated Resource Tool (DART)	1
FSSA Division of Mental Health and Addiction (DMHA)	1
FSSA OECOSL - Child Care	11
FSSA OMPP Various Healthy Indiana Plan (HIP) Dashboard Data Sources/Files	18

- Additional Details on SSDW Outbound Data Extracts (EDW Only):** The SSDW currently provides outbound data extracts to various source systems (agencies, divisions, program areas) for social service and health care related data. SSDW Outgoing (Outbound) Extracts/Files appear below. For a complete listing of all outputs (deliverables) including but not limited to extracts/files, TEXT, PDF, Cognos and Tableau reports, and views, refer to Appendix B within the SSDW Environment Document.

SSDW Outgoing (Outbound) Extracts/Files
Administration for Children and Families (ACF) ACF 199 – TANF Data Report (3 files)
Administration for Children and Families (ACF) ACF 209 Separate State Program (SSP) – Maintenance of Effort (MOE) Data Report (3 files)
DCS Child Support Federal Trace Medicaid Child Match Access DB
DCS Child Support Financial Institution Data Match (FIDM)
DCS Child Support Medicaid Child Match File
DCS Child Support Medicaid Match Output File
DCS Child Support Office of Child Support Enforcement (OCSE) 157 Trace File
DCS Child Support View of Performance Metrics
DCS Child Welfare match to Medicaid, aka Psychotropic
DCS Child Welfare RID exceptions file
DCS Child Welfare SSN exceptions file
IDOH Women, Infants, and Children (WIC) New Clients Eligibility Data
Department of Workforce Development (DWD) SNAP and TANF Match
FSSA DFR COVID-19 Pandemic Electronic Benefit Transfer (P-EBT) Transmission – Child Care
FSSA DFR COVID-19 Pandemic Electronic Benefit Transfer (P-EBT) Transmission – School Age
FSSA DFR Electronic Benefit Transfer (EBT) Clients Address List
FSSA DFR Electronic Benefit Transfer (EBT) Error Log Transactions Missing Card Number
FSSA DFR SNAP Fraud Authorized Representative Extract
FSSA DFR SNAP Fraud Benefit Issuance Extract

FSSA DFR SNAP Fraud Case Extract
FSSA DFR SNAP Fraud Demographics Extract
FSSA DFR SNAP Fraud Department of Workforce Development (DWD) Extract
FSSA DFR SNAP Fraud Electronic Benefit Transfer (EBT) Hearings Extract
FSSA DFR SNAP Fraud Electronic Benefit Transfer (EBT) Online Extract
FSSA DFR SNAP Fraud Electronic Benefit Transfer (EBT) POS Extract
FSSA DFR SNAP Fraud Employment Extract
FSSA DFR SNAP Fraud Intentional Program Violation (IPV) Extract
FSSA DFR SNAP Fraud OECOSL Applications Extract
FSSA DFR SNAP Fraud OECOSL Case Income Extract
FSSA DFR SNAP Fraud OECOSL HH Employment Extract
FSSA DFR SNAP Fraud OECOSL HH Member Extract
FSSA DFR SNAP Fraud OECOSL Provider Extract
FSSA DFR SNAP Fraud Unearned Income Extract
FSSA DFR TANF EBT match data for TANF EBT desktop app
FSSA Division of Aging CaMSS Reporting Structure
FSSA Division of Aging Client Identifier for CaMSS – CaMSS_STG_DQ
FSSA Division of Aging Unique client identifier assignment (ECI_asgn_new_id.svc)
FSSA Division of Aging Unique client identifier lookup (ECILookup.svc)
FSSA DMHA Base Table copy
FSSA DMHA Code Table copy
FSSA DMHA ECI Return File (DMHA_CLI_mmmmyyyy.txt)
FSSA DMHA Enterprise Client Identifier (ECI) Exceptions (ECIExceptions_DMHA.txt)
FSSA DMHA RID Exceptions (RIDExceptions_DMHA.txt)
FSSA DMHA SSN Exceptions (SSNExceptions_DMHA.txt)
FSSA DMHA Substance Abuse and Mental Health Services Administration (SAMHSA) Reporting
FSSA DMHA Treatment Episode Data Set (TEDS) Reporting
FSSA Financial Management SNAP_eligibility_output_yyyymmdd.csv
FSSA OECOSL Voucher Trends/Transactions Report
FSSA OECOSL - Bureau of Child Care (BCC) Provider Income Match
FSSA OECOSL – COVID Voucher Process (<i>potentially phasing out</i>)
FSSA OECOSL Data Acquisition
FSSA OECOSL Public Assistance Reporting Information System (PARIS) match
FSSA OMPP COVID-19 (Pandemic Health Emergency (PHE)) Reports Weekly Active Conditionals (Core & IEDSS)
FSSA OMPP COVID-19 (Public Health Emergency (PHE)) Unwinding Reports – State) PHE Unwinding – Appeals
FSSA OMPP COVID-19 (Public Health Emergency (PHE)) Unwinding Reports – State) PHE Unwinding – Applications
FSSA OMPP COVID-19 (Public Health Emergency (PHE)) Unwinding Reports – State) PHE Unwinding – Call Center Metrics
FSSA OMPP COVID-19 (Public Health Emergency (PHE)) Unwinding Reports – State) PHE Unwinding – Disenrollment returns

FSSA OMPP COVID-19 (Public Health Emergency (PHE) Unwinding Reports – State) PHE Unwinding - Population
FSSA OMPP COVID-19 (Public Health Emergency (PHE) Unwinding Reports – State) - Renewals
FSSA OMPP COVID-19 All eligibility downgrades List (part of FSSA OMPP Pandemic Health Emergency (PHE) Reports
FSSA OMPP COVID-19 Public Health Emergency (PHE) Unwinding Reports Federal – Monthly
FSSA OMPP COVID-19 Public Health Emergency (PHE) Unwinding Report – Baseline
FSSA OMPP Data File for Centers for Medicare and Medicaid Services (CMS), Department of Correction (DOC) extract file for Burns and Associates
FSSA OMPP Data file for CMS Reporting
FSSA OMPP Data view of Medicaid redeterminations (vssdw_edw.redetermn_review)
FSSA OMPP Department of Correction (DOC) Data View STG_DOC_POPULATION
FSSA OMPP Department of Correction (DOC) Data View STG_DOC_RELEASE
FSSA OMPP Department of Correction (DOC) Medicaid Reporting – Incarcerated Nearing Release
FSSA OMPP Department of Correction (DOC) Medicaid Reporting – Newly Incarcerated, Needing Suspension of Coverage
FSSA OMPP Department of Correction (DOC) Medicaid Reporting – Post-release MCE Assignment
FSSA OMPP Department of Correction (DOC) Medicaid Reporting – Released, Needing Activation of Coverage
FSSA OMPP Department of Correction (DOC) Medicaid Reporting – unmatched client list
FSSA OMPP Department of Correction (DOC) -Medicaid Reporting Phase 3
FSSA OMPP Department of Workforce Development (DWD) OMPP Medicaid Extracts
FSSA OMPP End Stage Renal Disease (ESRD) match results (esrd_output)
FSSA OMPP Enterprise Client Identifier (ECI) for [PBM vendor] staff: all ICES src_client_id (VW ICES CLIENTS)
FSSA OMPP Healthy Indiana Plan (HIP) – Centers for Medicare and Medicaid Services (CMS) Monitoring Metrics
FSSA OMPP Healthy Indiana Plan (HIP) Evaluation Data for Lewin Group (non-Gateway-to-Work) (non-GTW) Phase 1
FSSA OMPP Healthy Indiana Plan (HIP) Evaluation Data for Lewin Group (non-Gateway-to-Work) (non-GTW) Phase 2
FSSA OMPP Internal Revenue Service (IRS) 1095B Acknowledgement File Parsing Tool for Subject Tax Year
FSSA OMPP Internal Revenue Service (IRS) Initial Annual Submission of 1095B PDFs for Subject Tax Year
FSSA OMPP Internal Revenue Service (IRS) Initial Annual Submission of 1095B XMLs for Subject Tax Year
FSSA OMPP Internal Revenue Service (IRS) Monthly Correction Submission of 1095B PDFs for Subject Tax Year
FSSA OMPP Internal Revenue Service (IRS) Monthly Correction Submission of 1095B XMLs for Subject Tax Year
FSSA OMPP Internal Revenue Service (IRS) Transmission of 1095B PDF files for consumption into Captiva/Document Center
FSSA OMPP Medicaid Redetermination Dates
FSSA OMPP Medicaid Redetermination View (vw_redetermn_renew_all_ma)
FSSA OMPP My Healthy Baby - MHB (formerly Obstetric (OB) Navigator)
FSSA OMPP Refugee or Alien Status for TMSIS (data view TMSIS_MBR_ELIG_INFO)
FSSA OMPP SSI Eligibility Date for Medically Frail Members

FSSA OMPP Medicaid Household Cost Share (data view vw_ma_household_costshare)
US Census Bureau SNAP and TANF extract data

- **CAE Inbound Data Extracts/Files (CAE Scope Only):**

Data Sources	Source	Refresh Frequency
Indiana Medicaid Analytical Extract (INMax)	EDW	Weekly
Consumer Assessment of Healthcare Providers and Systems Home and Community-Based (CAHPS HCBS)	WISE IN	Annual
CMS Minimum Data Sets (MDS)	CMS	Daily
ADT	Indiana Health Information Exchange (IHIE)	Daily
UPL	Myers & Stauffer	Quarterly
FFS Medicare	State Data Resource Center (SDRC)	Quarterly
Outcome and Assessment Information Set (OASIS)	State Data Resource Center (SDRC)	Monthly
Skilled Nursing Facility (SNF) Admission-discharge-transfer (ADT)	PCC	Daily
Managed Care Entities (MCE) Reporting	Managed Care Entities	Weekly and Monthly
Service Plans	MuleSoft AnyPoint GovCloud	Real-time
National Core Indicators-Aging and Disabilities (NCI-AD) Survey	HRSI	Annual
Vaccine history	IDOH- Children and Hoosier Immunization Registry (CHIRP)	

- **CAE Outbound Data Extracts/Files (CAE Scope Only):**

CAE Outgoing Extracts
IN211 national data exchange
Pathways for Aging
DMHA – CCHBC
OMPP

3.3 Enhancements and SDLC

3.3.1 Overview

Enhancements are defined as any system improvement or adaptation to the properly working application, falling outside of regular maintenance activities, that requires over 80 hours of additional work approved by the State (with exceptions). Enhancements may be for new solution components or component enhancements, and/or major configuration changes to existing solution components. The Contractor shall provide Design, Development, and Implementation (DDI) services for solution enhancements according to the Contract's System Development Lifecycle (SDLC) processes (see Section 3.3.2). The State will work with the Contractor to prioritize and plan enhancement requests.

These modifications will be managed via the Change Management process (see Section 5.4). Unless otherwise noted, enhancements will be requested, scoped, and reviewed via the Change Control Process (see Section 5.4 for details on the Change Control Process, including how the Contractor will be required to support CMS and FNS change requirements, as applicable). For Enhancements, the Contractor shall apply the project management requirements as outlined in Section 5.1. Any enhancements, included those introduce new COTS platforms, will be incorporated into regular M&O duties of the Contractor upon successful implementation into Production, with the expectations cited in this section considered applicable to these new platforms.

After completion of any enhancement, the Contractor shall provide actual hours worked by individual. Each Contractor shall also submit a monthly report listing all hours worked by position for each approved enhancement and bill for actual hours worked, even if it is less than the initial estimates. The State will check invoice details before the invoice is processed. If services are to be provided in exchange for fixed or not-to-exceed compensation, the Contractor is solely responsible for any costs in excess of the specified compensation.

Changes that are needed to fix an enhancement after it is implemented and that are discovered (by the State, the Contractor, or a third party) during the Software Warranty period will not count toward the Enhancements Pool. Please see Sections 3.3.3 for information about the Software Warranty.

Monthly Enhancements Pool (EDW Only): The monthly Enhancements Pool not-to-exceed (NTE) funds caps will be calculated in the Cost Proposal (Attachment D.1) based on the Respondent's proposed rates and the estimated monthly hours below:

- The State has allocated 1,990 hours per month for EDW enhancement activities. It is anticipated that 70% of these hours will be spent on activities pertaining to the OMPP DW and infrastructure and 30% will be spent on activities pertaining to the SSDW. Based on a review of historical enhancements, it is expected that some hours will be needed each year for work related to generating 1095-B tax forms for recipients receiving Minimum Essential Coverage.
 - Note - The State is planning to request that the EDW Contractor transfer the OMPP DW to a cloud native data warehousing solution, including migration of all OMPP DW functionality, data, and reporting. The timing and scope are not finalized, but this Large SDLC effort is expected to be added to the Contract via amendment. This effort may use some of the Enhancements Pool hours.
- The Contractor will not exceed the monthly Enhancements Pool NTE funds without written approval from the State. Within a State Fiscal Year, each month's unused dollars will be rolled over to the following month, however unused dollars will not roll over from one Fiscal Year to the next.
- Note: The maximum hours invoiced for an individual shall not exceed 40 hours a week, regardless of the number of hours worked by the individual to meet service levels and complete deliverables on time.
- On a monthly basis, the Contractor shall report on enhancement activities to ensure alignment with the relevant SLAs, as described in Section 8.3.

CAE Scope: There will not be a monthly enhancements pool for the CAE scope.

3.3.2 Systems Development Life Cycle (SDLC)

The Contractor shall follow industry standard SDLC processes and federal project management/SDLC requirements for supporting any approved enhancement/change request, defect fix, and M&O related activity within this Contract.

3.3.2.1 SDLC Process

The State has used both Waterfall and Agile SDLC methodologies for recent EDSS initiatives. For this Contract, the State prefers to use Hybrid Agile but is willing to consider other SDLC approaches. Please note that this scope is written for the Hybrid Agile approach but if the Contractor proposes a different approach (e.g., Waterfall), the State may consider modifications to the SDLC approach during Contract finalization. There may be enhancements where Waterfall is required but those would be in the minority. As such, the Contractor shall use Agile methodologies for each enhancement unless otherwise approved by the State. This Agile methodology shall break the project into smaller work efforts to realize the following goals:

- Development and deployment of a functioning component(s) at the end of every iteration that build upon each other
- Enabling frequent demonstrations of completed components
- Building stakeholder support for the system throughout the life of the project, including through regular user acceptance testing (UAT) efforts
- Detecting dependencies, risks, and/or issues as early as possible to make course corrections.
- Early detection of missing, incomplete, or inaccurate requirements
- Early detection of flaws and vulnerabilities
- Meet approved project schedule deadlines
- Creating an environment that lends itself to responsive design to provide a seamless user experience regardless of device
- Facilitating on-going project team learning and continuous process improvement
- Independent module level testing and cross module testing
- Scheduled and on-demand demos
- Flexible number of iterations to accommodate all the prioritized requirements within a module

The Contractor must use an approach that incorporates all the industry standard Agile deliverables and artifacts with emphasis on communication, collaboration, and iteration. The Contractor must create and lead an architecture-driven, iterative process that begins by prioritizing high-risk/high-payoff use cases within each module that have well-defined objectives and produce functionality ready for production release. The Contractor's approach must incorporate iterative methods for development and testing of software and training. The State may request full requirements development upfront followed by iterative development and testing.

The Contractor shall keep the State updated on status of all SDLC phases, with full clarity on items including but not limited to the requirements, test artifacts, build data implemented into the production environment, and all pending functionality and design fully documented via Requirements Traceability Matrix (RTM) within the State's Application Lifecycle Management (ALM) tool.

The Contractor shall provide the services and deliverables described in Section 3.3.2.3 unless otherwise approved by the State. Please note that in some cases, with the State's approval, a specific enhancement may not require all the listed deliverables and similarly some more complex enhancements may require more deliverables. These details will be determined in the Change Control process. Deliverables shall be on time, on budget, consistent in formatting and content, and meet the user-defined request. The State will monitor compliance with these standards and address consistently poor performance.

3.3.2.2 Entrance and Exit Criteria

CMS SMC and MARS-E 2.2 require structured SDLC phases to be used for supporting the scope of this Contract, with entrance into phase / exit from phase criteria fully defined and supported. Further, FNS Handbook 901 Section 6.4.1.1 defines "Entry / Exit Criteria" requirements that must be supported by the Contractor's SDLC. FNS Handbook 901 Section 6.4.1.2 further defines "Pass / Fail Criteria" that the SDLC must support. The SDLC will include requirements and design definition, unit testing, system integration testing (SIT), end-to-end testing with other systems, regression testing, performance/capacity testing, security testing (per SSA, MARS-E 2.2, and IRS Publication 1075), UAT, usability/accessibility testing, and production/smoke testing. These phases may be combined where justified and applicable but must be incorporated into the Contractor's SDLC with approved exit/entrance criteria for ensuring that all aspects of the solution are supported to meet State and federal requirements. Examples of criteria for phases are provided below:

Entrance criteria examples for a phase:

- Design completion: System Requirements, Non-Functional Requirements, Usability Requirements, Accessibility Requirements, Preliminary System Design, Detailed System Design, and technical artifacts are finalized and approved by the State.
- Test cases are completed and are reviewed by the Contractor and State.
- Approach for Testing is approved by State.
 - Testing tools are made available and configured.
 - Test environments are made available and have been successfully Smoke Tested by the Contractor.

Exit criteria examples for a phase:

- Testing Completion
 - Planned test cases have 100% been executed and retested after defect fixes, as applicable.
 - Go/No-Go meeting is conducted with State and testing stakeholders to review results.
- Risk
 - Mitigation strategy has been identified for the risks compiled within the phase.
 - Residual risk is identified for each phase of the mitigation strategy, as applicable.
- Defects
 - All Defects with Testing Severity 1, 2, or 3 are resolved and associated functionality is working correctly.

