Stage 2 Alternative Analysis

California Department of Technology, SIMM 19B.2 (Rev. 2.5, July/2021)

2.1 General Information

Agency or State Entity Name: Department of Food and Agriculture

If agency/entity not in list then enter here. Click or tap here to enter text.

Organization Code: 8570

Proposal Name: Emerging Threats 2 (ET 2)

Department of Technology Project Number (0000-000): 8570-089

2.2 Preliminary Submittal Information

Removed. Stage 2 Preliminary Assessment information moved to Stage 1 Business Analysis, Section 1.10.

2.3 Stage 2 Preliminary Assessment

Removed. Stage 2 Preliminary Assessment information moved to Stage 1 Business Analysis, Section 1.10.

2.4 Submittal Information

Contact Information

Contact First Name: Robert

Contact Last Name: Peterson

Contact Email: Robert.Peterson@cdfa.ca.gov

Contact Phone: 916-710-1983

Submission Date: 9/1/2022

Project Approval Executive Transmittal (attach file to your email submission.)

Submission Type: Updated Submission (Pre-Approval)

If withdraw, select Reason: Choose an item.

If Other, specify reason here: Click or tap here to enter text.

Sections Updated

Sections Changed (List all the sections that have been updated.)

- 2.4 Submittal Information
- 2.5 Baseline Processes and Systems
  - 2.5.4 Current Architecture Diagram
- 2.6 Mid-Level Solution Requirements
- 2.7 Assumptions and Constraints
- 2.8 Dependencies
- 2.9 Market Research
  - 2.9.1 Market Research Methodologies/Timeframes
  - 2.9.2 Results of Market Research
- 2.10 Alternative Solutions
  - 2.10.1 Solution Type -Recommended
  - 2.10.3 Description
  - 2.10.5 Assumptions and Constraints
  - 2.10.6 Implementation Approach
  - 2.10.7 Architecture Information
- 2.11 Recommended Solution
  - 2.11.1 Rationale for Selection
  - 2.11.2 Technical/Initial IT Project Oversight Framework Complexity Assessment
  - 2. 11.3 Procurement and Staffing Strategy
  - 2.11.4 Enterprise Architecture Alignment
  - 2.11.5 Project Phases
  - 2.11.6 High Level Proposed Project Schedule
  - 2.11.7 Cost Summary
- 2.12 Staffing Plan
  - 2.12.1 Administrative
  - 2.12.2 Business Program
  - 2.12.3 Information Technology
  - 2.12.4 Testing
  - 2.12.5 Data Conversion/Migration
  - 2.12.6 Training and Organizational Change Management
  - 2.12.7 Resource Capacity/Skills/Knowledge for Stage 3
- 2.12.9 Organization Charts
- 2.13 Data Conversion/Migration
- 2.14 Financial Analysis Worksheets

- **Summary of Changes** (Summarize updates made.)2.5 Baseline Processes and Systems
  - 2.5.4 Current Architecture Diagram

  Change: Updated the "ET System Context Diagram" with the change in icon. Database Icon replaced with World Wide Web icon under "Standalone Applications" and "External ET Applications" sections.

- 2.6 Mid-Level Solution Requirements

  Change: Mid-Level Solution Requirements were revised to reflect stakeholder business needs organized by nine main business capabilities

- 2.7 Assumptions and Constraints

  Change: Revised to include Data Governance Committee, modular iterative approach to procurement and implementation, and the Licensing and Payment Portal initiative.

- 2.8 Dependencies

  Change: Revised to include the following Dependency Elements and Description to the list: Data Governance Committee, Subject Matter Experts (SME) availability, Data Cleansing, Strong Coordination and Resource availability.

- 2.9 Market Research
  - 2.9.1 Market Research Methodologies/Timeframes

  Change: Revised to include timeframes for RFI2 as part of Market Research.

  - 2.9.2 Results of Market Research

  Change: Revised to include 6 new RFI2 responses and how they impacted the research, specifically the availability of many SaaS solutions and that Salesforce is a viable platform that aligns to CDFA's enterprise strategy. Also included Cost Estimates research.