3.3.2.3 SDLC Phases and Deliverables

High-level information on phase requirements is provided below. **For less complex enhancements, the SDLC process and deliverables may be pared down. All simplifications must be clearly explained in the approved Change Request.**

3.3.2.3.1 Planning

Work with the State to finalize a detailed project schedule, staffing plan, and other necessary enhancement-specific planning documents. Additionally, the Contractor shall develop a list of deliverables for the remainder of the SDLC work and accompanying brief descriptions of each deliverable. The State will review the list and provide feedback. The Contractor must receive approval on the deliverables list before beginning design activities.

Deliverables: Project Schedule, deliverables descriptions, Contractor staffing plan other required planning documents

3.3.2.3.2 Requirements

Through data gathering efforts with the State, the Contractor will develop requirements documents including the product roadmap, the product backlog with user stories, non-functional requirements, the release plan, and sprint backlog. Additional supporting documentation shall also be included as necessary by the Contractor or the State. If the Contractor is using the Waterfall methodology, detailed functional and technical requirements must be developed.

The Contractor shall also document stakeholders, business needs, project estimates and completion date, and testing needs. The Contractor will conduct requirements validation to confirm the completeness and accuracy of all requirements.

The Contractor shall manage and update the requirements documents throughout the term of the Contract. The Contractor must track and maintain a record of changes to requirements and/or development artifacts for the historical record and certification traceability.

Deliverables: Requirements documents (RTM, functional requirements, product backlog with user stories, etc.) relevant to the SDLC methodology used. All these deliverables must be approved by the State before development begins.

3.3.2.3.3 Design

The Contractor shall be responsible for the following activities:

- Lead architecture, design, and development discussions. Factor in user interface (UI) and user experience (UX) considerations for each user type into the design process.
- Organize and conduct design sessions with subject matter experts to develop the detailed system design.
- Provide input and conform to the direction of State IT standards.
- Facilitate design sessions required to support system development and interfaces.
- Create necessary design documents.
 - Design documents for each sprint should be based on approved requirements documents. The Contractor will submit with design documents any updated project schedules and any needs for new hardware, network, storage, forms, reports, technical environments, interfaces, or software.
 - If the Contractor is using the Waterfall methodology, traceability of requirements, inputs and outputs, technical components, General System Design (GSD) and Detailed System Design (DSD), User Interface (UI), and database changes must be submitted. For smaller enhancements, the State may waive the need for some of the design documents.

- If any existing system design documentation (e.g., architecture diagrams, requirements documents, security plans, manuals) are affected by the enhancement, they shall be submitted for review and approval as well. The required design deliverables will be determined in the change control process.

If requested by the State, the Contractor shall provide an updated firm fixed price estimate or not-to-exceed price, which includes the positions responsible for the change, their hourly rates, estimated hours by position, the updated workplan, and other appropriate supporting details as requested by the State.

Deliverables: Design documents including updated schedule and pricing, updated product backlog. Updated system artifacts where any artifact is impacted by the enhancement. Sign-off must be obtained from designated approvers prior to commencement of coding.

3.3.2.3.4 Development

The Contractor's development approach must incorporate appropriate government and industry best practices and be in accordance with the approved standards. The Contractor shall be responsible for the following activities:

- Apply consistent development standards including coding, database, and field naming conventions, in alignment with industry standards.
- Perform necessary configuration, development, and testing (see next subsection) required to implement the functional and technical design.
- Maintain the product backlog.
- Provide and implement application lifecycle management processes to manage requirements through the entire application lifecycle.
- Conduct regular demos of functionality throughout development to ensure State visibility and approval.

Deliverables: Updated system documents

3.3.2.3.5 Testing

The Contractor shall conduct testing as well as support user acceptance testing per policy and procedures approved by the State. Testing responsibilities include, but are not limited to:

- Comply with industry standard SDLC testing standards.
- Develop a Master Test Plan that must be approved by the State before testing activities can begin. The Master Test Plan covers the approach and methodology for all aspects of testing and must include:
 - Definition of test philosophy (including objectives, required levels or types of testing, and basic strategy)
 - Strategy for maintaining testing environments to facilitate all testing cycles and any testing needs identified
 - Strategy for assisting the State in conducting "what if" analysis testing
 - Strategy to be used for creating and populating the test database(s) and maintaining the files during iterative testing
 - Strategy for collaboration and sharing of test cases with the State and its designees to support applicable testing cycles
 - Explanation of how the testing will satisfy specific objectives and demonstrate that the requirements are met
 - Identification of the design modules that will undergo control or data flow analysis

- Explanation of how each phase of the testing is determined to be complete, including how the formal reports/debriefings will be conducted and methods for tracking pass-fail test results
- The testing facilities, environment, and specific testing tools to be used
- Processes and procedures that will be used for releasing and reviewing testing results
- Identification of the following for each testing cycle: facilities/tools to be used, staff/resources, method for review of test case and procedures, configuration management, procedures for releasing test results, test data refreshes, planned testing environment, acceptance criteria that determine whether a phase of testing has been completed (including criteria such as number and types (severity) of defects).
- Manage the following test cycles, tracking progress and producing progress and quality reports: construction and unit test, system test, performance test, regression test, integration test, interface test, load test, security test, system end-to-end test, conversion test, Operational Readiness Review (ORR), and implementation test.
 - System testing shall include the development and use of automated system test scripts to validate that the system operates in accordance with the design specifications, for example:
 - User roles are performing properly.
 - Authentication performs properly.
 - Workflows perform properly.
 - Data flows perform properly.
- Develop test scripts covering all functionality for each testing cycle in collaboration with the State. Assist in developing UAT test scripts when requested.
- Support the testing environment including, but not limited to and creating the test datasets.
- For UAT, schedule and facilitate State-selected users to complete UAT, track their results, and present results to the State for review prior to requesting authorization for production releases.
- Train State staff involved in testing on the system and test procedures so that they are prepared to play their roles if they are unfamiliar with the role, process, and tools.
- Ensure that the modifications or enhancements are completed with 100% positive results and receive approval from State designee(s) before activating any modifications or enhancements. If there are minor issues (i.e., resulting in less than 100% positive results), the State may choose to approve the modification or enhancement release. In those situations, the Contractor shall be responsible for resolving issues on a State-approved timeline post release.
- Refine, update, and make available all test documents, procedures, and scripts throughout development and through full acceptance to reflect the current requirements.
- Provide defect management tool(s) and procedures for tracking, managing, and reporting system defects during testing. Each defect will be assigned a Testing Severity and Testing Priority level. For each enhancement, the State will determine the desired approach to what percent of each severity and priority level of defects will be allowed prior to Production.
- **Testing Severity.** Testing Severity is the major defect categorization used to guide defect/issue resolution. This field is required when a defect is submitted and is used to classify the impact of the defect on the application and the testing process. When reporting defects, the following Testing Severity levels are used:

Severity Level	Description	Example
1	System Failure. No further processing is possible.	Critical to solution availability, Results, Functionality, Performance, or Usability.
2	Unable to proceed with selected function or dependents.	Application Sub-system available, Key Component unavailable or functionally incorrect (Workaround is not available).

3	Restricted function capability; however, processing can continue.	Non-critical component unavailable or functionally incorrect; incorrect calculation results in functionally critical key fields/dates (Workaround is normally available).
4	Minor cosmetic change.	Usability errors; screen or report errors that do not materially affect quality and correctness of function, intended use or results.

- **Testing Priority.** In addition to the Testing Severity level, each defect is also assigned a Testing Priority level to help prioritize the fixes for defects using the following Testing Priority codes. The Testing Priority Codes are an indication of the importance of the function to the business.

Priority Level	Description	Example
A	Critical	Defect resolution is imperative to the system's ability to support business functions.
B	High	The defect should be fixed as soon as possible.
C	Medium	The defect should be fixed as soon as there are no more "A" (Critical) Testing Priority defects.
D	Low	The defect must be fixed before the next code drop or hand over to the next level of testing.

Deliverables:

- Master Test Plan
- Testing documentation that must contain traceability to requirements, identify environments being used, test scripts and plans with test cases and expected results, and identification of defects with plans for correction. Following sign-off for all steps in testing, FSSA must provide a formal 'Go' Decision for the change to be promoted to the production environment.
- Testing Results Report for each test stage
- Updated Requirements Traceability Matrix to show test cases/scripts pointing back to requirements
- Release notes and standard release schedules

3.3.2.3.6 Configuration Documentation

The Contractor will be responsible for the maintenance of their scope-specific configuration documents. Documents will be updated by the Contractor when configurations are approved and migrated to the production environment. The Contractor shall be responsible for document version control. The Contractor will accomplish this using the State's JIRA system or SharePoint.

Deliverables: Updated configuration documents.

3.3.2.3.7 User Manuals, Training Materials, and Process Documents

The Contractor shall be responsible for the maintenance of scope-specific user manuals, training materials, and process documents. Manuals will be updated to reflect changes or additions to functionality as they are approved and migrated to production. The Contractor will be responsible for updating the training content and for maintaining version control of all subject documents.

- **EDW Scope Only:** The EDW Contractor is responsible for updating the EDW Operations Document twice a year; and is also responsible for updating the SSDW Environment Document twice a year. Both documents are provided in Attachment O.
- **CAE Scope Only:** The CAE Contractor is responsible for updating the CAE user and admin manuals, and demo videos at least annually.

Deliverables: Updated user manuals, environment documents, training materials, and process documents.

3.3.2.3.8 Data Migration and Conversion (if applicable)

The Contractor shall be responsible for the following activities:

- Examine the data from the existing sources to identify data challenges early in the project for the data conversion/migration effort and compile a list of defined rules to be built to address challenges.
- Develop a Data Conversion and Migration Plan to describe the conversion and migration strategy and data migration testing strategy. Also included should be a list of the legacy data to be included in the migration and legacy data that can be archived. The State and the Contractor will work to define an archival data strategy for archiving historical data that is no longer needed, following State records management rules.
- Provide a data dictionary, data models, data flow models, process models, and other related planning and design documents to the State in a timely manner prior to data conversion/migration validation.
- Develop scripts to convert high volume data objects automatically.
- Provide tools to minimize the manual effort required.
- Lead data conversion and migration activities including developing a schedule for all data mapping and conversion activities involving State resources.
 - Coordinate all automated and manual data loads during data conversion.
 - Based on the data migration plan and all accompanying data documents, migrate cleansed/converted legacy data to a test environment for demonstrations, system and unit testing, and UAT.
 - Perform data conversion testing according to the approved Data Conversion and Migration Plan and provide tools or guidance to help data conversion by identifying common error conditions (e.g., duplicate records) and minimizing manual effort during the data conversion and migration process by automating where possible the corrective action process (e.g., merging duplicate records).
 - Validate test data for accuracy and functionality according to the approved Data Conversion and Migration Plan. Ensure there are no duplicate records. If there is a period of operation where data will be maintained in both systems, synchronize the data.
 - Support the review and approval of data conversion testing results.
 - Complete mock conversions with 100% successful/zero defects or agreement to address defects after implementation.
 - Plan and address any data synchronization needs.
 - Develop audit trails and logs to ensure that all data has been correctly migrated and, when appropriate, that the correct synchronization has been achieved.

- To the degree necessary to meet the Contractor's needs and to meet requirements of the Contract scope, the Contractor shall establish, maintain, implement and manage software tools to include but not be limited to Source Data Extraction and Transformation, Data Cleansing, Data Load, Data Refresh, Data Access, Security Enforcement, Version Control/Configuration Management, Backup and Recovery, Disaster Recovery, Performance Monitoring, Database Management, Platform, Data Modeling, and Metadata Modelling.

Deliverables: Data Conversion and Migration Plan and Schedule, data documents (data dictionary, data models, data flow models, process models), conversion scripts, conversion and migration audit trails and logs, and data conversion results

3.3.2.3.9 Implementation

The Contractor shall be responsible for the following activities:

- Develop the Implementation Plan including identifying the scope, participants, timeline, risks and mitigation strategies, and the Go/No-Go checklists
- Conduct a pre-implementation readiness assessment and deliver a report on the findings
- Resolve all Blocker, Critical, High, and Medium defects prior to go-live
- Conduct a walkthrough of implementation activities with the State Team
- Address and fix all findings and work with State to gain formal written acceptance before each implementation

Deliverables: Implementation Plan, Go-Live checklist, Pre-implementation Readiness Assessment Report

3.3.2.3.10 Formal Production Readiness Reviews

The Contractor shall conduct formal production readiness reviews prior to production releases to ensure releases are ready for deployments (e.g., pass test cases, documents are updated, etc.). Formal review process must be agreed upon by the State.

Deliverables: Updated user manuals, training materials, process documents, and product backlog.

3.3.2.3.11 Post Implementation Review

The Contractor shall verify that the post-implementation production functionality meets approved requirements and provide the materials to support this verification to the State for validation. Any post-implementation defects shall be identified, corrected, and closed by the Contractor. All documentation will be stored in a State approved repository.

The State retains formal and final authority to accept and approve the Contractor's deliverables.

Deliverables: Bug/defect correction, updated system documentation.

3.3.3 Warranty

The State requires a 90-day warranty for all modifications and enhancements. During the 90-day warranty period, the Contractor shall fix any post-production defects or bugs at no additional cost to the State. The hours required for the fixes will not count against the Enhancements Pool hours. Fit functionality in relation to user requests and agreed to specifications will be tracked by the State. Action may be taken to address consistently poor performance.

3.3.4 Scope Crossover Support

There may be times where one Contractor team cannot meet deadlines or service levels due to a lack of resources to address the scope-specific needs. The State anticipates this need to arise rarely, if ever; however, in those instances, the State may request temporary crossover support from the other Contractor team after ascertaining that there will be no impact on the ability to meet the requirements and service levels of its own scope of work. The pricing for the work will be mutually agreed upon with the State (e.g., deliverables based or based on hourly billings). It is expected that all Contractors shall agree to this giving and receiving of support when the need arises. It is expected that EDW Contractor may be required to support CAE Scope-specific needs, but there may be minimal crossover for CAE Contractor to support EDW specific needs.

3.4 Service Desk Management

Definitions:

- a. **Service Desk Management (Help Desk):** A service desk or Help Desk is a single point of contact between the service provider and the users. A service desk will typically handle the tracking and communications for service requests, incidents, and change requests.
- b. **Service Request Management:** A service request is a formal request by a customer for a need or enhancement. Service Request management are the policies and activities that support the agreed quality of a service by handling all pre-defined, user-initiated service requests in an effective and user-friendly manner.
- c. **Incident Management:** An Incident is an event that causes a loss or disruption to operations, services or functions. Incident management are the activities that identify, analyze and resolve the incident.
- d. **Problem Management:** Problem management activities seek to prevent reoccurring incidents by performing root cause analysis and implementing changes to mitigate the root cause.
- e. **Change Management:** Change Management is the implementation of standardized methods, processes and procedures which are used for changes to minimize negative impacts to operations.
- f. **Release Management:** Release and deployment management is the process of managing, planning and scheduling the implementation of IT updates and releases into the production environment.

The Contractor shall provide Service Desk Management services for their respective scope of work and route questions, concerns, or requests to the appropriate Contractor staff. The Contractor is responsible for providing the subject matter expertise for all levels of support. The service desk will provide appropriate, accurate, courteous, efficient, timely and proactive responses to inquiries. Service requests can be submitted via email or phone.

As a part of Service Desk Management, the Contractor shall:

- a. Establish and utilize a dedicated email address and a toll-free phone line for service requests. Provide telephone and email support where a qualified technician shall respond within the timeframes listed in Section 3.5.1 based upon the request's function type and severity code. In addition to phone and email requests, occasionally requests may be submitted in person. The Contractor shall document receipt of all requests in a request log (Jira) that tracks each request's receipt date and time, request type, details of the request, assigned Contractor staff, resolution, and resolution type and date.
- b. Provide qualified incident support from 8:00 AM to 5:00 PM Eastern Time, Monday through Friday. Incident support shall adhere to the timeframes listed in Section 3.5.1 based upon the request's function type and severity code for problems that cannot be resolved via telephone.
- c. After hours support (defined as from 5:01 PM to 7:59 AM Eastern Time Mondays to Fridays, as well as full day weekends and State holidays) will be provided via a defined method (e.g., phone or email) to be defined upon discussion with the State. Required response times for incidents reported outside of normal business hours will be determined based on the severity of the incident in accordance with Section 3.5.1.
- d. Perform a triage function for all inquiries received at the dedicated e-mail address and phone line(s). For those inquiries that are determined to be outside of the scope for the Contractor and should be handled by State staff, forward to the designated State staff within one (1) business day.
- e. Provide adequate training and access to information to Contractor staff to facilitate timely and accurate responses to inquiries.
- f. Provide responses and resolution per the service levels listed in Section 3.5.1.
- g. Coordinate responses by following service desk escalation workflows that address proper handling of requests from State or Federal legislators, the Governor, the FSSA Secretary, and news media.

Note: During 2022, the OMPP DW incumbent vendor received on average 105 service desk requests per month. In the same time period, the SSDW incumbent vendor received on average 25 service desk requests per month, with the top request categories being inquiries to support Program Effectiveness, inquiries to analyze a specific population (example: HIP Maternity), or a Legislative request in support of determining the impact of rule changes for specific programs. The incumbent CAE vendor received an estimated 20 requests per month but it is expected that the volume will increase as the LTSS data flows usage expands.