- 2.10 Alternative Solutions
  - 2.10.3 Description

  Change: Revised to include RFI2 findings and better alignment to Market Research updated findings for a SaaS MOTS solution.

  - 2.10.5 Assumptions and Constraints

  Change: Revised to include RFI2 findings and better alignment to Market Research updated findings for a SaaS MOTS solution.

  - 2.10.6 Implementation Approach

  Change: Revised to align to Market Research updated findings for a SaaS MOTS solution.

- 2.11 Recommended Solution
  - 2. 11.1 Rationale for Selection

    Change: Revised to include RFI2 findings and alignment for a SaaS MOTS solution.

  - 2.11.2 Technical/Initial IT Project Oversight Framework Complexity Assessment

    Change: Technical Complexity score total has been changed from 32 to 31 reducing the complexity from 2.0 to 1.9.

  - 2.11.3 Procurement and Staffing Strategy

    Change: Revised to include three new activities to the list: Technical Analysis, Data Cleansing, Independent Verification and Validation (IV&V).

  - 2.11.4 Enterprise Architecture Alignment

    Change: Revised to align to Market Research updated findings and Alternative Solution 1 for a SaaS MOTS solution.

  - 2.11.5 Project Phases

    Change: Revised to align to 2.11.3 Procurement and Staffing Strategy updates.

  - 2.11.6 High Level Proposed Project Schedule

    Change: Revised to align to update project phase approach.

  - 2.11. 7 Cost Summary

    Change: Updated to include new Cost Summary Estimates from Market Research.

- 2.12 Staffing Plan
  - 2.12.1 Administrative

    Change: Updated the Administrative Staffing Plan to reflect staffing resources, roles, and responsibilities.

  - 2.12.2 Business Program

    Change: Updated the Business Program Staffing Plan to reflect staffing resources, roles, and responsibilities.

  - 2.12.3 Information Technology (IT)

    Change: Updated the IT Staffing Plan to reflect staffing resources, roles, and responsibilities.

  - 2.12.4 Testing

Change: Updated the Testing Staffing Plan to reflect staffing resources, roles, and responsibilities.

- 2.12.6 Training and Organizational Change Management

Change: Updated to reflect the Train the Trainer approach to business change to be undertaken by the selected System Integrator/Vendor.

- 2.12.7 Resource Capacity/Skills/Knowledge for Stage 3 Solution Development

Change: Updated to reflect focused activities to be undertaken in PAL Stage 3.

- 2.12.9 Organization Charts

Change: Updates to all five (5) Organization Charts to align with changes made to 2.12 Staffing Plan**.**

- 2.13 Data Conversion/Migration Status

Change: Updated statuses for all items to align to work to be completed during Stage 3.

Revised to include current Data Cleansing activities and findings. Included a timeline and narrative to outline the path forward for activities that were not completed during FY 21/22 and will be completed during Stage 3, such as Data Quality Assessment and Data Conversion Requirements gathering.

- 2.14 Financial Analysis Worksheet

Change: Updates to: Current Operations; Alterative 1 - Project, Alterative 1 - Future Operations, Alterative 1 Funding Plan; and, Alternative 2 - Project and Alternative 2 - Future Operations.

Condition (s) from Previous Stage(s)

Condition #: NA

Condition Category: Choose an item.

If Other, specify: Click or tap here to enter text.

Condition Sub-Category: Choose an item.

If Other, specify: Click or tap here to enter text.

Condition: Click or tap here to enter text.

Assessment: Choose an item.

If Other, specify: Click or tap here to enter text.

Agency/State Entity Response: Click or tap here to enter text.

Status: Choose an item.

If Other, specify: Click or tap here to enter text.

2.5 Baseline Processes and Systems

2.5.1 Description

Animal Health and Food Safety Services (AHFSS) Division mission is to serve the citizens of the State and consumers of California agricultural products to assure the safety, availability, and affordability of agricultural products by promoting California agriculture, protecting the public, and animal health while enhancing stewardship of the environment.

AHFSS is responsible for the safety and security of meat, poultry, and dairy products, along with other foods of animal origins. AHFSS provides services to protect the public and animal health through prevention, detection, and eradication of livestock and poultry diseases and dairy contamination incidents, including support for the California Animal Health and Food Safety Laboratory network in California. In addition, the division protects cattle owners against loss of animals by theft, straying or misappropriation through ongoing inspections and investigative services. The Division also provides services to prolong the effectiveness of antimicrobials through monitoring use in livestock and providing stewardship guidance and provides animal care oversight by ensuring covered products sold in California are from animals meeting minimum housing standards. Finally, the Division works with the California Governor's Office of Emergency Services to support animal needs during disasters.

CDFA's business processes are strategic assets that inform and drive the AHFSS business services. As defined in Section 2.5.2 Business Process Workflows, below are the high-level business process categories that the ET System helps to support:

- Certification, licensing, and permitting operations and individuals.
- Inspections and Sampling of premises to determine whether an operation is compliant.
- Compliance and Investigations which addresses enforcement issues identified during predecessor processes and incident reporting.
- Outreach and Education to educate and inform the public on incidents and other animal health-related information.

For a detailed description of CDFA business processes, refer to the 2.5.2 Business Process Workflows attachment. In addition to a model, profiles of each description are also included.

In 2004, AHFSS initiated efforts to consolidate several stand-alone legacy systems distributed over the State into a single Web-based system to enhance the collection, processing and reporting of program activity data. The consolidation efforts resulted in development and implementation of the Emerging Threats Data Management system (ET) that is currently the primary source of information management for AHFSS.

ET is a web-based, centralized system comprised of applications used to collect, manage, and report on program activities. The ET system serves as the primary source of demographic and

geographic information used to respond to emergency animal disease outbreaks and food safety incidents. ET supports the following business functions:

- Animal/Public Health
- Food Safety
- Market Support and Stabilization
- Operational Support

As depicted in attachment 2.5.4 ET System Context Diagram there are four web-based applications and four mobile applications that utilize a common underlying database. In addition to these, there are seven standalone web-based applications and one standalone mobile application. The ET Application itself, shown in the lower left quadrant of the diagram, supports 22 individual business functions and 51 business processes. ET database interfaces to external entities such as laboratories and private sector companies. These are further detailed in Sections 2.5.3, Business Process Workflows, and 2.5.4 ET Application Functions and Processes diagram located in section 2.5.3 Current Architecture Information.

As depicted in attachment 2.5.4 ET Functional Framework, the first row in the diagram represents the users of ET, the people and entities that rely on ET data, which include AHFSS division branches, AHFSS division staff, Local State & Federal entities, and Public entities. The bottom section of the diagram represents the individual applications and interfaces at the branch level that supply and use information within the Emerging Threats database to support AHFSS business needs. These include:

- Animal Health Branch (AHB)
- Milk, Poultry & Egg Safety Branch (MPES)
- Milk & Dairy Food Safety Branch (MDFS)
- Livestock Identification Branch (LID)

Animal Care (AC) and Antimicrobial Use and Stewardship (AUS) branch related programs are not supported by ET at this time. This diagram as well represents the application interaction with ET database.

As depicted in the 2.14 Financial Analysis Worksheet (FAWS), the average annual operating costs for the ET System is $179,803. The operating cost include both information technology and program expenditures. Refer to the 2.14 FAWS for detailed financial information.