3.5 Service Request, Incident and Problem Management

As a part of the Service Request, Incident and Problem Management responsibilities, the Contractor shall:

- a. Strive to adhere to ITIL best practices and perform tasks in a manner consistent with minimizing and avoiding incidents.
- b. Monitor events and system performance with the goal of taking proactive actions to avoid incidents.
- c. Prioritize and communicate tasks associated with incidents, problems and service requests.
- d. Notify the State of unplanned system downtime immediately upon, and at most within one (1) hour of confirmation. If the downtime is anticipated beforehand, the Contractor shall adhere to the prescribed Change Management process and notify the State at least 72 hours prior to the planned downtime.

3.5.1 Prioritization and Notification and Resolution Timeliness (Service Requests/ Incidents/Problem)

The table below provides a description of four severity codes that apply to items such as service requests, incidents, and problems. The severity code for each item will be assigned by the State but may be adjusted based on discussions with each Contractor.

Severity Code	Definition
1	An incident has made a Critical function unusable or unavailable, and no workaround exists.
2	An incident has made a Critical function unusable or unavailable, but a workaround exists. or An incident has made an Important function unusable or unavailable, and no workaround exists.
3	An incident has diminished Critical or Important functionality or performance, but the functionality still performs as specified in the user documentation.
4	An incident has diminished Supportive functionality or performance.

The table below provides descriptions for each type of function.

Function Type	Description	Examples
Critical	These functions are critical to ensuring services are able to be provided to clients within the State of Indiana, in turn impacting User Agencies' reputation. Extended failure will impact or damage clients and/or User Agencies' reputation.	<ul style="list-style-type: none"> • Data submission to IMAR / T-MSIS for Federal (CMS) Reporting • Data extract submission to other vendors to support their critical functions • Report design and implementation includes accurate coding and results to ensure data quality (Contractor may need to modify the report design and/or consult with source systems).
Important	These functions are important to business productivity but are not critical.	<ul style="list-style-type: none"> • Provision of user access to research capabilities • Storage of current and historical data in one single place. Used for creating analytical reports for business units throughout the State • Business intelligence • Identification of clinical episodes of illness and the services involved in their diagnosis, management, and treatment by the use of the EDW toolset described in Section 2.4.1.
Supportive	These functions support productivity but are not essential to business effectiveness.	<ul style="list-style-type: none"> • Consistent presentation the organization's information • Simplification of the writing of decision-support queries • Integration of data from multiple sources into a single database and data model so that a single query engine can be used to present data quickly.

Based on the severity codes listed above, the State will track the timeliness of the following four phases:

Phase	Definition
Initial Response	Time taken from when the request/incident/ problem is originally identified (defined as reported by the State or another party, or discovered by the Contractor) to when the Contractor acknowledges the request/incident/defect/problem by updating status in the system.
Estimation Response	Time taken from when the request/incident/problem is originally reported to when the Contractor logs the estimated response time into the system.
Status Updates	Frequency of status updates logged into the system if there is an update to the request/incident/problem
Resolution Completion	Time taken from when the request/incident/problem is originally reported by the State to when the Contractor implements the request/incident/problem resolution, and the end user has indicated the resolution is accepted.

The required response time SLAs by severity code and phase for opened items are provided below. Response and resolution times are measured from when the request/incident/problem is received by the State. (**Note:** All minutes and hours are calendar minutes and hours, not business minutes and hours.)

Severity Code	Initial Response	Estimation Response	Delivery of Update (if there is an update)	Resolution Completion (unless otherwise approved by the State)
1	15 minutes	2 hours	Every 2 hours	4 hours
2	30 minutes	2 hours	Every 2 hours	8 hours
3	1 hour	8 hours	Every 4 hours	4 calendar days
4	1 hour	Next business day	Weekly	20 calendar days

The SLA compliance threshold for response time is provided in Section 8.2.1.

Note: During the Initial Transition Period (See Section 6 for more information), the State will work with the Contractor to build out the list of user requests and the expected service levels that may deviate from this resolution timeliness approach (e.g., password reset requests).

3.5.2 User Requests/Incidents/Defects/Problem

Each Contractor will report the number of items (service requests, incidents, problems resolved, and remaining open items in a given monthly period, the amount of time each item has been open, and the amount of time originally estimated for each item's resolution. The SLA compliance threshold is provided in Section 8.2.1.

Incidents will be recorded via the service desk, unless otherwise agreed by the State. The State is open to the vendor proposing alternative methods to ensure incident management intake is met.

3.6 Infrastructure /Application Management

3.6.1 EDW Contractor Responsibilities

The EDW Contractor shall maintain the infrastructure architecture and tools for all applicable users (see Section 2.3 System Users) for the current solutions through their sunset period, including all transitional maintenance process related costs. While the State is responsible for necessary licensure, the EDW Contractor must:

- a. Support applicable infrastructure architecture and tool transition as well as reporting transition and update as necessary when the State transitions to newer systems with which the EDW interfaces.
- b. Work with FSSA and IOT on maintaining EDW infrastructure architecture and tool set (State responsible for licensure) for all applicable users.
- c. Plan and execute tasks required to ensure the system stays relevant and usable. This includes resolution of functional issues, application of patches, preventative maintenance, planning/execution of upgrades, and regular performance monitoring and performance reporting.
- d. Conduct relevant SDLC procedures as necessary. Make all product releases and upgrades, such as predeveloped software accelerator packages, available to the State at no additional cost. At least on an annual basis, the Contractor shall communicate to the State any available information on the product roadmap, planned upgrades, and enhancements, and seek State input when necessary.
- e. Maintain EDW's infrastructure as laid out in Section 2.4.1 (EDW Technology Tool Set). The EDW Contractor may be requested to purchase necessary Teradata infrastructure, and possibly other hardware and software on behalf of the State. This includes Informatica PowerCenter Suite, Protegrity Data Protection, Cognos Analytics, BSP MetaManager, and Administrative Tools and any yet to be determined licensing for future state cloud native implementation. These costs will be passed through to the State **with no price markup** over the price paid by the EDW Contractor.

Additionally, they shall support the following SSDW-specific activities:

- a. Manage the WP Audit Program: On a monthly basis, pull a sample of (a) approximately 50 TANF WP IMPACT cases and (b) approximately 45 SNAP IMPACT volunteers and Able-Bodied Adults Without Dependents (ABAWDs) who have IMPACT activity or employment hours statewide to facilitate auditing of employment hours and IMPACT hours.
- b. Manage the TANF Electronic Benefit Transfer (EBT) Matching application: Maintain list of prohibited locations for using EBT Card. Receive monthly feed from Alcohol Tobacco Commission (ATC), match against actual location of EBT transactions, and provide a list of possible violations to DFR.

3.6.1.1 Informatica Support

The EDW Contractor will serve as a liaison to Informatica Corporation on behalf of the State to coordinate and manage any support services when needed. The State has purchased Standard Support from Informatica where such Standard Support is defined as consisting of the following:

- a. Error Correction: Upon receipt from the State of notice of a problem with the Informatica software (a problem which can be reproduced at an Informatica support facility or via remote access to the State's facility), Informatica shall use reasonable efforts to correct or circumvent the problem.
- b. Updates: Informatica shall notify the State of all new maintenance releases. Informatica shall make available to the State, at no additional charge, all currently supported updates that are developed or published by Informatica and made generally commercially available to Informatica Support Services customers at no additional charge. Updates shall not include any option or future products which Informatica licenses separately.

- c. Product Lifespan: A product release of the Informatica software shall be supported for a period of eighteen (18) months from the date of general availability of a subsequent major product release.
- d. Assistance: Informatica shall provide the State with access to technical support engineers for assistance in the proper installation and use of the Informatica software, and to report and resolve software problems. The hours for such assistance shall be from 9:00 a.m. to 5:30 p.m. local time in Indiana, Monday through Friday, excluding State holidays.
- e. Conduct testing on software and hardware infrastructure as needed by the State.

3.6.1.2 Teradata Platform

The State's EDW solution will be hosted on the Teradata Vantage Platform. The platform is scalable from 1 to 1,024 Teradata nodes and can accommodate from 4 Terabytes to 195 Petabytes of uncompressed user data space. The current space threshold of the database is approximately 60TB between the Production and Development/Disaster Recovery systems. The EDW continues to expand as additional data is loaded on a weekly basis and the use of the EDW expands to other areas of FSSA and OMPP.

Agency	Entity	Storage Size (Used Space in Gigabytes (GB))
FSSA	OMPP	12,610
FSSA	DFR	3,274
FSSA	Aging	73
FSSA	DMHA	62
FSSA	OECOSL	41
FSSA	DDRS (BDDS, First Steps)	22
FSSA	Finance (IMAR)	5,386
DCS	DCS (Child Support, Child Welfare)	1,549
IDOC	Indiana Department of Correction	13
IDOH	Indiana Department of Health	3.0
ATC	Indiana Alcohol and Tobacco Commission	0.50
IDOE	Indiana Department of Education	0.10

The EDW Contractor will cover 12,768 tables as the OMPP DW currently covers 11,062 tables and the SSDW currently covers 1,706 tables.

OMPP DW Tables

Agency	Division	Number of Tables	Storage Size (Used Space in GB)
DCS		5	15
FSSA	DA	60	20
FSSA	OMPP	9,754	10,352
FSSA	Finance	1,002	5,386
FSSA	OMPP	241	2,258
Total		11,062	18,031

SSDW Tables

Agency	Division	Number of Tables	Storage Size (Used Space in GB)
FSSA	DFR	926	3,183
FSSA	DFR	91	91
DCS	Child Support	254	1,524
DCS	Child Welfare	11	10
FSSA	OECOSL	132	41
ATC	ATC	2	1
FSSA	DMHA	165	62
FSSA	BDDS	2	1
IDOC	IDOC	9	13
IDOE	IDOE	5	0
FSSA	FSTEPS	42	21
IDOH	IDOH	6	3
FSSA	DA	61	53
Total		1,706	5,002

In addition to Teradata hardware, the State also utilizes the Teradata Database v17.10. The database is designed to grow at all points and uses a foundation of self-contained, parallel processing units to maximize scalability, performance, and high availability.

Note: Beginning in April 2024, GovCloud based virtual machines will be used to host the Teradata Software components for the Production and Dev/DR systems in the Microsoft Azure GovCloud tenant space provisioned by Teradata and owned and managed by the incumbent OMPP DW vendor for the incumbent OMPP DW vendor to then use on behalf of the State, and for the incumbent OMPP DW vendor to then permit use by the State.

3.6.1.3 Network Connections

The current network connection for the Production system is a 2 Gb ExpressRoute that is used to connect the cloud resources with on premises components. In April 2024, the Teradata components will be fully Cloud implemented with Production located in Texas, and Development/ Disaster Recovery located in Virginia.

3.6.2 CAE Contractor Responsibilities

The CAE Contractor shall:

- Provide support for the CAE by managing and promoting automation and scalability to the infrastructure as code using the Terraform language, support Azure Cloud Administration, provide cloud technology support and data engineering, and data reporting and dashboard creation.
- Maintain Long Term Services & Supports (Pathways for Aging) data pipelines and Tableau dashboards in support of program performance and quality measurement.
- Work with FSSA and IOT on maintaining the CAE infrastructure architecture and tool set (State responsible for licensure) for all applicable users.
- Support additions to and integration of the Indiana Medicaid Analytical Extract (INMax)

- e. Provide dedicated expertise to FSSA Divisions and the Office of the Secretary for policy analysis, situational awareness, business intelligence, advanced analytics, and data story telling.
- f. Provide technical assistance and enhance an existing tunable and scalable probabilistic record linkage solution leveraging entity-resolution in Azure Databricks that is capable of integrating disparate data entities (e.g., individuals, providers, facilities, locations) as well as persisting identity resolution to maintain an enterprise-level master person index (MPI). The State is open to other technologies for record linkage if leveraging entity-resolution in Azure Databricks is not a sustainable long-term in the proposed solution.
- g. Provide DMHA Crisis Response System technical support as needed to orchestrate the raw data into a centralized location into the CAE and develop analytical insights into the data.
- h. Provide OECOSL technical assistance to ingest data from the INKids salesforce solution into an integrated analytics data model within the CAE via stored procedures/views/data marts
- i. Support other Business uses that may be introduced as needs change within the State that require additional technical support including ingesting external partner (CMS, IHIE, State partners, etc.) data into the Lakehouse.
- j. Support the CAE infrastructure and conduct testing on software and hardware infrastructure as needed by the State.

3.6.2.1 CAE Infrastructure Components

CAE is comprised of a number of components that the CAE Contractor will be responsible for, detailed below. The information pertains only to the construction of the CAE 1.0 environment. There will be a move to 2.0 starting January 2024 (estimated) that will change the environment and the details below. Updated information will be provided to the awarded CAE Scope vendor upon Contract award.

- a. Web Application. CAE itself is a web frontend for interfacing with Azure. It is a web application developed in Ruby on Rails, and allows authorized users to manage Azure Virtual Desktops, silo users into shared folders called “Projects”, and upload datasets.
- b. JupyterHub Environment
 - CAE also has a JupyterHub environment, hosted in one of the Azure Kubernetes Service clusters. This environment is accessible in both a Trusted and Trustless format, and all CAE users can access JupyterHub if they are given the correct Azure RBAC role.
 - There are two (2) development and two (2) production JupyterHub environments, one (1) Trusted and one (1) Trustless each.
- c. Postgres Database. A Postgres database houses the user list for CAE and JupyterHub, including assigned projects and other entitlements.
- d. Azure Virtual Desktops. The primary function of the CAE is to provide Azure Virtual Desktops to users. The size is set in code but details can and will be changed post-deployment via Azure.
- e. Networking
 - Core Configuration
 - CAE deployed, and thus Azure-hosted, resources have the option of communicating with both Azure and on-premises resources, primarily databases.
 - Furthermore, there is an ExpressRoute to allow CAE virtual desktops to communicate with resources that are placed behind the State’s firewall.
 - Trusted
 - The key definition between “Trusted” and “Trustless” is the network traffic allowed.
 - Trusted users, and thereby their virtual desktops, are allowed all traffic (barring IoT network filters). The JupyterHub instance for Trusted users freely allows this same communication.

- Trustless users are specifically blocked from *most* internet traffic. It is configured in such a way that dependencies for Microsoft login and two-factor-authentication are enabled, but Trustless users and resources have no ability to access storage or data outside of resources that are also deemed to be “Trustless.”

3.6.3 Environments

Below are the names and descriptions of the EDW/CAE environments:

EDW Environments

- Development/DR: Segregated environment for new work, enhancement, and bug fixes. Ideally contains placeholder or mock data. For the Teradata components this area also functions as Disaster Recovery. The Data layer will be fully cloud hosted in Azure GovCloud beginning April 2024.
- Production: Serves as the environment for fully developed, tested, and verified data. This includes end user direct access and system-based reporting, visualization, and analysis. **Note: The Data layer will be fully cloud hosted in Azure GovCloud beginning April 2024.**
- Public: For the Tableau component only, this environment is for public sharing of fully developed, tested, and verified visualizations that have been sanitized for public dissemination.

CAE Environments

- Development: Hosted in Azure Commercial Cloud, shares tenant with Production.
- Production: Hosted in Azure Commercial Cloud, shares tenant with Development.

3.7 Business Continuity and Disaster Recovery

The Contractor is required to comply with and maintain the existing Business Continuity Plan (BCP) and Disaster Recovery Plan (DRP) and support FSSA in updating these plans, as applicable, based on evolution of data, infrastructure/architecture, and tools.

- The EDW Contractor shall maintain and take Data Domain backup and tape backups of all Teradata application data in development and production environments on a daily, weekly, monthly, quarterly and yearly basis. They will also be responsible for all backups and restores of application data from Data Domain and tape backups.
- The CAE Contractor shall be responsible for remediation of faults, vulnerabilities, issues, and other concerns found within cloud scans (Divvy scans) performed by IOT.

3.7.1 Business Continuity

The BCP must provide adequate backup and recovery for all operations, both manual and automated, including all functions required to meet the backup and recovery standards: Recovery Time Objective (RTO) and Recovery Point Objective (RPO). At a minimum, the BCP shall document the following:

Overview	<ul style="list-style-type: none"> • Identify all critical information areas • LAN/WAN • Telecommunication • Applications and data • Identify potential disruptive events • Staff duties • Man-made events
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Scope and Plan Initiation	<ul style="list-style-type: none"> • Describe operations (Contractor, State) • Create detailed account of work • List resources • Define management practices • Define roles and responsibilities • BCP Committee • Senior Management
Business Impact Analysis (BIA)	<ul style="list-style-type: none"> • Address three primary goals: <ul style="list-style-type: none"> a. Criticality prioritization b. Downtime estimation (maximum tolerable downtime) not to exceed thirty (30) calendar days in the event of a catastrophic or natural disaster; not to exceed ten (10) calendar days in the event of other disasters caused by such things including but not limited to criminal acts, human error, malfunctioning equipment or electrical supply c. Resource requirements • BIA Results • Assessment materials gathering • Vulnerability assessment • Quantitative loss criteria • Qualitative loss criteria • Information Analysis • Results and recommendation
BCP Development	<ul style="list-style-type: none"> • Recovery Plan • Continuity Strategy

The Contractor shall support ongoing testing and validation of the BCP at a minimum, annually.