2.5.2 Business Process Workflow

Attachment(s): 2.5.2 Business Workflows and Models.zip

2.5.3 Current Architecture Information

The remainder of the section provides details for the AHFSS business process and supporting technology. The AHFSS business processes are supported by 16 applications that comprise the ET System and include one manual process that does not have supporting technology. The 16 applications are categorized as follows:

- Emerging Threats (ET) Application: 1
  - Supports 22 business functions and 51 business processes.
- External Applications: 7
  - 3 Mobile
  - 4 Web-based
- Standalone Applications: 8
  - 1 Mobile
  - 7 Web-based

Note: The seven external applications listed above, while external to the primary ET application, interact directly with the ET database and are considered to be functional components of the overall ET system. As such, the connections between these applications and the ET database are not considered to be or listed as interfaces. Likewise, the eight Standalone applications are functional components of the ET System, but unlike the external applications, do not interact with the ET database or other system components (see attachment 2.5.4 ET System Context Diagram).

Business Function/Process(es)

ET Application:

Emerging Threats (ET) Application provides web accessible, task-oriented access by program staff via a central interface to 22 program-specific (including security, core data, administrative) functions and related processes. The ET Application functions and processes (refer to attachment 2.5.4 ET Application Functions & Processes) allow users to manage information to suffice AHFSS business needs such as: animal health disease surveillance and traceability; dairy product(s) facility licensing, inspection, and sampling; meat, poultry, shell egg, and rendering facilities licensing and inspection; brand registration and cattle ownership inspection.

Application, System, or Component: ET Application

COTS, MOTS, or Custom: Custom

Name/Primary Technology: ASP.NET 4.0

Runtime Environment

Cloud Computing Used: No

If “Yes,” specify: Choose an item.

Server/Device Function: Web Service, Application, and Database

Hardware: ESX Host 11, UCS 5108(Cisco Blade Server Chassis), C9U23, Nexus9372PX (CDT Managed L3 Switch), VLAN

Operating System: Windows Server 2008

System Software: MS SQL Server

System Interfaces: UC Davis CAHFS Lab (LIMS), FDA (USDA-EMRS)

Data Center Location: Agency/state entity operated by agency/state entity

If Other, specify: Click or tap here to enter text.

Security

Access: (answer Yes or No to all choices)

Public: No

Internal State Staff: Yes

External State Staff: No

Other: Yes Specify: FDA

Type of Information (answer Yes or No to all choices)

Personal: Yes

Health: Yes

Tax: Yes

Financial: Yes

Legal: No

Confidential: Yes

Other: No Specify: NA

Protective Measures (answer Yes or No to all choices)

Technical Security: Yes

Physical Security: Yes

Backup and Recovery: No

Identity Authorization and Authentication: Yes

Other, specify: NA

Data Management

Data Owner Name: Dr. Annette Jones

Data Owner Title: AHFSS Director/State Veterinarian

Data Owner Business Program: Animal Health and Food Safety Services (AHFSS)

Data Custodian Name: Robert Peterson

Data Custodian Title: AIO, CDFA

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Business Function/Process(es):

External ET Applications:

The Egg Safety and Quality Management (ESQM) Program is a web application. This Program within MPES branch ensures eggs have been properly handled, labeled, transported, refrigerated; and are wholesome and safe to eat. This application manages egg quality inspections and related activity information.

Application, System, or Component: External ET Application

COTS, MOTS, or Custom: Custom

Name/Primary Technology: ASP.NET 4.5

Runtime Environment

Cloud Computing Used: No

If “Yes,” specify: Choose an item.

Server/Device Function: Web Service, Application, and Database

Hardware: ESX Host 11, UCS 5108(Cisco Blade Server Chassis), C9U23, Nexus9372PX (CDT Managed L3 Switch), VLAN

Operating System: Windows Server 2008

System Software: MS SQL Server

System Interfaces: NA

Data Center Location: Agency/state entity operated by agency/state entity

If Other, specify: NA

Security

Access: (answer Yes or No to all choices)

Public: No

Internal State Staff: Yes

External State Staff: No

Other: No Specify: NA

Type of Information (answer Yes or No to all choices)

Personal: Yes

Health: Yes

Tax: No

Financial: No

Legal: No

Confidential: Yes

Other: No Specify: NA

Protective Measures (answer Yes or No to all choices)