3.7.2 Disaster Recovery

The Contractor shall support ongoing testing and validation of the DRP. The State will not acknowledge that recoverability exists until the plan is tested and it is able to verify the accuracy of the plan. The DRP must present:

- Statement of actions taken before, during, and after a disruptive event
- Procedures required to respond to an emergency, providing back-up operations during a disaster

At a minimum, the DRP must include the following:

Overview	Goals and Objectives
Data Processing Continuity	<p>Describe the consideration and ultimate selection of the following backup systems and facilities:</p> <ul style="list-style-type: none"> • Reciprocal (mutual aid agreements) • Subscription services • Hot site • Warm site • Cold site • Mobile site • Multiple centers • Transaction redundancy

	<ul style="list-style-type: none"> • Electronic vaulting • Remote journaling • Database shadowing • Backup and maintenance schedule
Testing	<p>Describe the consideration and ultimate selection of the following:</p> <ul style="list-style-type: none"> • Testing checklist: how you will distribute the DRP for review • Structured walkthrough: how you will walk all business managers through the test plan review • Simulation: all involved people conduct practice sessions • Parallel: primary processing does not stop • Full interruption: cease normal operations
Recovery Procedures	<ul style="list-style-type: none"> • Describe Recovery Team duties • Implement the recovery procedures in a disaster • Assure critical functions operating at backup site • Retrieve materials from offsite storage • Install critical systems and applications • Describe Salvage Team duties separate from recovery team • Return primary site to normal operating conditions • Clear and repair primary processing facility • Describe Normal Operations Team, returning production from disaster recovery to primary • Address other recovery issues • External groups • Employee relations • Fraud and crime • Financial disbursement

The EDW Contractor is responsible for the disaster recovery of the hardware and operating systems of the full EDW system (OMPP DW and SSDW, including databases). The EDW Contractor must conduct a disaster recovery exercise once a year to confirm disaster recovery functionality and document the results with an action plan for correcting issues found during the disaster recovery exercise.

The CAE Contractor is responsible for working with IOT to complete the required disaster recovery activities of the CAE. The CAE Contractor must conduct a disaster recovery exercise once a year to confirm disaster recovery functionality and document the results with an action plan for correcting issues found during the disaster recovery exercise.

3.8 Document Management

Artifacts (e.g., Requirements Document(s), User Stories, Test Scenarios, Forms Specification(s), User Interfaces) must be maintained and kept up to date throughout the Contract term. All design artifacts must be clearly noted in the State's SharePoint as in-production, legacy/archive design no longer in production, or pending updates for defect fixes and/or Enhancements in-progress. During the Initial Transition Period, the Contractor will review system artifacts (requirement documents, system documents, manuals, etc.) and update those items. Note that items no longer in production shall also be available in the ALM, but the Contractor will not have to update those items at the beginning of the Contract awarded by this RFP.

3.9 Training

As a part of the training responsibilities of this Contract, the EDW Contractors shall provide:

- a. **Training Plan:** Establish and maintain a training plan to help users to effectively utilize the Enterprise Decision Support Solution.
- b. **System Usage Training:** Provide training to users on the use of reports and business intelligence portals. Training needs to be frequently or readily available for new employees to avoid lengthy wait times for new employees to be allowed into the system prior to official training.
- c. **SDLC Training:** Provide training on the SDLC methodologies for State staff who become involved in the SDLC process but are unfamiliar with the SDLC methodologies being employed by the Contractor.
- d. **Security Training:** Provide required security training.
- e. **Training for Updated Content:** Update training content to reflect any system enhancements.
- f. **Ongoing Training:** Provide refresher trainings for new and select incumbent staff, including updates based on minor modifications and enhancements to the system.
- g. **Needs Analysis:** Conduct a quarterly analysis of support tickets and create additional training to address any areas of frequent inquiries/issues.

The Contractor shall develop and maintain a comprehensive Training Plan project detailing all required training activities for the Contractor and State staff. For each major enhancement that has new training requirements, the plan must be submitted no later than 90 calendar days from scheduled go-live. The plan shall include:

- a. Training methodology
 - Outline an agenda for proposed training sessions designated for each designated audience
 - Plans for remedial training and sessions needed to cover new or modified systems, business processes, subject matter, and policies which occur as a result of change
 - Plans for continuing education of State and Contractor staff and orientation training for new staff
 - Description of the professional background, skills, training experience, and knowledge of subject matter of proposed trainers
 - Evaluation criteria and description of how evaluations will be used to improve course content and presentations
 - Training schedule for all stakeholders including the proposed number of classroom style sessions for completion prior to implementation
- b. Examples of training materials
- c. Process for operational inputs as a result of training including but not limited to issues identified through evaluation of service requests and provider outreach activities

The Contractor shall conduct all training in accordance with the State-approved Training Plan. Training Materials shall be submitted no later than 30 calendar days from each training session, unless otherwise approved by the State. Training materials shall be updated by the Contractor as needed to reflect system changes.

The Contractor shall submit an annual Training Plan Update for State review and approval within 30 business days prior to the end of the Contract year.

4 Compliance with Privacy/Security Standards & Regulatory Requirements

The Contractor must ensure their systems comply with all State and Federal laws and regulations, including but not limited to the Americans with Disabilities Act (ADA), the Balanced Budget Act (BBA) of 1997 Subtitle H, and the Medicaid Managed Care rules, 42 CFR 438. The Contractor must also comply with FSSA Security Policies (<https://www.in.gov/fssa/security-policies/>).

4.1 Privacy Standards

The State of Indiana requires that all vendors comply with all current and future HIPAA privacy rules, applicable privacy controls under Attachment B Sample Contract - Clause 12; Minimum Acceptable Risk Standards for Exchanges MARS-E Version 2.0 (and all subsequent versions); Internal Revenue Service (IRS) Publication 1075; FISMA, FIPS and NIST standards privacy and security standards; as well as other State and Federal laws and regulations as they relate to protecting the privacy of and security over citizen information in the Contractor's safekeeping.

With regards to privacy standards, the Contractor shall:

- a. Uphold the State's privacy guarantees as documented in Indiana Code 5-14-3: <http://www.in.gov/legislative/ic/code/title5/ar14/ch3.html>.
- b. Comply and maintain with all HIPAA requirements for privacy and security in all activities related to the Contract.
- c. Comply with the applicable privacy controls enumerated under the MARS-E Version 2.2 (and all subsequent versions).
- d. Implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the Protected Health Information ("PHI") and Personally Identifiable Information ("PII") that the Contractor creates, receives, maintains, or transmits on behalf of the State of Indiana.
- e. Mitigate, to the extent practicable, any harmful effect that is known to the Contractor of PHI and PII obtained under this Contract in a manner not provided for by this Contract or by applicable law of which the Contractor becomes aware.
- f. Ensure that any subcontractors or agents to whom the Contractor provides PHI or PII received from, or created or received by the Contractor, and subcontractors or agents on behalf of the State, agree to the same restrictions, conditions, and obligations applicable to such parties regarding PHI and PII.
- g. Report to the State any security and/or privacy incident of which the Contractor becomes aware. Please see Section 4.2 for additional details.
- h. Train all staff on the privacy rules and requirements (it is the State's expectation that the Contractor will develop and provide to its staff applicable training the successful completion of such training on no less than an annual basis; in addition, Contractor staff will need to undergo specific State-provided privacy and security training upon first hire and then on no less than an annual basis).

Within 60 calendar days of the commencement of duties under the Contract, the Contractor shall provide their plan to secure and protect the State's data, including but not limited to private client information. Such plan should include:

- a. Steps taken by the Contractor to ensure that client information is not used, disclosed or maintained in a manner not in accordance with the law and best practices.
- b. The Contractor's policy for the secure destruction of information.
- c. The internal security and privacy policies and practices, including managing private client data, and any staff training to ensure up-to-date compliance.

- d. How the Respondent will use the State's Active Directory repository to authenticate users, where applicable. The proposal must also describe how the Contractor shall inform the State of any potential breaches or compromises of client information, by any means, immediately for the State to document and track to resolution.
- e. The Contractor shall adhere to the IOT Information Resources Use Agreement (IRUA) during use of all state facilities and equipment to execute all activities described in this Scope of Work.

4.2 Security

The Contractor shall adhere to the below listed security standards, including any subsequent standards released throughout the course of the Contract, and agrees to meet any additional standards not included in the below lists if the State adopts such standards in the future.

State Requirements

- a. The State has robust and comprehensive security standards that permeate all levels of the organization. IOT has been tasked with establishing and maintaining these security standards. The Contractor must comply with all aspects of IOT Policies, Procedures, and Standards, including the Information Security Framework:
 - IOT Policies, Procedures, and Standards
 - IOT Information Security Framework
 - IOT Project Review Policy

The following link introduces the IOT Information Security Framework that applies to the Contractor:

<https://secure.in.gov/information-security-framework/>. A link to the instructions for accessing the Information Security Framework through submission of a Non-Disclosure Agreement can be found here: <https://www.in.gov/iot/iot-vendor-engagement/>

- b. Comply with the State of Indiana security requirements found in IC 4-1-6, IC 4-1-10, and IC 4-1-11.
- c. Comply with and uphold FSSA's security standards found at: <http://www.in.gov/fssa/4979.htm>
- d. Support and comply with new FSSA and IOT initiatives and directives regarding new or enhanced security measures. Comply with the applicable safeguard requirements for TANF information under IC 12-14-1 and for Medicaid information under IC 12-15-27.
- e. Comply with IOT's Information Resources Use Agreement (IRUA) found at: <https://www.in.gov/iot/IRUA.htm>.
- f. Perform access authentication against the IOT-managed Active Directory (LDAP) or Azure Active Directory (AAD) service for all access (user and service accounts).
- g. Comply with IOT standards regarding encryption of all communications (FIPS 140-2). Encrypt all data stores to the FIPS 140-2 standard.
- h. **EDW Only:** Currently the EDW is in GovCloud High, but only a small percentage of the system needs that level of protection. In the future, the State may desire to implement a hybrid, partitioned environment so that the portions that do not need GovCloud High can use a lower level of protection.

Federal Requirements

- a. Support the Federal automated data processing requirements, such as 42 U.S. Code § 654a - Automated data processing.

- b. Comply with the applicable privacy and security standards promulgated by the Centers for Medicare & Medicaid Services (“CMS”) enumerated under MARS-E, Version 2.2, including successor versions (note: MARS-E is based on NIST Special Publication 800-53 and contains enhancements defined by CMS), as required under 45 CFR §155.260. Meet the password control standard under MARS-E. Establish the system’s application access control (authorization) in compliance with MARS-E. The application access control must be based on unique roles (role-based security) defined for that user.
- c. Comply with the HIPAA Privacy and Security Standards promulgated by CMS under 45 CFR Parts 160, 162, and 164.
- d. Comply with the applicable Internal Revenue Service safeguards requirements for Federal Tax Return Information as established in IRS Publication 1075.
- e. Vocational rehabilitation information under 34 CFR §361.38.
- f. Social Security Information (exchanged with the Social Security Administration) as defined under the Privacy Act of 1974.
- g. Substance abuse and mental health information established under 42 CFR Part 2.
- h. SNAP information under 7 CFR §272.1(c) and within the [Federal Nutritional Service \(FNS\) handbook 901](https://www.fns.usda.gov/sites/default/files/resource-files/HB901v2.4.pdf) (including Chapter 9, Systems Security):
<https://www.fns.usda.gov/sites/default/files/resource-files/HB901v2.4.pdf>
- i. Comply with the applicable safeguard requirements for TANF information under 45 CFR §205.50 and for Medicaid information under 42 CFR Subpart F
- j. Meet the HHS IT Access Control Standard and MARS-E requirements for unique user identification (UUI). UUI access and security roles are assigned by FSSA Account Control in conjunction with IOT security administrators.

Additional Standards. The Contractor shall also adhere to the following Security Standards:

- a. At a minimum, the vendor is expected to staff one FTE-equivalent resource, adhering to the standards set forth in Section 7 - Staffing, to operate as a Security Officer whose responsibilities include, but are not limited to, adhering to the standards set out in Attachment B - Sample Contract - Clause 12.
- b. At a minimum, detail and plan for regular and routine security assessments.
- c. Comply with any other applicable Federal or State regulations and requirements.
- d. Use available Security Architecture assets in constructing solutions.
- e. Apply all security patches to the software and hardware it controls on a timely basis. Ensure that all hardware has relevant antivirus and anti-spyware software to ensure a safe operating environment.
- f. Ensure operating system and application audit logs are generated in accordance with MARS-E (reference AU controls); audit logs are to be retained online for no less than 90 calendar days and retained in accessible archive storage for no less than 10 years. In addition, Contractor will facilitate audit log integration with the State’s SIEM solution for event correlation, analysis, and alert functions.
- g. Work with IOT and FSSA to secure all environments (e.g., development, integration testing, performance testing, user acceptance testing, production staging, and production) to no less than the MARS-E and State standards. As a matter of policy, production data cannot be used for testing unless such data is masked to the extent that any improper use or disclosure of such data would not constitute a breach under Federal and State laws and regulations. Further, Contractor’s design of the system must address the MARS-E and FSSA policy requirements for data minimization.
- h. Train all staff (including subcontractor staff) on the applicable Contract security requirements.
- i. Test security compliance quarterly and apply required changes to security methods that security compliance testing identifies.

4.3 CMS Certification Support (EDW)

The EDW Contractor shall provide CMS certification to:

- a. Compile reports and data required for the preliminary letter submission to CMS.
- b. Prepare required certification manuals, reports, forms, and documentation.
- c. Provide Contractor staff to assist State personnel in certification procedures, EDW operations, and information needed for the State to make certification presentations.
- d. Participate in CMS site visits including those at the Contractor's operational facilities.
- e. Offer expertise to answer questions and locate and provide additional materials needed by the CMS review team.
- f. Provide support with all CMS-APD monthly-reporting activities.

The EDW Contractor shall also provide additional certification assistance as needed by the State.

4.4 Medicaid Information Technology Standards

The Contractor shall comply with the MITA-directed data management, governance, and maturity model found at <https://www.medicaid.gov/medicaid/data-and-systems/mita/index.html>. Additionally, the Contractor shall work with the State and FSSA systems on improving MITA maturity with defined goals throughout the Contract term.

4.5 Usability and Accessibility

The Contractor is required to support compliance with Website Accessibility under Title II of the American Disabilities Act (ADA), 28 C.F.R. § 35.160, 28 C.F.R. § 42.503, Section 504 of the Rehabilitation Act, Section 508 of the Rehabilitation Act, CMS SMC requirements, and FNS Handbook 901 requirements. The Contractor must use Web Content Accessibility Guidelines 2.1 (WCAG 2.1) or an equivalent standard in ongoing Software Development Lifecycle (SDLC) requirements, design, testing, ongoing assessment, and defect resolution of the systems that the Contractor maintains on behalf of the State. This expectation applies to all M&O scope and should also be incorporated within any enhancements that may modify components that the Contractor maintains on behalf of the State.

4.6 Other Technical Standards

- a. In addition to the standards listed above, Section 12 (Confidentiality, Security and Privacy of Personal Information) of Attachment B applies.
- b. The Contractor must adhere to additional Terms and Conditions related to Cloud-based systems. Depending on the hosting approach, one or more of the following sets of Additional Terms and Conditions (Attachments B1, B2, and B3) will apply:
 - IOT Additional Terms and Conditions - Infrastructure as a Service Engagements (IaaS)
 - IOT Additional Terms and Conditions - Platform as a Service Engagements (PaaS)
 - IOT Additional Terms and Conditions - Software as a Service Engagements (SaaS)
- c. The Contractor shall comply with:
 - Data Warehouse best practices
 - SDLC Agile best practices (see <http://www.in.gov/iot/2394.htm> for more information)

- d. The Contractor must support standard API and file transfer methods for data transmission. The State has robust and comprehensive data transmission standards that operate enterprise wide. IOT established and maintains these standards, which support IOT's data exchange and API-led strategies for the State. IOT recommends that the State's standardized technologies, MuleSoft API Management and GoAnywhere Managed File Transfer (MFT), are employed to facilitate secure data transmission. The following link introduces IOT's API Center for Enablement and API-led Strategy: <https://ingov.sharepoint.com/sites/MuleSoftC4E>.

5 Project Management

5.1 Project Management Standards

The Contractor must develop an overall Project Management approach that shall be reviewed and agreed upon in collaboration with the State.

Decision governance structure and prioritization of M&O tasks and enhancements will be set and managed by executive management and IT leadership. The Contractor is expected to support the State in maintaining an efficient and effective decision governance structure by providing best practices and/or insights from previous experience maintaining and operating a system similar in size and scope.

For each meeting with program areas and other stakeholders, the Contractor will be responsible for coordinating logistics, preparing meeting agendas, documenting and publishing meeting notes and action items, and follow up on action items as needed.