Technical Security: Yes

Physical Security: Yes

Backup and Recovery: No

Identity Authorization and Authentication: No

Other, specify: NA

Data Management

Data Owner Name: Paula Batarseh

Data Owner Title: MPES Branch Manager

Data Owner Business Program: MPES

Data Custodian Name: Robert Peterson

Data Custodian Title: AIO, CDFA

Data Custodian Business Program: CDFA, Office of Information Technology (OITS)

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Business Function/Process(es):

Plant Health and Pest Prevention Services (**PHPPS)** - CDFA Agriculture Inspection Station Egg & Animal Movement System is a CDFA plant division system that is being leveraged by MPES and AHB branches to collect information from border stations related to livestock movements and egg shipments transported into state of California. This is a web application that feeds data to ET database.

Application, System, or Component: External ET Application

COTS, MOTS, or Custom: Custom

Name/Primary Technology: ASP.NET 4.5

Runtime Environment

Cloud Computing Used: No

If “Yes,” specify: Choose an item.

Server/Device Function: Web Service, Application, and Database

Hardware: ESX Host 11, UCS 5108(Cisco Blade Server Chassis), C9U23, Nexus9372PX (CDT Managed L3 Switch), VLAN

Operating System: Windows Server 2008

System Software: MS SQL Server

System Interfaces: NA

Data Center Location: Agency/state entity operated by agency/state entity

If Other, specify: NA

Security

Access: (answer Yes or No to all choices)

Public: No

Internal State Staff: Yes

External State Staff: No

Other: Yes Specify: FDA

Type of Information (answer Yes or No to all choices)

Personal: Yes

Health: Yes

Tax: No

Financial: No

Legal: No

Confidential: Yes

Other: No Specify: NA

Protective Measures (answer Yes or No to all choices)

Technical Security: Yes

Physical Security: Yes

Backup and Recovery: No

Identity Authorization and Authentication: Yes

Other, specify: NA

Data Management

Data Owner Name: Paula Batarseh & Anita Edmondson

Data Owner Title: MPES, AH Branch Managers

Data Owner Business Program: MPES, AH

Data Custodian Name: Robert Peterson

Data Custodian Title: AIO, CDFA

Data Custodian Business Program: CDFA, Office of Information Technology (OITS)

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Business Function/Process(es):

California Premises Identification System is a web application used to issue unique National Premises Identification Number (NPIN) to a premises record created in ET. It is managed by Animal Health Branch personnel.

Application, System, or Component: External ET Application

COTS, MOTS, or Custom: Custom

Name/Primary Technology: ASP.NET 4.5

Runtime Environment

Cloud Computing Used: No

If “Yes,” specify: Choose an item.

Server/Device Function: Web Service, Application, and Database

Hardware: ESX Host 11, UCS 5108 (Cisco Blade Server Chassis), C9U23, Nexus9372PX (CDT Managed L3 Switch), VLAN

Operating System: Windows Server 2008

System Software: MS SQL Server

System Interfaces: NA

Data Center Location: Agency/state entity operated by agency/state entity

If Other, specify: NA

Security

Access: (answer Yes or No to all choices)

Public: No

Internal State Staff: Yes

External State Staff: No

Other: No Specify: NA

Type of Information (answer Yes or No to all choices)

Personal: Yes

Health: Yes

Tax: No

Financial: No

Legal: No

Confidential: Yes

Other: No Specify: NA

Protective Measures (answer Yes or No to all choices)

Technical Security: Yes

Physical Security: Yes

Backup and Recovery: No

Identity Authorization and Authentication: No

Other, specify: NA

Data Management

Data Owner Name: Anita Edmondson

Data Owner Title: AH Branch Manager

Data Owner Business Program: Animal Health Branch (AHB)

Data Custodian Name: Robert Peterson

Data Custodian Title: AIO, CDFA

Data Custodian Business Program: CDFA, Office of Information Technology (OITS)

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Business Function/Process(es):

LID Mobile is a mobile application managed by Livestock Identification Branch brand inspectors to issue brand inspection certificates, invoices, and compliance notices. It is also used by authorized animal health personnel to issue movement permits. This application exchanges information with ET database.