From the CMS SMC, the Contractor must provide the following services with Program/Project Management for Enhancements efforts, and maintain these concepts throughout the Contract:

- a. Planning Services
 - Vision, strategy, assistance in developing goals and objectives
 - Concept of operations
 - Enterprise functional and non-functional needs analysis
 - Continuity of operations and disaster recovery planning
 - Architectural & engineering decomposition
 - Communications planning
 - Organizational change management, identify stakeholders and owners for each module and business area, assess stakeholder and owner needs, measure change adoption, administer reinforcement mechanisms
- b. Management Framework Services
 - Enterprise design, pattern and portfolio management
 - Enterprise architecture, modelling and integration
 - Enterprise technical roadmap orchestration with sequencing and transitioning plan
 - Enterprise functional and non-functional requirements
 - MITA strategy, align to-be and Standards and Conditions for Medicaid IT goals to module integration and certification plans, validate plans against MITA Maturity Roadmap, identify deviations from MITA strategy, manage issues and communication with MITA business process owners (Scopes A and C)
 - Development life cycle
 - Enterprise management of master integrated schedule, scope, change control, risk management, and quality assurance
- c. Functional Implementation Services

- Standards selection
 - Master data management, identity, and access management
 - Document management
 - Integration services
 - Business architecture and modeling, business rules engine
 - Information architecture and modeling
- d. Technical Implementation Services
- Environment / infrastructure
 - Network services
 - Portal, module portal
 - Enterprise service bus, adapters, meta data repository, transfer engine, process orchestration engine, dashboard, batch engine
 - Identity management
 - Platform services layer, data services layer, master data
 - Enterprise services registry
 - Standards selection
 - Security architecture and framework
 - Application Programming Interface (API) management and governance, publish and promote APIs, automate and control connections, monitor traffic, provide memory management and caching mechanisms, manage governance platform, API subscriptions, API promotion meta-data and design checkpoints and synchronize with Service-Oriented Architecture (SOA) governance and business strategy and goals
- e. Module Integration
- Advise source selection committee, assess modules for fit within enterprise architecture (EA) and integration platform
 - Validate open APIs and standards, fit/gap assessment documentation, inform configuration-over-customization decisions throughout project life cycle
 - Develop master data conversion, migration and test plans and associated procedures and standards
 - Define test acceptance criteria and standards enforcement
 - Oversee module vendor integration and deployment activities
 - Assist in module integration as required for modules vendors without sufficient native integration capabilities
- f. Certification Involvement
- Participate in and support certification activities with the State and CMS and monitor necessary modifications

The Contractor shall comply with:

- a. The SNAP Review of Major Change in Program Design and Management Evaluation Systems (<https://www.fns.usda.gov/snap/fr-011916>)
- b. 7 CFR 272.15 - https://www.ecfr.gov/cgi-bin/retrieveECFR?gp&SID=554a114787306539d28c8b2866266b28&r=PART&n=7y4.1.1.3.20#se7.4.272_115)
- c. Test Plan requirements (as part of FNS Handbook 901 and 7 CFR 277.18 (https://www.ecfr.gov/cgi-bin/text-idx?SID=a6828ac000f6e75ae4679d5beecb637c&mc=true&node=pt7.4.277&rgn=div5#se7.4.277_118)).

The State also requires support from the Contractor ensuring that the FNS System Integrity Review Tool (SIRT) requirements are supported. While addressing a major enhancement, the Contractor shall support the State in completing Major Change and Test Plan documentation, as applicable for the “Major Change”. While the State will own and be responsible for documentation submitted for review to FNS, the Contractor will be expected to provide content as directed by the State and also address any questions, concerns, or corrective actions that FNS indicates throughout their review or during SDLC activities.

5.2 Project Plan Components

The Contractor shall each develop a Project Plan that addresses execution of their scope of work. The Project Plan shall be developed according to industry standards and best practices including the Project Management Institute’s (PMI) latest Project Management Body of Knowledge (PMBOK) and IEEE system and software processes where applicable. Once the Project Plan is approved by the State, the Contractor shall maintain and modify the approved Project Plan throughout the project by updating it to reflect the evolving schedule, priorities, and resources (i.e., it is a living document). At a minimum, the Project Plan shall include:

- a. Project Schedule with tasks and timeline for each enhancement and change request
- b. Project Organization and Resource and Staffing Plan, along with Vital Personnel by name, title and job function, location, and whether the personnel are Contractor or subcontractor employees
- c. Configuration Management Plan
- d. Issue Management Plan
- e. Risk Management Plan
- f. Communication Plan
- g. Quality Management Plan
- h. Quality Assurance Measures to be employed throughout the project
- i. Descriptions of any tools that the Contractor will use to manage any component of the Project Plan
- j. MITA Maturity Improvement Plan, in conjunction with other FSSA systems
- k. Transition Plan

The Project Plan will be reviewed monthly, or at the State’s request, but the Project Schedule must be updated weekly. Any change to the Project Plan and Project Schedule will require State approval.

5.3 Status Updates

The Contractor shall submit Weekly Status Reports using an approved template that include an updated Risk Log with risk mitigation strategies, Issues Log, and the latest Project Schedules and status updates. The Contractor shall meet with the State to provide project updates and review these reports during the monthly update meetings. The State may adjust the meeting frequency as needed, particularly when there is a high degree of enhancement activities during a certain time period.

The Contractor shall also attend any ad hoc meetings requested by the State, including any meetings to provide executive project updates. If onsite attendance is necessary, the State will provide advanced notice. If presentation material is necessary, the Contractor shall develop the materials.

5.4 Change Management and Control Process

5.4.1 Integrated Change Control Process

The Integrated Change Control process for FSSA is mature and, at the State's discretion, will be supported with electronic forms with required fields, and a Steering Committee with regular meetings and an established Communication Plan. Performing integrated change control is the process of reviewing all change requests and approving and managing changes to evaluate the impact to time, cost, and quality. Having a well-defined and robust change control process is crucial because of the multiple end user organizations involved. The Contractor will be provided access to all these processes and the State's defined SDLC tool to support their role in Change Control.

Any State or Contractor requests for changes to approved deliverables, software, processing, procedures, manuals, forms, reports, and other approved project artifacts will follow the following change management process:

- a. The Contractor shall develop a Change Request (CR) no later than one (1) week after the State's request (or a different period if mutually agreed upon with the State at no additional cost to the State.) For all change requests, the Contractor shall gather, document, define fixed resource types and rates, and provide requirements to the State for approval. The CR shall include:
 - Description of proposed CR, including requirements and a list of work products or deliverables that the Contractor will submit to implement the proposed CR
 - Justification of Change, including cost benefit analysis if requested
 - Project Schedule with CR implementation date
 - Type of Release (Major, Minor, Fix – see Section 5.4.6)
 - Staffing Plan (i.e., organization chart, staff names and titles), including any relevant Subject Matter Experts (SME) that will be needed for the CR, and cost breakdown (hours by individual multiplied by contractual rates)
 - Staffing projection analysis with supporting documentation of the reasons the Contractor believes the fees will be materially impacted by the proposed CR
 - Anticipated work location(s) and non-standard work hours, if applicable
 - Cost based on the State's requested structure for the change (fixed fee, or time and materials-based pricing, or an alternate approach).
 - Analysis of impact on any backlog or current CR, enhancements, or maintenance activities
 - Applicable program/funding source for the Change (if known)
 - An analysis of the impact of the proposed Change on the following (as appropriate given the nature of the proposed Change):
 - i. Projected or anticipated savings (if any)
 - ii. An assessment of the added value of a proposed Change to the State and to meeting policy objectives
 - iii. SLAs and any performance withholds or incentives in addition to those in the Contract
 - iv. Security impacts and how they will be addressed
 - v. Any other matter reasonably requested by the State or reasonably considered by the Contractor to be relevant
- b. The impacted program area to confirm funding source if not already finalized.
- c. Program area shall review the CR and approve or request modifications or additional information. The Contractor and the program area will cooperate with each other in good faith in discussing the scope and nature of each CR. The Contractor shall submit a change request for any identified deficiency within three (3) business days or within a timeframe defined by the program area.
- d. The program area will review estimates and either approve or disapprove changes based on estimates, priority, and other factors. The program area reserves the right to condition the approval of any CR on the review, input, and approval of any governmental body that the program area deems appropriate with respect to the CR.

- e. Once the CR has been approved for implementation (including any modifications made during the review process), it shall be deemed an Approved CR. The program area will clarify priority and impact on existing enhancements and other change requests. The Contractor shall not begin work on any CR prior to receiving program area approval.
- f. In the event of a dispute between Contractor and State of a change's classification as maintenance, the Contractor shall proceed through the implementation of the CR without delay.

Any document resulting from the change request shall be binding upon agreement and signature of all associated parties. As a part of the Integrated Change Control process responsibilities, the Contractor shall:

- a. Strive to adhere to ITIL standards associated with change management activities – Request for Change.
- b. Ensure that there is adequate planning to accommodate the State and any impacted vendors.
- c. Work with the State to update Project Control Documents.
- d. Provide a weekly report that includes a listing of each outstanding change request along with the State's requested documentation. The Contractor shall work with the State to communicate status to stakeholders.
- e. Monitor outcomes, including Incidents, Problems, impacts to proposed schedules or timelines, additional Changes and Service Requests that may result from any Change should a Change result in an Incident, the Contractor shall participate in Post Incident Review (PIR) and or Problem management activities as requested by the State.

Additionally, as part of the Change Control Process, the Contractor may be asked to complete the Resource Usage Template (Attachment M).

5.4.2 Policy Changes

A critical trigger for change is policy changes. The Contractor shall assist the State in identifying policy changes at the local, state, and federal level that may impact the respective Enterprise Decision Support Solution. Their solution is expected to respond efficiently and effectively to the need for changes stemming from the ever-increasing complexity of the health care and social services environment brought about by policy changes at the local, state, and federal level. To stimulate and support innovative responses to the demand for change, each Contractor is required to actively participate in the change evaluation process and ensure that they analyze and understand the impact of all changes regardless of the originating party.

5.4.3 FNS Major Change and CMS Significant Change

FNS: The FNS Major Changes Notification Template can be found at <https://fns-prod.azureedge.us/sites/default/files/resource-files/major-changes-notification-template.pdf>. In the event of a Major Change, as defined in 7 CFR 272.15:

- a. The FNS Major Change Notification template will be completed and approved by the FNS no less than 120 calendar days before beginning implementation or entering into contractual obligations to implement any proposed Major Changes.
- b. Required artifacts will be submitted to FNS, including baseline and ongoing reporting demonstrating the impact of the Major Change.
- c. The State will collaborate with FNS on any specific reporting requirements that arise from specific aspects of a Major Change to demonstrate impact and effectiveness of the change. These specific reporting requirements may require support from the State's E&E system and reporting partners to fulfill ongoing reports and questions regarding Major Change status.

CMS: In the event of a Significant Change, the requirements, release information, test scenarios, test results, and reporting along with Independent Verification and Validation (IV&V) information will be shared with CMS by the State, as applicable, as part of CMS Streamlined Modular Certification (SMC) requirements and MARS-E. Any changes must support ongoing compliance with applicable requirements from CMS for Streamlined Modular Certification (SMC):

<https://www.medicaid.gov/medicaid/data-systems/certification/streamlined-modular-certification/index.html> and <https://cmsgov.github.io/CMCS-DSG-DSS-Certification/>

Further, Significant Changes are cited in MARS-E 2.2, control CA-6 which indicates, *"The organization must notify CMS of significant changes to architecture, security posture, or other items that could impact the security or privacy of the system prior to making a change."* Within that guidance language there, there is citation to the Significant Change definition under NIST SP 800-37 Revision 2, Appendix F. Accordingly, a control assessment must demonstrate that the new component being installed (or changed) ensures moderate risk or better, subject to CMS review.

The State will collaborate with CMS on any specific reporting requirements that arise from specific aspects of a Significant Change to demonstrate impact and effectiveness of the change. These specific reporting requirements may require support from the State's Eligibility and Enrollment, reporting, and privacy/security partners to fulfill ongoing reports and questions regarding Significant Change status.

How the Major and/or Significant Change is identified: During the change prioritization process, impact of the change to applicants, participants, and caseworkers will be evaluated. Aspects like program access, application processing, technical/security architecture, and customer service will be considered by the State to classify the change as a Major and/or Significant Change.

How the Major and/or Significant Change is tracked: In the State's ALM tool, Major and/or Significant Change and its impacted program is tracked. All impacted programs are identified along with whether the item is a Major and/or Significant Change based on the State's assessment. Based on this information, the related artifacts, requirements, scenarios, and other related content can be tracked as work progresses in support of the Major and/or Significant Change.

How testing progress will be tracked and reported for Major and/or Significant Changes: Testing progress will be tracked in the project ALM by the Contractor, with periodic reporting of applicable scenarios/results available for the State as per the sample attached below. The State will utilize the testing status tracked in the ALM by Contractor and UAT teams to populate the formats required by FNS and CMS. The State will communicate the progress with respective stakeholders as necessary.

5.4.4 Right to Contract with Other Service Providers

Notwithstanding any other provision of this Agreement, the State retains the right to contract with one or more service providers for any matters that would be the subject of a CR.

5.4.5 Priority of Change Requests

In the event the State reasonably determines that in-process CRs cannot be accomplished within the expected timeframes, or which would be impractical to implement at the same time due to workload constraints and other relevant factors, the priority in which the CRs shall be worked shall be determined by the State.

5.4.6 Releases

Changes will be put into production either through a Major Release, Minor Release, or a Fix Release. These releases are defined below:

- a. Major release: Major or significant code impact, code change, and enhancement
- b. Minor release: Minimal impact, code change, and enhancement
- c. Fix release: For emergency or hot fixes

Each Major and Minor Release is a collection of CRs (enhancements, changes, configuration updates, defects, and fixes) with indexed reference numbers tracked by the State's ALM tool. Non-Production Release promotions to production are individual CRs or defect fixes, also tracked via indexed reference numbers from the ALM.

The ALM toolset (FSSA uses both the Atlassian and ADO tool set) will serve as both documentation and configuration repository for the guidelines on how code should be migrated and base lined. Code baselines provide a foundation for testing, training and subsequent releases. The State prefers that the Contractor use Atlassian and/or ADO toolset, including tools that interface with these tools, but is open to proposals that recommend alternative tools.

5.4.7 No Cost Impact: Routine Changes and Software Warranty

Routine changes made in the ordinary course of the Contractor's provision of services defined within the scopes of their contracts, such as changes to operating procedures, schedules, equipment configurations, shall be made at no additional cost to the State. Examples of routine changes that are included in the routine maintenance of the Enterprise Decision Support Solution and are to be performed at no additional cost to the State are:

- a. Activities necessary for the solution to (a) function in compliance with Federal and State laws and administrative rules, the State Plan, State waivers, State policies, and the operating manuals in effect at the time of proposal submission and (b) to correct deficiencies found after implementation of modifications. The State expects the Enterprise Decision Support Solution to maintain continual Federal and State regulation compliance.
- b. Activities necessary to comply with new industry standards and operating rules associated with those standards.
- c. Activities necessary for the system to meet the contractual performance requirements.
- d. Activities necessary to ensure that data, tables, programs, and documentation are current and that errors are found and corrected.
- e. Data maintenance activities for updates to tables, including database support activities.
- f. Changes to scripts or system parameters concerning the frequency, number, sorting, and media of reports.

All change requests are considered either covered under the Software Warranty (See Section 3.3.3) or are no cost maintenance change requests unless the State approves additional compensation through the change control process. Determination of such status including Contractor dispute of status shall not delay the implementation of the change request.

For changes that are considered neither M&O nor Software Warranty-covered, please see Section 3.3 (Enhancements and SDLC).

The State is dependent on the Contractor for providing products and services that fully comply with the requirements and deliverables set forth in the Contract. State approval of each Contractor's work product associated with the responsibilities, requirements, and deliverables does not in any way relieve the Contractor from full financial responsibility should the Contractor's work product not meet the State requirements, as set out in the Contract.

5.5 Quality Management

Quality Management describes the processes that will be used by the Contractor to ensure that deliverables are of satisfactory quality to the State. It is the responsibility of the Contractor to clarify with the State if uncertainty exists on the part of the Contractor with regard to applicable quality standards.

The Contractor must ensure that it has an ongoing quality management process and that this process is designed to fully integrate with the efforts of the State and the other designated vendors. This will take the form of information sharing, regular meetings to review quality data feedback, and the establishment of common continual improvement goals and objectives. As a part of quality management responsibilities, the Contractor shall:

- a. Develop quality assurance (QA) functions to regularly monitor performance and compliance of each business process managed by the Contractor. Assign staff to conduct the QA process who are independent of those performing the work.
- b. Work with the OV&V vendor on quality assurance as directed by the State.
- c. Develop an approved Quality Management Plan that focuses on being proactive and preventing problems rather than allowing problems to occur and ensuring that work products and deliverables meet business objectives, end-user expectations, and defined requirements.
- d. Provide information about the impact of a system deficiency, the proposed action plan, and describe any appropriate workaround to appropriate State stakeholders.
- e. Provide a well-researched and clearly explained root-cause analysis (RCA) for any issue including, but not limited to, a description of the problem, action plan to be taken, and measures that will be taken to prevent such a problem in the future. The vendor shall draft and present a written RCA to the State within six (6) calendar days of an issue being identified. The written root-cause analysis (RCA) shall be completed within seven (7) calendar days of the resolution of the situation addressed by the RCA.
- f. Develop monthly QA reports that summarize the quality assurance activities performed during the month.
- g. Report results of any State-required audit within thirty (30) calendar days of the audit, providing the Contractor's detailed response including actions to be taken by the Contractor to effectively correct any negative findings.
- h. Implement Corrective Action Plans (CAPs) as needed to correct quality concerns (See Section 8.5 for additional information on CAPs).
- i. Complete all necessary corrective measures within ninety (90) calendar days of receipt of the audit findings or on a schedule agreed to by the State.
- j. Provide a report within ninety (90) calendar days of receipt of the audit or on a schedule agreed to by the State detailing the corrective measures undertaken to respond to audit findings.

5.6 Management Reporting

5.6.1 Status and Performance Reports

The Contractor shall provide the following reports in the format and timeframe as agreed upon with the State. During the first 30 days of the Contract, the Contractor will submit clear templates for each report and update the templates based on State feedback until State approval is achieved.

- a. **Weekly Status Report:** Report on the general health of the project-related work including:
 - Activities completed in the past week
 - Activities planned in the next four weeks

- Project issues
- Project risks and mitigation strategies
- Updates on hours used on Enhancements via the Enhancement Burn-Down Report
- Maintenance and Operations phase specific:
 - Number of open helpdesk tickets/issues
 - Number of closed helpdesk tickets/issues
 - Milestone dates for on-going development activities
 - Planned application release and bug fixes

Reports are due by 5:00pm ET each Tuesday. If a Tuesday is a State holiday, the report will be due the next business day.

- b. **Monthly Service Level Agreement Report:** Report detailing previous month's performance in accordance with Service Level Agreements in Section 8 and reports that include key performance indicators (KPIs). For example:
- ☐ How many Change requests resulted in Incidents?
 - ☐ What percentage of Change requests were classified as "Emergency" changes?
 - ☐ How many Incidents were resolved on the first call to the Help Desk?