Application, System, or Component: External ET Application

COTS, MOTS, or Custom: Custom

Name/Primary Technology: ASP.NET 4.5

Runtime Environment

Cloud Computing Used: No

If “Yes,” specify: Choose an item.

Server/Device Function: Web Service, Application, and Database

Hardware ESX Host 11, UCS 5108(Cisco Blade Server Chassis), C9U23, Nexus9372PX (CDT Managed L3 Switch), VLAN

Operating System: Windows Server 2008

System Software: MS SQL Server

System Interfaces: NA.

Data Center Location: Agency/state entity operated by agency/state entity

If Other, specify: NA

Security

Access: (answer Yes or No to all choices)

Public: Yes

Internal State Staff: Yes

External State Staff: No

Other: No Specify: NA

Type of Information (answer Yes or No to all choices)

Personal: Yes

Health: Yes

Tax: No

Financial: Yes

Legal: No

Confidential: Yes

Other: No Specify: NA

Protective Measures (answer Yes or No to all choices)

Technical Security: Yes

Physical Security: Yes

Backup and Recovery: No

Identity Authorization and Authentication: No

Other, specify: NA

Data Management

Data Owner Name: John Suther and Anita Edmondson

Data Owner Title: LID and AH Branch Manager

Data Owner Business Program: BLID

Data Custodian Name: Robert Peterson

Data Custodian Title: AIO, CDFA

Data Custodian Business Program: CDFA, Office of Information Technology (OITS)

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Business Function/Process(es):

Dairy Sample Management is a mobile application used by Milk and Dairy Foods inspectors to manage the collection dairy product samples and the submission to CAHFS lab for testing. This application exchanges information with the common, underlying ET database and UC Davis CAHFS laboratory.

Application, System, or Component: External ET Application

COTS, MOTS, or Custom: Custom

Name/Primary Technology: ASP.NET 4.5

Runtime Environment

Cloud Computing Used: No

If “Yes,” specify: Choose an item.

Server/Device Function: Web Service, Application, and Database

Hardware: ESX Host 11, UCS 5108(Cisco Blade Server Chassis), C9U23, Nexus9372PX (CDT Managed L3 Switch), VLAN

Operating System: Windows Server 2008

System Software: MS SQL Server

System Interfaces: CAHFS Lab, LIMS

Data Center Location: Agency/state entity operated by agency/state entity

If Other, specify: NA

Security

Access: (answer Yes or No to all choices)

Public: No

Internal State Staff: Yes

External State Staff: No

Other: No Specify: NA

Type of Information (answer Yes or No to all choices)

Personal: Yes

Health: Yes

Tax: No

Financial: No

Legal: No

Confidential: Yes

Other: No Specify: NA

Protective Measures (answer Yes or No to all choices)

Technical Security: Yes

Physical Security: Yes

Backup and Recovery: No

Identity Authorization and Authentication: Yes

Other, specify: NA

Data Management

Data Owner Name: Stephen Beam

Data Owner Title: MDFS Branch Manager

Data Owner Business Program: MPES

Data Custodian Name: Robert Peterson

Data Custodian Title: AIO, CDFA

Data Custodian Business Program: CDFA, Office of Information Technology (OITS)

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Business Function/Process(es):

SEFS Inspection is a mobile application, used by Shell Egg and Food Safety personnel to record farm and other egg related facilities inspections. This application exchanges information with ET database.

Application, System, or Component: External ET Application

COTS, MOTS, or Custom: Custom

Name/Primary Technology: ASP.NET 4.5

Runtime Environment

Cloud Computing Used: No

If “Yes,” specify: Choose an item.