Monthly status reports for the previous month will be due no later than the 10th of the month. If the 10th is on a weekend or holiday, the report will be due the next business day.

- c. **Quarterly Performance Report:** Report detailing deviations to SLAs for the past quarter and reasons for the deviations. Quarterly status reports for the previous quarter will be due no later than the 10th calendar day of the current quarter. If the 10th is on a weekend or holiday, the report will be due the next business day.
- d. **Annual Summary Reports:** Annual reports for the previous year's performance will be due by the end of the first month in the new year. If that day is on a weekend or holiday, the report will be due the next business day.

5.6.2 SSDW Task and Hours Tracking (EDW Only)

The EDW Contractor is required to track their tasks and hours by staff for the purposes of time and cost allocation due to the multiple users of the SSDW. Currently, the incumbent SSDW vendor accomplishes this through Jira.

The EDW Contractor shall provide monthly reports to FSSA Finance for allocating SSDW M&O environment expenses across program areas served by SSDW in a given month. Below is a screenshot of a Monthly Time Allocation Report provided to FSSA Finance.

Social Services Data Warehouse (Ongoing Maintenance and Support) Time Allocation - SFY 2024													
Step 1 - NTT DATA inputs percentages													
Source System	%Time Allocated for SFY 2024												
	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Avg. Time
DCS Child Support													
DCS CPCS													
DCS Child Welfare MaGIK													
DFR TANF													
DFR SNAP													
DFR SNAP IMPACT													
DFR County Admin													
DFR EBT													
CCDF OECOSL													
OMPP Requests													
OMPP DFR Requests													
OMPP HIP													
FSSA Admin OHA													
FSSA Admin KPVSec Dashboard													
FSSA Admin SDOH													
DDRS BDDS													
DMHA													
Aging													
Total												0.00	

5.7 Risk Management

Within 60 calendar days of the commencement of duties under the Contract, the Contractor shall provide a Risk Management and Mitigation plan, including its process for documenting and reporting risks and risk status to the State. This plan should include:

- Contractor's plan to identify potential risks and develop recommended steps to mitigate those risks.
- Contractor's plan to track and manage the implementation of any mitigating steps.
- Any proposed tool(s) to track, manage, and report risks and to facilitate the Contractor's Risk Management Plan.
- The benefits of the recommended risk management and mitigation process to FSSA.

6 Transition and Turnover

6.1 Initial Transition Period

6.1.1 Initial Transition Period – EDW

Prior to taking over the M&O services, the EDW Contractor shall work with the State to develop and manage plans for transferring services from the incumbent vendor for their respective Scope over a ten (10) month period. As a part of the Initial Transition Period, the incumbent vendor will develop and commence implementation of a State-approved Turnover Plan and leave behind solution documentation (inventories, code/logic, training materials, SDLC artifacts, correspondence, documentation of outstanding issues, and operational support information). Further, it will be clarified what in-progress M&O and Enhancement activities will be applicable during the Initial Transition Period and later, during the Contract term. During the Initial Transition Period, it is anticipated that some Enhancements may be in early design and/or conception phase, with M&O activities ongoing for incident management, defect management, batch management, security management (e.g., vulnerability patching, Plan of Action and Milestones (POA&M), and security testing), and usability/ Americans with Disabilities Act (ADA)/Section 508/ Web Content Accessibility Guidelines (WCAG) 2.1 accessibility testing and resolution.

The Contractor will complete the following deliverables during the Initial Transition Period. Note that while the State expects all of the activities below to be executed, at a minimum, the State would consider the Contractor's recommended movement of these activities throughout Initial Transition months if the Contractor can justify why that adjustment would be optimal for the State. The Contractor will invoice the State for the monthly cost only when the associated deliverables for that month are approved by the State. While the activities below are cited as deliverables, it is anticipated that the Contractor will undertake a number of sub-activities to accomplish the milestones implied by the deliverables listed.

Month	Deliverables
1	<ul style="list-style-type: none"> Initial Transition Plan finalized, subject to State approval, including resources (quantity, type, and role) who will be available for all ten (10) months of the Initial Transition Period. Indicate what the State and incumbent vendor would make available to the Contractor. Further, indicate the activities to be executed in each of the Initial Transition Period months. Creation of ongoing Transition meetings with the incumbent vendor, the State, and IOT.
2	<ul style="list-style-type: none"> Confirmation of working read-only access to all aspects of the infrastructure and ALM, including State-issued credential process understood and realized for initial Contractor users. Clarification of points of contact for all aspects of Enterprise Decision Support Solution support that the State and its partners will use going forward. If applicable, work with the incumbent vendor on the timing of any change of employment of incumbent vendor staff. Documented Project Management Plan, in compliance with State and Federal requirements, subject to State approval. Documented Hybrid Agile SDLC, in compliance with State and Federal requirements, subject to State approval.
3	<ul style="list-style-type: none"> SDLC Training Plan finalized for training the State and its partners who will be involved in requirements/design, testing, implementation, and other SDLC monitoring and/or supporting activities. Begin shadowing the incumbent vendor and State on all aspects of Project Management, SDLC, and other Enterprise Decision Support Solution supporting activities. This shadowing includes the monitoring of Helpdesk tickets.
6	<ul style="list-style-type: none"> Evidence of participation in all training provided by the incumbent vendor in operations and procedures.
9	<ul style="list-style-type: none"> Standard monthly M&O fees begin Confirmation of full administrative edit access for appropriate staff. Completion of all training provided by the incumbent vendor in operations and procedures. Begin incumbent vendor "reverse shadowing" activities for supporting the Contractor and the State as the Contractor takes on additional enterprise data solution responsibilities.
10	<ul style="list-style-type: none"> Execution of training for State and Contractor staff on SDLC procedures. Completion of shadowing of the incumbent vendor staff in the promotion of releases to production, as well as maintenance of the production and non-production environments. Role of promotion of releases to production, as well as maintenance of the production and non-production environments, fully transferred to Contractor. Completion of reverse-shadowing.

6.1.2 Initial Transition Period - CAE

Prior to taking over the M&O services, the CAE Contractor shall work with the State to develop and manage plans for transferring services from the incumbent vendor for their respective Scope over a six (6) month period. As a part of the Initial Transition Period, the incumbent vendor will develop and commence implementation of a State-approved Turnover Plan and leave behind solution documentation (inventories, code/logic, training materials, SDLC artifacts, correspondence, documentation of outstanding issues, and operational support information). Further, it will be clarified what in-progress M&O activities will be applicable during the Initial Transition Period and later, during the Contract term. During the Initial Transition Period, it is anticipated that M&O activities will be ongoing for incident management, defect management, batch management, security management (e.g., vulnerability patching, Plan of Action and Milestones (POA&M), and security testing), and usability/ Americans with Disabilities Act (ADA)/Section 508/ Web Content Accessibility Guidelines (WCAG) 2.1 accessibility testing and resolution.

The Contractor will complete the following deliverables during the Initial Transition Period. Note that while the State expects all of the activities below to be executed, at a minimum, the State would consider the Contractor's recommended movement of these activities throughout Initial Transition months if the Contractor can justify why that adjustment would be optimal for the State. The Contractor will invoice the State for the monthly cost only when the associated deliverables for that month are approved by the State. While the activities below are cited as deliverables, it is anticipated that the Contractor will undertake a number of sub-activities to accomplish the milestones implied by the deliverables listed.

Month	Deliverables
1	<ul style="list-style-type: none">Initial Transition Plan finalized, subject to State approval, including resources (quantity, type, and role) who will be available for all six (6) months of the Initial Transition Period. Indicate what the State and incumbent vendor would make available to the Contractor. Further, indicate the activities to be executed in each of the Initial Transition Period months.Creation of ongoing Transition meetings with the incumbent vendor, the State, and IOT.Confirmation of working read-only access to all aspects of the infrastructure and ALM, including State-issued credential process understood and realized for initial Contractor users.Clarification of points of contact for all aspects of Enterprise Decision Support Solution support that the State and its partners will use going forward.If applicable, work with the incumbent vendor on the timing of any change of employment of incumbent vendor staff.
2	<ul style="list-style-type: none">Documented Project Management Plan, in compliance with State and Federal requirements, subject to State approval.Documented Hybrid Agile SDLC, in compliance with State and Federal requirements, subject to State approval.SDLC Training Plan finalized for training the State and its partners who will be involved in requirements/design, testing, implementation, and other SDLC monitoring and/or supporting activities.
3	<ul style="list-style-type: none">Begin shadowing the incumbent vendor and State on all aspects of Project Management, SDLC, and other Enterprise Decision Support Solution supporting activities. This shadowing includes the monitoring of Helpdesk tickets.

	<ul style="list-style-type: none"> Evidence of participation in all training provided by the incumbent vendor in operations and procedures.
4	<ul style="list-style-type: none"> Confirmation of full administrative edit access for appropriate staff. Completion of all training provided by the incumbent vendor in operations and procedures.
5	<ul style="list-style-type: none"> Execution of training for State and Contractor staff on SDLC procedures. Completion of shadowing of the incumbent vendor staff in the promotion of releases to production, as well as maintenance of the production and non-production environments.
6	<ul style="list-style-type: none"> Standard monthly M&O fees begin Role of promotion of releases to production, as well as maintenance of the production and non-production environments, fully transferred to Contractor. Begin incumbent vendor “reverse shadowing” activities for supporting the Contractor and the State as the Contractor takes on additional enterprise data solution responsibilities.

6.2 Contract Turnover

6.2.1 EDW Turnover

The State seeks to ensure that program stakeholders experience no adverse impact from the transfer of the M&O and enhancement services to either the State or to a successor contractor (hereafter labeled the “successor contractor”) when the Contract is complete or terminated early. These services must be continued without interruption, and the Contractor must support the State and any successor contractor in transition efforts during the Contract term. In addition to the requirements in Attachment B Sample Contract - Clause 13 (Continuity of Services), the following end of Contract Turnover requirements apply. The dates and data requirements in the following sections do not limit or restrict the State's ability to require additional information from the Contractor or modify or shorten the turnover schedule as necessary.

Months from Contract End	Deliverables
12	<ul style="list-style-type: none"> State-approved Turnover Plan covering the possible turnover of the system or operational activities to either the State or a successor contractor. The Turnover Plan must be a comprehensive document detailing the proposed schedule and activities associated with the turnover tasks outlined in the sections below. The Turnover Plan shall describe the Contractor's approach and schedule for transfer of inventories, code/logic, training materials, SDLC artifacts, correspondence, documentation of outstanding issues, and operational support information to a repository of the State’s choosing. Further, the Turnover Plan must clarify what in-progress M&O and Enhancement activities will be applicable during the Turnover and how to transition those items to the State and the new Contract. Begin implementation of Turnover Plan.
9	<ul style="list-style-type: none"> The Contractor shall appoint, with State approval, a Turnover Manager who will manage and coordinate all Turnover activities. The Turnover Manager may be an individual already staffed on the project. The Contractor shall submit their Turnover Manager's qualifications as part of their Turnover Plan. The Contractor shall not reduce operational staffing levels during the turnover period without prior approval by the State. Store on the State’s selected repository: <ul style="list-style-type: none"> A copy of non-proprietary systems and database(s) used.

	<ul style="list-style-type: none"> ○ All solution and solution documentation (requirements, design, BPMs, user interface (UI) specs, form specs, technical specifications, technical configurations, SDLC artifacts, architecture documents, test artifacts, security artifacts, database information (conceptual, physical, and logical data models) and project management documentation. ○ Location of logs and infrastructure configuration details for load balancing used during the Contract to ensure compliance with operational requirements. ○ Other documentation including, but not limited to, user, provider, and operations manuals, and documentation of any interfaces developed to support business activities between the Contractor and other parties. ● Clarity must be provided on whether each artifact is historical or currently applicable. The Contractor must also provide for all artifacts an indication of whether they are currently in production, non-production, pending implementation, and/or no longer in production. This requirement applies for both the items within the scope of M&O as well as any in-progress SDLC artifacts and solution components. See the section entitled Ownership of Documents and Materials in RFP Attachment B (Sample Contract) for requirements regarding ownership of work products.
5	<ul style="list-style-type: none"> ● Begin training State staff or successor contractor staff, in the operations and procedures performed by Contractor staff. ● Provide read-only access to all aspects of the infrastructure and ALM tools. ● Begin working with the State and the successor contractor on major and minor releases. ● Support shadowing by the State and successor contractor for M&O and Enhancement activities.
2	<ul style="list-style-type: none"> ● Complete training of State staff or successor contractor staff. ● Transition of services to the State staff or successor contractor. ● Provide support as requested by the State in all aspects of the non-production and production releases at this time to ensure that no interruption in services occurs. This support will be invoiced according to the contractual hourly rates. ● Ensure that full administrative, edit access is provided to appropriate staff under the successor contractor. ● Be transitioned to read-only access in all aspects of the infrastructure and ALM.

As part of the Turnover responsibilities, the following shall apply:

- a. Provide to the State, or its agent, within fifteen (15) business days of request all updated data and reference files, scripts, and all other documentation and records as required by the State or its agent.
- b. Appoint, with State approval, a Turnover Manager with at least one (1) year of recent IT system experience to manage and coordinate all End of Contract Turnover activities. The Contractor shall submit their proposed individual's qualifications as part of their Turnover Plan. The Contractor shall not reduce operational staffing levels during the Turnover period without prior approval by the State.
- c. Do not in any way restrict or prevent Contractor staff from accepting employment with any successor contractor. The State will work with the incumbent and successor contractors on the timing of any transition of incumbent staff.

- d. If the optional Contract terms are exercised during Turnover activities, these activities shall shift to the next year. If the Turnover is halted due to the State exercising an optional term extension, invoices will not include Turnover Manager costs after the State's date to halt Turnover activities until those activities resume (with the State's approval) in the following year.
- e. Any Turnover costs shall be covered by the M&O fees.
- f. By the end date of the Contract, the Contractor must turn over all State property to the State, and Contractor's access to all State infrastructure and facilities will be terminated.

6.2.2 CAE Turnover

The State seeks to ensure that program stakeholders experience no adverse impact from the transfer of the M&O and CAE Projects services to either the State or to a successor contractor (hereafter labeled the "successor contractor") when the Contract is complete or terminated early. These services must be continued without interruption, and the Contractor must support the State and any successor contractor in transition efforts during the Contract term. In addition to the requirements in Attachment B Sample Contract - Clause 13 (Continuity of Services), the following end of Contract Turnover requirements apply. The dates and data requirements in the following sections do not limit or restrict the State's ability to require additional information from the Contractor or modify or shorten the turnover schedule as necessary.

Months from Contract End	Deliverables
6	<ul style="list-style-type: none"> State-approved Turnover Plan covering the possible turnover of the system or operational activities to either the State or a successor contractor. The Turnover Plan must be a comprehensive document detailing the proposed schedule and activities associated with the turnover tasks outlined in the sections below. The Turnover Plan shall describe the Contractor's approach and schedule for transfer of inventories, code/logic, training materials, SDLC artifacts, correspondence, documentation of outstanding issues, and operational support information to a repository of the State's choosing. Further, the Turnover Plan must clarify what in-progress M&O and CAE Projects activities will be applicable during the Turnover and how to transition those items to the State and the new Contract. Begin implementation of Turnover Plan.
5	<ul style="list-style-type: none"> The Contractor shall appoint, with State approval, a Turnover Manager who will manage and coordinate all Turnover activities. The Turnover Manager may be an individual already staffed on the project. The Contractor shall submit their Turnover Manager's qualifications as part of their Turnover Plan. The Contractor shall not reduce operational staffing levels during the turnover period without prior approval by the State. Store on the State's selected repository: <ul style="list-style-type: none"> A copy of non-proprietary systems and database(s) used. All solution and solution documentation (requirements, design, BPMs, user interface (UI) specs, form specs, technical specifications, technical configurations, SDLC artifacts, architecture documents, test artifacts, security artifacts, database information (conceptual, physical, and logical data models) and project management documentation. Location of logs and infrastructure configuration details for load balancing used during the Contract to ensure compliance with operational requirements.

	<ul style="list-style-type: none"> ○ Other documentation including, but not limited to, user, provider, and operations manuals, and documentation of any interfaces developed to support business activities between the Contractor and other parties. ● Clarity must be provided on whether each artifact is historical or currently applicable. The Contractor must also provide for all artifacts an indication of whether they are currently in production, non-production, pending implementation, and/or no longer in production. This requirement applies for both the items within the scope of M&O as well as any in-progress SDLC artifacts and solution components. See the section entitled Ownership of Documents and Materials in RFP Attachment B (Sample Contract) for requirements regarding ownership of work products.
4	<ul style="list-style-type: none"> ● Begin training State staff or successor contractor staff, in the operations and procedures performed by Contractor staff. ● Provide read-only access to all aspects of the infrastructure and ALM tools. ● Begin working with the State and the successor contractor on major and minor releases. ● Support shadowing by the State and successor contractor for M&O and CAE Projects activities.
2	<ul style="list-style-type: none"> ● Complete training of State staff or successor contractor staff. ● Transition of services to the State staff or successor contractor. ● Provide support as requested by the State in all aspects of the non-production and production releases at this time to ensure that no interruption in services occurs. This support will be invoiced according to the contractual hourly rates. ● Ensure that full administrative, edit access is provided to appropriate staff under the successor contractor. ● Be transitioned to read-only access in all aspects of the infrastructure and ALM.

As part of the Turnover responsibilities, the following shall apply:

- a. Provide to the State, or its agent, within fifteen (15) business days of request all updated data and reference files, scripts, and all other documentation and records as required by the State or its agent.
- b. Appoint, with State approval, a Turnover Manager with at least one (1) year of recent IT system experience to manage and coordinate all End of Contract Turnover activities. The Contractor shall submit their proposed individual's qualifications as part of their Turnover Plan. The Contractor shall not reduce operational staffing levels during the Turnover period without prior approval by the State.
- c. Do not in any way restrict or prevent Contractor staff from accepting employment with any successor contractor. The State will work with the incumbent and successor contractors on the timing of any transition of incumbent staff.
- d. If the optional Contract terms are exercised during Turnover activities, these activities shall shift to the next year. If the Turnover is halted due to the State exercising an optional term extension, invoices will not include Turnover Manager costs after the State's date to halt Turnover activities until those activities resume (with the State's approval) in the following year.
- e. Any Turnover costs shall be covered by the M&O fees.
- f. By the end date of the Contract, the Contractor must turn over all State property to the State, and Contractor's access to all State infrastructure and facilities will be terminated.

7 Staffing

7.1 Staffing Requirements

7.1.1 General Staffing Requirements

As a part of the staffing responsibilities, the Contractor shall:

- a. Provide qualified staff to deliver on the scope of services described in this Scope of Work while not sacrificing quality of service, including compliance with service level agreements (SLAs).
- b. Develop and adhere to an approved Staffing Plan that addresses their resource plans. Specifically, the Staffing Plan shall include the following:
 - Organizational chart
 - Number, type, and categories of staff proposed
 - Staff qualifications
 - Staff work location
 - Ongoing training requirements
 - Plan for new or reassigned staff that includes:
 - Recruitment of new staff
 - Staff transition
 - Training
 - Staff retention
- c. Update the Staffing Plan monthly to reflect the latest changes to staff assignments. Update the Staffing Plan annually for approval by the State.
- d. Perform criminal background checks for Contractor staff at no additional cost to the State. Submit for review results of criminal background checks for Contractor staff to the State. Note: for any Contractor staff that will have authorized access to Federal Tax Information (from DCS), IRS Publication 1075 has specific background check requirements that must be followed.
- e. Identify and immediately dismiss any employee with a background unacceptable to the State.
- f. Identify, report, and resolve performance issues for its entire project staff including but not limited to employees and subcontractors.
- g. Replace a Contractor staff member within thirty (30) days of departure, unless otherwise allowed by the State.
- h. Remove a Contractor staff member within two (2) weeks of the request for removal, or sooner if requested by the State, and be replaced within thirty (30) calendar days after the position is vacant, unless a longer period is approved by the State. During the Contract term, the State reserves the right to require replacement of any Contractor or subcontractor employee found unacceptable to the State. Reasons for unacceptability include, but are not limited to, the inability of the individual to carry out work assignments or unsatisfactory job performance as determined by the State.
- i. Endeavor to have low turnover for their teams to build up program knowledge that will benefit the State. As such, the Contractor will provide as part of their staffing plan an explanation as to how they plan to retain high-performing staff across all positions, including both key and non-key personnel.
- j. Complete Attachment M (State's Resource Usage Matrix) if asked for certain Change Requests to clearly detail the staffing resource distribution and State resource requests to execute the requirements.
- k. Contractor staff are expected to be available during the business hours established by the State and adhere to the State calendar and recognition of State holidays. In the event there is a conflict in recognized holidays between the Contractor and the State where State offices are closed, the Contractor shall deploy their team remotely to meet any emergent needs and execute the standard M&O operations.

1. In the event of a system outage or emergent needs that require urgent response, the Contractor shall appropriately notify the appropriate State contact in alignment with the relevant SLAs detailed in Section 8.

7.1.2 EDW Staffing

The EDW Contractor is expected to use individual staff to cover multiple M&O services and enhancement efforts to the greatest extent possible, while not sacrificing quality of service, including SLAs. These services are not anticipated to be provided in “silos”, and efficiencies in staffing are expected. For informational purposes, the current EDW staffing levels for the incumbent vendors are as follows:

- **Incumbent OMPP DW vendor:** 21.75 FTEs working exclusively on M&O, with 5 additional FTEs split their time between M&O and Enhancements, spending the equivalent of 3.36 FTEs on M&O. Combined, this totals 25.11 FTEs working on M&O. The incumbent OMPP DW vendor M&O makeup is as follows:
 - 0.84 Project Executives
 - 0.84 Project Managers
 - 1 System Administrator
 - 1 Reporting Manager
 - 1 Platform Administrator
 - 0.5 Transition Managers
 - 1.22 Developers
 - 1 Federal Reporting Manager
 - 1.75 IMAR Developers
 - 1 Quality Coordinator
 - 1 Data Architect
 - 1 Database Administrator
 - 1 Cognos Administrator
 - 0.74 Business Analysts
 - 0.61 Cognos Developer
 - 0.61 Cognos/Tableau Developer
 - 1 Data Analyst
 - 2 Embedded Business Analysts
 - 2 Embedded Data Analysts
 - 1 Interface/Scrum Project Manager
 - 1 Help Desk Coordinator
 - 1 Documentation Specialist
 - 1 Training Specialist
 - 1 Symmetry Analyst

Further, given the level of past enhancements work, there are an additional 9 FTEs who work solely on Enhancements.

- **Incumbent SSDW:** 21 FTEs, not including enhancements staff. The incumbent SSDW vendor M&O makeup is as follows:
 - 1 Project Executive
 - 1 Project Manager
 - 1 Reporting Manager
 - 3 Business Analysts
 - 1 Data Analyst
 - 1 Lead Business Analyst
 - 1 Database Administrator

- 1 Lead Data Architect
- 1 Systems Operator
- 9 ETL Developer
- 1 Cognos Developer

Please note Azure skillset is needed to support DWD and 1095B projects which are currently handled by enhancements staff (not part of M&O).

7.1.3 CAE Staffing

CAE Team Composition

The CAE Contractor team will comprise of the following FTE positions that meet the listed minimum years of experience in these roles unless otherwise approved by the State. The CAE Contractor shall provide the State the final candidate resumes and qualifications for review and approval prior to onboarding the individual onto the team. Please see Section 7.4 for the staff location expectations for the members of each team.

RRT team: 8.5 FTEs

Position	FTEs	Minimum Years of Experience in This Role
Project Manager	1	5
Business Analyst	1	2
Data Analyst	1	2
Data Scientist	1	5
Data Engineers	2.5	2
Business Intelligence Developer	1	3
Policy Analyst	1	5

CAE Infrastructure M&O team: 5 FTEs

Position	FTEs	Minimum Years of Experience in This Role
Lead Architect	1	5
Senior DevOps Engineer (M&O of all infrastructure)	1	5
Data Engineer	1	2
Data Scientist	1	5
Software Developer	1	2

In addition, the CAE Contractor's Project Executive will be considered as part of the M&O team for the purposes of calculating the M&O monthly rate in Attachment D.2.

7.2 Vital Personnel

Vital Personnel are Contractor staff members deemed by the State as being both instrumental and essential to the Contractor's satisfactory performance of all Contract requirements. The following general provisions apply to Vital Personnel:

- a. The Project Manager and Reports Manager positions shall be dedicated full time to the Contract.

- b. Each Vital Personnel position must be staffed by one and only one specific individual at any given point in time. That is, it is not permissible to have multiple Contractor staff perform one Vital Personnel position's responsibilities unless approved by the State.
- c. If the Contractor is awarded more than one Scope:
 - a. The same individual can serve as the same Project Executive but must meet the requirements for both Scopes.
 - b. The remaining Vital Personnel must not be the same individuals across multiple scopes.
- d. Vital Personnel are subject to approval by the State. As part of their Project Plan, the Contractor shall have named backups to Vital Personnel in the event of a prolonged illness or unexpected absence/departure who can take over the vacated role within two (2) weeks of the Vital Personnel's absence or departure. The Contractor shall notify the State immediately of any Vital Personnel transitions and the proposed approach to fill the position quickly and without disruption to service delivery. The Contractor shall receive State approval before replacing any Vital Personnel or back up Vital Personnel. The Contractor may not make any temporary or permanent changes to Vital Personnel or back up Vital Personnel without at least four (4) weeks prior notice to the State and the State's prior written approval unless the replacement is due to termination, death, or resignation. The Contractor shall replace Vital Personnel with personnel of equal or greater ability and qualifications, subject to approval by the State, regardless of the reason for replacement.
- e. The Vital Personnel positions and responsibilities are listed below. The general responsibilities and minimum qualifications cover the State's minimum expectations. To accommodate differences in organizational structures or if a Respondent believes that an alternative organizational design could improve service levels or decrease costs, the State will consider suggestions for alternative alignment of duties. Changes to the positions and responsibilities will only be allowed with written permission from the State.

Project Executive (Applies to all Scopes). Responsibilities: Ensures Contract compliance and Contract quality assurance. Oversees overall project planning and execution.

Minimum Qualifications:

- At least two (2) years of executive experience with enterprise application oversight
- At least three (3) years of experience on public-sector systems projects. If proposing for EDW: at least one (1) year of experience with healthcare, and at least one (1) year of experience with social services. If proposing for the CAE Scope: at least one (1) year of experience with Azure cloud services.
- At least two (2) years of experience with data warehouse projects
- At least two (2) years of experience with system implementation, maintenance, and operations
- Strong written and communication skills

Preferred Qualifications:

- **EDW:** Healthcare experience
- **CAE Scope:** Healthcare and social services experience

Project Manager (Applies to all Scopes). Responsibilities: Performs Contract administration and project management. Manages the M&O services team and ensures the service level agreements are sustained. Communicates with the State through formal correspondence. Performs quality assurance. Escalate issues timely within the Contractor organization.

Minimum Qualifications:

- Five (5) years of successful (on time, within budget) project management experience for government or private-sector data warehouses projects of this size and complexity

- At least two (2) years of experience managing the M&O and enhancements of data warehouse systems of a similar size and complexity to the system
- Expertise in the principles of the Project Management Body of Knowledge (PMBOK®)
- Experience in Agile and Scrum SDLC methodologies
- Bachelor's degree
- Effective communication and writing skills

Preferred Qualifications:

- PMP Certification
- Experience in Relational Database Management Systems and structured query tools
- EDW:
 - Previous experience with Medicaid, MMIS development, management of projects that required collaboration with other vendors, and management of projects of similar size and complexity
 - Previous experience with management of social services and healthcare projects that required collaboration with other vendors and management of projects of similar size and complexity
- CAE Scope: Previous experience with social services and healthcare projects experience and management of projects of similar size and complexity

Reporting Manager (Applies to all Scopes). Responsibilities: Provide Federal and State Reporting Expertise. Certify Federal Reports. Review for quality assurance all new reports. Effectively use resources to generate a variety of reports, listings, and quality control metrics along with ad hoc reports. Manage and promulgate information reports and statistics policy and procedures. Project management scheduling and provision of resources. Communicate with the State through formal correspondence. Perform quality assurance. Plan and direct work tasks. Work in conjunction with other project components to define data, storage, and retrieval requirements.

Minimum Qualifications:

- Five (5) years of successful state and Federal reporting experience for government or private-sector data warehouses projects of this size and complexity
- Experience in Agile and Scrum SDLC methodologies
- Bachelor's degree
- Effective communication and writing skills

Preferred Qualifications:

- EDW:
 - Previous experience with Medicaid, MMIS development, management of projects that required collaboration with other vendors, and management of projects of similar size and complexity (strongly preferred)
 - Previous experience with management of social services, eligibility determination processes experience, and healthcare projects that required collaboration with other vendors and management of projects of similar size and complexity (strongly preferred)
- CAE Scope: Previous experience with management of an Azure cloud-based enterprise decision support solution, and social services and healthcare projects experience and management of projects of similar size and complexity (strongly preferred)

System Administrator (EDW). Responsibilities: Perform system administration. Ensure compliance with all system specifications. Project management scheduling and provision of resources. Communicate with the State through formal correspondence. Perform quality assurance. Plan and direct Enterprise Decision Support Solution work tasks. Work in conjunction with other project components to define data, storage, and retrieval requirements.

Minimum Qualifications:

- Five (5) years of successful system administration experience for government or private-sector data warehouses projects of this size and complexity
- Healthcare projects experience
- Experience in Agile and Scrum SDLC methodologies
- Bachelor's degree
- Effective communication and writing skills

Preferred Qualifications:

- Previous experience with Medicaid, MMIS development, management of projects that required collaboration with other vendors, and management of projects of similar size and complexity

Platform Administrator (EDW). Responsibilities: Perform platform administration. Ensure compliance with all technical specifications. Project management scheduling and provision of resources. Communicate with the State through formal correspondence. Perform quality assurance. Plan and direct work tasks. Work in conjunction with other project components to define data, storage, and retrieval requirements.

Minimum Qualifications:

- Five (5) years of successful database administration experience for government or private sector health care data warehouses projects of this size and complexity
- Experience in Agile and Scrum SDLC methodologies
- Bachelor's degree
- Effective communication and writing skills

Preferred Qualifications:

- At least two (2) years of prior experience working with the Teradata platform
- Previous experience with Medicaid, MMIS development, social services, management of projects that required collaboration with other vendors, and management of projects of similar size and complexity desirable

Lead Architect (Applies to all Scopes). Responsibilities: Responsible for the strategic design and development of data architecture that governs how data is collected, stored, processed, integrated, and used. Optimize databases, develop ETL solutions, and manage automatized data flow. Maintain data catalogues, design data models to empower product and analytics, evaluate various internal and external sources, and ensure data quality.

Minimum Qualifications:

- Five (5) years of successful ETL and enterprise data warehouse technical development experience for government or private sector health care data warehouses projects of this size and complexity
- Two (2) years of successful data modeling of data warehouse systems of a similar size and complexity to the EDSS system
- Experience in Agile and Scrum SDLC methodologies
- Bachelor's degree
- Effective communication and writing skills

Preferred Qualifications:

- At least two (2) years of prior experience working with the Teradata platform

- Management of projects that required collaboration with other vendors, and management of projects of similar size and complexity desirable
- EDW:
 - Previous experience with Medicaid and MMIS development
 - Previous experience with social services
- CAE Scope: Previous experience with management of an Azure cloud-based enterprise decision support solution, and social services and healthcare projects experience and management of projects of similar size and complexity

Senior DevOps Engineer (Applies to CAE Scope). Responsibilities: The Senior DevOps Engineer is responsible for the design, creation, deployment, integration, and security of the organization's cloud data infrastructure and computing. A Senior DevOps engineer working with the organization is expected to be an expert in Azure DevOps CI/CD, Kubernetes, Docker, Terraform, Azure Cloud, and networking and security integration and best practices. The Senior DevOps Engineer is also expected to be the lead technical resource for cloud-based systems design and implementation, including cloud-to-cloud and cloud-to-on-premises solutions. Furthermore, this engineer will need to have a full understanding of the end-to-end process of resources created and be able to provide leadership with curated documentation of implemented solutions.

Minimum Qualifications:

- Minimum 8+ years of experience in relevant field OR bachelor's degree and 5+ years of experience
- Proficiency in Terraform for Azure
- Experience developing Azure DevOps YAML pipelines
- Strong working knowledge of Kubernetes infrastructure
- Strong experience in implementing and managing containerized applications using Kubernetes and Docker
- In-depth knowledge of Azure cloud infrastructure
- Excellent problem-solving and troubleshooting skills to handle complex issues effectively.
- Articulate and detail-oriented with exceptional communication skills

7.3 Personnel Background Checks and Requirements

Background Check Standards. The Contractor shall complete criminal background checks, at no cost to the State, and provide the results to the State for review.

The State reserves the right to consider the arrest and conviction record of any proposed Contractor staff as grounds to disapprove of their selection for a role related to this project. Arrests and convictions discovered during the background check process that have not been sealed or expunged by judicial action may be cause for the State to exercise any available remedies or corrective actions under the terms of the Contract. Any applicant that has applied for a position that has been found to have either been coded in the State personnel system as ineligible for employment due to a previous code of "Not Eligible for Rehire" (NEFR) as a former employee of the State of Indiana or any code that denotes removal from a previous contract assignment due to performance/disciplinary concerns, falsification of a State of Indiana application, or has been found to have had convictions that are deemed to be related to the position applied for, will be removed from the assignment at the request and discretion of the State as well as from consideration from the position applied for.

The State reserves the right to consider any conviction, including but not limited to the falsification of documents, forgery, fraud, check deception, or theft related to the work completed within the State. This list is not all inclusive and the State reserves the right to consider other factors, including but not limited to recidivism of the applicant.

Background Check Documentation.