Server/Device Function: Web Service, Application, and Database

Hardware: ESX Host 11, UCS 5108(Cisco Blade Server Chassis), C9U23, Nexus9372PX (CDT Managed L3 Switch), VLAN

Operating System: Windows Server 2008

System Software: MS SQL Server

System Interfaces: NA

Data Center Location: Agency/state entity operated by agency/state entity

If Other, specify: NA

Security

Access: (answer Yes or No to all choices)

Public: No

Internal State Staff: Yes

External State Staff: No

Other: No Specify: NA

Type of Information (answer Yes or No to all choices)

Personal: Yes

Health: Yes

Tax: No

Financial: No

Legal: No

Confidential: Yes

Other: No Specify: NA

Protective Measures (answer Yes or No to all choices)

Technical Security: Yes

Physical Security: Yes

Backup and Recovery: No

Identity Authorization and Authentication: Yes

Other, specify: NA

Data Management

Data Owner Name: Paula Batarseh

Data Owner Title: Milk, Poultry and Egg Safety (MPES) Branch Manager

Data Owner Business Program: MPES

Data Custodian Name: Robert Peterson

Data Custodian Title: AIO, CDFA

Data Custodian Business Program: CDFA, Office of Information Technology (OITS)

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Business Function/Process(es):

Brand Book is a mobile application created for the apple environment where users can download the livestock identification brand book that provides details about the brand symbols and earmarks used on livestock. This application exchanges information with ET database.

Application, System, or Component: External ET Application

COTS, MOTS, or Custom: Custom

Name/Primary Technology: ASP.NET 4.5

Runtime Environment

Cloud Computing Used: No

If “Yes,” specify: Choose an item.

Server/Device Function: Web Service, Application, and Database

Hardware: ESX Host 11, UCS 5108(Cisco Blade Server Chassis), C9U23, Nexus9372PX (CDT Managed L3 Switch), VLAN

Operating System: Windows Server 2008

System Software: MS SQL Server

System Interfaces: NA

Data Center Location: Agency/state entity operated by agency/state entity

If Other, specify: NA

Security

Access: (answer Yes or No to all choices)

Public: Yes

Internal State Staff: Yes

External State Staff: No

Other: No Specify: NA

Type of Information (answer Yes or No to all choices)

Personal: Yes

Health: Yes

Tax: No

Financial: No

Legal: No

Confidential: Yes

Other: No Specify: NA

Protective Measures (answer Yes or No to all choices)

Technical Security: Yes

Physical Security: Yes

Backup and Recovery: No

Identity Authorization and Authentication: No

Other, specify: NA

Data Management

Data Owner Name: John Suther

Data Owner Title: LID Branch Manager

Data Owner Business Program: BLID

Data Custodian Name: Robert Peterson

Data Custodian Title: AIO, CDFA

Data Custodian Business Program: CDFA, Office of Information Technology (OITS)

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Business Function/Process(es):

Standalone Applications:

AHB Time Tracker is a standalone web application that records AHB personnel work activities and related information such as activity type, number of hours worked, mileage and vehicle used. This application does not interact with ET.

Application, System, or Component: Standalone Application

COTS, MOTS, or Custom: Custom

Name/Primary Technology: ASP.NET 4.5

Runtime Environment

Cloud Computing Used: No

If “Yes,” specify: Choose an item.

Server/Device Function: Web Service, Application, and Database

Hardware: ESX Host 11, UCS 5108(Cisco Blade Server Chassis), C9U23, Nexus9372PX (CDT Managed L3 Switch), VLAN

Operating System: Windows Server 2008

System Software: MS SQL Server

System Interfaces: NA

Data Center Location: Agency/state entity operated by agency/state entity

If Other, specify: NA

Security

Access: (answer Yes or No to all choices)

Public: Yes

Internal State Staff: Yes

External State Staff: No

Other: No Specify: NA

Type of Information (answer Yes or No to all choices)

Personal: Yes

Health: No

Tax: No

Financial: No

Legal: No

Confidential: Yes

Other: No Specify: NA

Protective Measures (answer Yes or No to all choices)

Technical Security: Yes

Physical Security: Yes

Backup and Recovery: No

Identity Authorization and Authentication: No

Other, specify: NA

Data Management

Data Owner Name: Anita Edmondson

Data Owner Title: AH Branch Manager

Data Owner Business Program: AHB

Data Custodian Name: Robert Peterson

Data Custodian Title: AIO, CDFA

Data Custodian Business Program: CDFA, Office of Information Technology (OITS)

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Business Function/Process(es):

Entry Requirements System is a standalone web application used to manage livestock entry requirements. This system is available on the CDFA website for the public to access and to find the latest requirements needed to bring livestock and other animals into California.