- a. As a condition of employment and for purposes of determining a person's qualifications for employment, the Contractor shall, at their own expense: undertake a criminal history record background check for all Contractor and subcontractor personnel assigned to work on the Contract. For all Contractor and subcontractor personnel assigned to work on the Contract on Day 1 of the Contract, the fingerprints required to complete the criminal history record background check shall be submitted by the 90th day of the Contract.
- b. All Contractor staff must be in good standing with the State and not fall in the "Not Eligible for Rehire" (NEFR) category or in any comparable category code given to Contractor staff which relates to poor work performance, disciplinary concerns or violation of the State standard policies or practices. Contractor is charged with verification of eligibility of rehire status with the State of Indiana prior to assignment to the State.
- c. The Contractor shall submit to the Indiana State Police Bureau of Identification (SBI) an "application" fingerprint card, a request for criminal history record information form, and the appropriate fee for all Contractor and subcontractor personnel it may assign to work on the Contract.
- d. The Contractor shall not permit any newly hired, re-hired, or transferred personnel to work on this Contract until the SBI has furnished the results of the criminal history record background check to the Contractor and the Contractor has verified that the resulting report has no convictions that represent a nexus to the duties assigned to Contractor staff.
- e. The criminal background check shall encompass the following areas:
 - Convictions of any State or Federal crimes shall be considered if they are deemed to demonstrate a nexus to the work duties assigned to the Contractor staff
 - Referenced under: IC 10-13-3-33.5; IC 4-13-2-14.7; IC 4-15-22-10; IC 4-15-22-30; IC 12-24-3-2; IC 22-5-1.7; IRS Pub. 1075; HEA1079-2017; Arrests & Convictions Policy
 - Exclusions by the US Office of Inspector General
- f. The Contractor shall be required to retain the results of an individual's criminal history background check as long as that person is assigned to the Contract. If a currently assigned individual is promoted to a role having increased responsibility, the Contractor shall, at its own expense, perform a new background check. The results of the criminal history background check shall be made available to the State upon request. If a conviction has been found in the subsequent background check to be related to the new role of increased responsibility, then the Contractor employee shall be removed from the assignment.
- g. If the Contractor has had a State Police background, criminal, and fingerprinting check performed for the employee that meets the exact criteria specified above, the check may be accepted by the State at the State's sole discretion. Any such reference checks must have been done within six months of the Contract start date.
- h. The Contractor is fully responsible for the conduct of its employees and its subcontractor's employees. If there is any need for intervention by State personnel because of behavior, security breaches, or general misconduct, the Contractor shall immediately remove the employee from the Contract work and replace this employee on a permanent basis. Further occurrences may result in the termination of the Contract.
- i. Contractor staff applying for employment with the State who have been found to have not successfully completed the background check due to convictions determined to have a nexus to the applied for position or due to the confirmed falsification of the application, shall be removed from the assignment immediately.

- j. Civil or administrative judgments that may adversely affect the employee's integrity (a professional license, etc.) may cause, at the discretion of the Contractor and/or the State, removal from the assignment.
- k. Contractor shall require that its employees are responsible for reporting to their supervisor any arrests or convictions within five (5) calendar days from the date of the arrest or conviction. Contractor shall ensure the enforcement and administration of this provision and shall notify the State, via email within two (2) business days of being made aware of such arrest(s) and/or conviction(s).
- l. The Contractor staff may not work in the direct line of supervision of a relative who is employed by the State. "Relative" means any of the following: a spouse, parent or stepparent, child or stepchild, brother, sister, stepbrother or stepsister, niece or nephew, aunt or uncle, and daughter-in-law or son-in-law. An adopted child of an individual is treated the same as a natural child of the individual. "Brother" and "sister" include a brother or sister by half blood. Contractor will require Contractor staff to report to Contractor if they work in the direct line of supervision of a relative who is employed by the State.

7.4 Facilities/Working Location

All Contractor project staff shall work within the continental U.S. (per CMS requirements and FNS security requirements), unless otherwise approved by the State. At no time shall Contractor project staff work from outside of the United States on any Contract-related work. Per MARS-E, SA-9(5), applicable to the resulting agreement, it is required that the State obtains the authorization of the CMS CIO for the outsourcing of services outside the continental US with sufficient justification and compensation for risk, based on the US-foreign country reciprocal laws, the foreign country's laws itself, and concerns regarding the transmission of Federal and/or FSSA-owned data through foreign Internet Providers' infrastructure. See <https://www.cms.gov/files/document/mars-e-v2-2-vol-1final-signed08032021-1.pdf> for details.

✹ EDW Contractor Staff:

- The Contractor's Vital Personnel shall work onsite at FSSA facilities for two (2) to three (3) days a week (number of days depends on the specific position and is determined by the State). Exceptions must receive preapproval from the State.
- All staff must be able to attend in-person meetings with three (3) business days' notice.
- A minimum of four staffing resources (Business Analysts and Cognos Developers) will be collocated full time with the D&A team to provide direct support for their OMPP data warehouse needs. Currently the BI tool is Cognos but if the State switches to another tool, the EDW Contractor shall adjust their BI staff to provide replacement staff with expertise in the new BI tool.
- The State reserves the right to require staff to be located and work in the Greater Indianapolis area or FSSA offices at no additional cost during the Contract term.

● CAE Contractor Staff:

- The CAE M&O staff can work remotely from the continental U.S.
- The RRT staff shall work onsite at FSSA facilities for two (2) to three (3) days a week (number of days depends on the specific position and is determined by the State). Exceptions must receive preapproval from the State.
- All staff must be able to attend in-person meetings with three (3) business days' notice.
- The State reserves the right to require Contractor staff to be located and work in the Greater Indianapolis area or FSSA offices at no additional cost during the Contract term.

7.5 Subcontractors

The Contractor shall be fully responsible for managing all subcontractors used to execute the services of the Contract. The subcontractor(s)'s compliance with all requirements, terms, and conditions shall be the responsibility of the Contractor.

8 Service Level Agreements

8.1 Service Levels Overview

It is the State's primary goal to ensure that the Contractor is accountable for delivering services as defined and agreed to in the Contract. This includes, but is not limited to, performing all items described in the Scope of Work, completing all deliverables in a timely manner described in the Scope of Work, and generally performing to the satisfaction of the State. Failure to perform in a satisfactory manner may result in corrective actions and the performance withholds described below.

Failure by the Contractor to meet Service Level Agreements (SLAs) may cause the State to incur economic damages and losses, including but not limited to:

- a. Federal penalties
- b. Lost Federal match funding if certain implementation deadlines are missed
- c. Staff productivity losses due to downtime/poor response times
- d. Costs incurred due to any overtime necessitated
- e. Applicant time lost if interface is partially or completely down
- f. Impact on other State systems due to downtime or other processing issues
- g. Negative project impact and/or risk of negative audit findings due to lack of proper documentation or improper procedures
- h. Impact to timeline/budget due to unavailability of Vital Personnel resources and/or adequate resources on site

As such, compensation to the Contractor will be tied to the SLAs below. The Contractor will provide periodic (monthly and quarterly) updates on their performance in relation to the SLAs. FSSA will hold each Contractor accountable to these SLAs and failure to meet SLAs on a consistent basis could have a significant impact on compensation levels to the Contractor. Please see Performance-Based Withholds in Sections 8.2.2 and 8.3.2)

If the Contractor fails to meet four (4) or more SLAs in any given month, the State shall permanently retain the 15% withholding for that month's invoice.

The State may also provide the Contractor with a written notice of non-compliance and may require any of the corrective actions or remedies described in the Contract.

8.2 Maintenance and Operations (M&O) Service Levels

The following are service levels for the M&O services. All service levels will be reported monthly to the State in a written report. Validation of the SLAs will be conducted by the State, and the Contractor must provide any supporting documentation requested as part of validation activities. The Contractor shall provide full transparency via designated ALM or repository for the State staff to access all materials and work products associated with the Contract scope, including but not limited to system monitoring reports, staff time reports, staff status reports, staff calendars, agendas, meeting notes, and charters.

8.2.1 M&O Thresholds for Compliance

The table below provides the SLA thresholds that define compliance and is the basis for determination of loss of the performance-based withhold of the monthly M&O fee. Thresholds for compliance can be modified for specific instances when mutually agreed upon by both parties.

SLA #	Key Service Level Agreement	Threshold for Compliance (Reported Monthly)	Scope
1	<p>System Uptime. Maintain uptime (total time minus scheduled maintenance/ unscheduled outage time) of system as designed against a 24-hours per day, 7 days per week operating schedule, excluding planned outages. This includes all system functions under Contractor control, either directly or through subcontractor(s). To be measured on a monthly basis</p> <p>Note: Any planned outages should be either for a standing window (such as 2:00 A.M. to 4 A.M. on Sundays) or require written pre-approval from the State.</p>	99.99% uptime other than scheduled maintenance time	All scopes
2	<p>Response Timeliness. Provide response time compliance for user requests, incidents, defects, and bugs based on Severity Code timeliness standards outlined in Section 3.5.1.</p>	<p>98% of total measured response times are met</p> <p>For example, if there are 25 items opened in a month, that equates to 100 response time measurements (25 items X 4 response stages). The Contractor must meet the response times for at least 98% of these measurements in the month.</p>	All scopes
3	<p>Resolution Timeliness. Resolve opened incidents in the required timeframes in Section 3.5.1</p>	99% of opened incidents resolved on time	All scopes
4	<p>Extracts Accuracy/Timeliness. Conduct inbound and outbound file exchange in accordance with approved requirements accurately and on time, to a mutually agreed upon completion date</p>	<p>100% of total measured inbound and outbound exchanges reports are accurate and completed on time*</p> <p>Any detected inaccuracies will be corrected on a schedule based on critical nature of the deviation as determined by the State</p>	All scopes

SLA #	Key Service Level Agreement	Threshold for Compliance (Reported Monthly)	Scope
5	<p>Recurring Reports Accuracy/Timeliness. Produce recurring reports in accordance with approved requirements accurately and on time, to a mutually agreed upon completion date</p> <p>(Any unapproved deviation from timeliness and accuracy standards will be corrected on a schedule based on critical nature of the deviation as determined by the State)</p>	100% of reports are accurate and delivered on time*	All scopes
6	<p>Ad Hoc Reports Accuracy/Timeliness. Produce accurate ad hoc reports in accordance with timeline associated with the State's assigned level of urgency and mutually agreed upon completion date – see Section 3.2.3.5.2</p> <p>(Any unapproved deviation from timeliness and accuracy standards will be corrected on a schedule based on critical nature of the deviation as determined by the State)</p>	100% of reports are accurate and delivered on time*	All scopes
7	<p>Work Product Compliance. Ensure work products comply with all standards identified in the contract. (Any unapproved deviation from standards will be corrected within ten (10) calendar days of detection by vendor or State)</p>	100% compliance, unless otherwise approved by the State	All scopes
8	<p>Security Incident Notification Timeliness. Security Incidents shall be made known to the FSSA Privacy & Security Office and the Data & Analytics team within fifteen (15) minutes of when Contractor discovered the Security Incident.</p> <p>Please see Clause 12 of Attachment B for the definitions of "Security Incident", "discovered", and "discovery".</p>	100% compliance, as measured by time elapsed from Security Incident discovery	All scopes

SLA #	Key Service Level Agreement	Threshold for Compliance (Reported Monthly)	Scope
9	Privacy and Security Compliance. Compliant with key federal laws and regulations (e.g., ADA, OSHA, Medicaid, SNAP, TANF, IRS, SSA, etc.), Indiana Law, MARS-E, and HIPAA requirements for privacy and security in all activities. Please see Clause 12 of Attachment B for the definition of “breach” and additional relevant information.	No incidents of non-compliance. (Any incidents of non-compliance discovered by or reported to the State shall be cured by the Contractor within 30 calendar days upon notice by the State; satisfactory failure to cure would subject the Contractor to the Withhold established below and repeated failures to cure would be cause for termination of the agreement.)	All scopes
10	Staffing Standards Compliance: Compliance with staffing resource standards, replacement standards, departure notification standards, and removal standards per staffing role-level, as detailed in Section 7.	100% compliance, unless otherwise approved by the State	All scopes

* If an error is identified by a State or representative on a data extract or report, and it is confirmed by another State or another representative as an avoidable error, then that error will be sent to the D&A team and logged as an inaccuracy for the month.

8.2.2 M&O Performance Based Withhold Amount and Conditions

During each month of the contract, the State will withhold 10% of that month’s M&O fees as listed in the Contract. The State will evaluate service level noncompliance monthly. If two (2) or more service levels are not reached for any given month, the performance withhold amount for that month will be at risk for forfeit unless all metrics are met in the next two consecutive months. At the State’s request, each Contractor shall perform a Corrective Action Plan (CAP) that outlines how the Contractor plans to correct poor performance.

If two or more instances of failure to meet an SLA (as detailed in above) are reported in two (2) consecutive months, the Contractor must prepare and submit a root-cause analysis and remediation plan to the State, the form and scope of which shall be agreed to by the parties.

8.3 System Enhancements and CAE Project Service Levels

8.3.1 Enhancements and CAE Projects Thresholds for Compliance

The following are service levels for Enhancements and CAE Projects. These will be reported monthly to the State in a written report.

SLA#	Key Service Level Agreement	SLA Threshold for Compliance
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24	Enhancement/CAE Project Estimates Timeliness. Provide completed enhancement/CAE Project Change Request (including all required elements such as cost and time estimates) within one (1) week from request submission	95% compliance
25	Enhancement /CAE Project Completion Timeliness. Complete requested enhancement /CAE Project within estimated time frames approved by the State	100% compliance
26	Defect/Bug Correction Timeliness. Correct defects and bugs found during User Acceptance Testing per the timeframes agreed upon with the State at the time the defects/bugs are reported. The Contractor shall receive State approval on which bugs are allowed to be uncorrected before production.	Correct 100% of defects (Severity Level 1 and 2) and 95% of bugs (Severity Level 3 and 4) per the timeframes agreed upon with the State
27	Budget Adherence. The Contractor shall complete requested enhancements /CAE Project within the State-approved budget. The Contractor shall be responsible for any expenditures over the State-approved budget if no changes in scope were made.	100% compliance

8.3.2 Enhancements /CAE Project Performance-Based Withholds

- a. During each month of the contract, the State shall withhold 15% of the Contractor's monthly invoiced fees pending verification of the Contractor's performance against the performance metrics described in Section 8.3.1. The State will evaluate enhancement /CAE Project -related service levels monthly for noncompliance. If two (2) or more service levels as defined in Section 8.3.1 are not reached for any given month, the performance withhold amount for that month will be at risk for forfeit unless all metrics are met in the next two consecutive months.
- b. If two (2) or more instances of failure to meet an SLA (as detailed in above) are reported in two (2) consecutive months, Contractor must prepare and submit a root-cause analysis and remediation plan to the State, the form and scope of which shall be agreed to by the parties.

8.4 Other Service Levels

The service levels in the table below are established in the contract but are not included in the determination of whether the 10% performance withhold mentioned above will be released for any given month, except for those instances in which an SLA is not met in a recurrent manner (a recurrent manner is one whereby an issue occurs in two or more consecutive months). Instead, in cases of non-compliance with regards to the service levels in the table below, the Contractor shall perform a Corrective Action Plan (CAP) at the State's request that outlines how the Contractor plans to correct poor performance. The State may also require the Contractor to prepare and submit a root-cause analysis and remediation plan to the State, the form and scope of which shall be agreed to by the parties. If there are multiple instances of non-compliance, the State reserves the right to pursue additional corrective actions, such as a corrective action plan (Section 8.5) and corrective action plan withholds (Section 8.5.1), or Contract termination.

SLA#	Key Service Level Agreement	Threshold for Compliance
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11	Forward all communications received that should be handled by State staff within one (1) business day of receipt	100% compliance, unless otherwise approved by the State
12	Notify the sender that communications have been forwarded to the State within one (1) business day of receipt	100% compliance, unless otherwise approved by the State
13	Propose a replacement of Vital Personnel positions within 30 (thirty) calendar days of vacancy	100% compliance, unless otherwise approved by the State
14	Provide monthly management reports within ten (10) calendar days of the end of the month being reported	100% compliance, unless otherwise approved by the State
15	Submit status meeting agenda at least two (2) business day prior to meeting	95% compliance, unless otherwise approved by the State
16	Provide status meeting minutes in specified format within two (2) business days of the meeting	95% compliance, unless otherwise approved by the State
17	Provide Service Level Agreement status reports in specified format at least one (1) business day prior to each meeting	100% compliance, unless otherwise approved by the State
18	Provide annual summary reports in State-specified format, per annual reports described in Section 5.6.1	100% compliance, unless otherwise approved by the State
19	Notify State of issues with reports within two (2) business days of detection	100% compliance
20	Produce accurate documentation within ten (10) calendar days of required change that involves the change management process described in Section 5.4	100% compliance, unless otherwise approved by the State
21	Respond to requests for additional information regarding reports according to deadlines agreed upon by Contractor and the State	100% compliance, unless otherwise approved by the State
22	Notify the State of any issues with the User Interface within one (1) hour of detection of the issue	100% compliance
23	Resolve a minimum percentage of defects by the initial fix	Threshold will be established with each Contractor during contract negotiations

8.5 Corrective Action Plans

The State will review the Contractor's activities, performance measures and deliverables, and may engage their OV&V agent to assist with these reviews. The Contractor shall, upon State direction, furnish copies of deliverables and their Monthly Performance Report.

The State can trigger a CAP if the State determines that the Contractor is not performing to the satisfaction of the State, has missed Service Levels and/or KPIs detailed in Section 8 of this Scope of Work, or has not completed one or more deliverables in a satisfactory or timely manner according to the agreed upon Performance Metrics. All CAPs must be submitted to the State within fifteen (15) calendar days following the documentation of failure to meet expectations. At a minimum, the CAP shall address the causes of the deficiency, the impacts, and the measures being taken and/or recommended to remedy the deficiency and indicate whether the solution is permanent or temporary. It must also include a schedule showing when the deficiency will be remedied, and for when the permanent solution will be implemented, if appropriate. The nature of the corrective action(s) will depend upon the nature, severity and duration of the deficiency, and repeated nature of the non-compliance. The State shall review and make reasonable efforts to approve the CAP within ten (10) calendar days of the CAP being received.

Verification of Contractor's success or failure to achieve Performance Metrics may be performed by the State or a designated State contractor. The Contractor will participate in FSSA's quality measurement and improvement activities as directed by FSSA.

8.5.1 Corrective Action Plan Withholds

Beginning the month in which a formal CAP is required per the Corrective Action paragraph above, the State may withhold up to 10% of total fixed fee components of the invoice and all subsequent billing until the CAP is completed and the proposed remedy is implemented. When the CAP is completed, and the proposed remedy is implemented, all monies withheld shall be returned to the Contractor within thirty (30) calendar days. Should the CAP not be submitted as required, or should the remedy not be implemented within the timeframe specified by the CAP, the withheld monies may be forfeited.