Entry Requirements System is managed by AHB admin users for creating or updating requirements, disease information, and associating them to species accordingly. These changes are reflected on Entry Permits created through ILMP system.

Application, System, or Component: Standalone Application

COTS, MOTS, or Custom: Custom

Name/Primary Technology: ASP.NET 4.5

Runtime Environment

Cloud Computing Used: No

If “Yes,” specify: Choose an item.

Server/Device Function: Web Service, Application, and Database

Hardware: ESX Host 11, UCS 5108(Cisco Blade Server Chassis), C9U23, Nexus9372PX (CDT Managed L3 Switch), VLAN

Operating System: Windows Server 2008

System Software: MS SQL Server

System Interfaces: NA

Data Center Location: Agency/state entity operated by agency/state entity

If Other, specify: NA

Security

Access: (answer Yes or No to all choices)

Public: Yes

Internal State Staff: Yes

External State Staff: No

Other: No Specify: NA

Type of Information (answer Yes or No to all choices)

Personal: Yes

Health: Yes

Tax: No

Financial: No

Legal: No

Confidential: Yes

Other: No Specify: NA

Protective Measures (answer Yes or No to all choices)

Technical Security: Yes

Physical Security: Yes

Backup and Recovery: Yes

Identity Authorization and Authentication: No

Other, specify: NA

Data Management

Data Owner Name: Anita Edmondson

Data Owner Title: AH Branch Manager

Data Owner Business Program: Animal Health Branch (AH) Branch

Data Custodian Name: Robert Peterson

Data Custodian Title: AIO, CDFA

Data Custodian Business Program: CDFA, Office of Information Technology (OITS)

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Business Function/Process(es):

EMMP Event Registration System is a standalone web application used to manage equine event registration. It is managed by Animal Health Branch personnel. This application is designed to exchange information with the EMMP mobile app for sampling horses at equine events.

Application, System, or Component: Standalone Application

COTS, MOTS, or Custom: Custom

Name/Primary Technology: ASP.NET 4.5

Runtime Environment

Cloud Computing Used: No

If “Yes,” specify: Choose an item.

Server/Device Function: Web Service, Application, and Database

Hardware: ESX Host 11, UCS 5108(Cisco Blade Server Chassis), C9U23, Nexus9372PX (CDT Managed L3 Switch), VLAN

Operating System: Windows Server 2008

System Software: MS SQL Server

System Interfaces: NA

Data Center Location: Agency/state entity operated by agency/state entity

If Other, specify: NA

Security

Access: (answer Yes or No to all choices)

Public: No

Internal State Staff: Yes

External State Staff: No

Other: No Specify: NA

Type of Information (answer Yes or No to all choices)

Personal: Yes

Health: Yes

Tax: No

Financial: No

Legal: No

Confidential: Yes

Other: No Specify: NA

Protective Measures (answer Yes or No to all choices)

Technical Security: Yes

Physical Security: Yes

Backup and Recovery: No

Identity Authorization and Authentication: No

Other, specify: NA

Data Management

Data Owner Name: Anita Edmondson

Data Owner Title: AH Branch Manager

Data Owner Business Program: AHB

Data Custodian Name: Robert Peterson

Data Custodian Title: AIO, CDFA

Data Custodian Business Program: CDFA, Office of Information Technology (OITS)

==========

Business Function/Process(es):

Interstate Livestock Movement Permit (ILMP) is a standalone web application used to issue interstate movement permits for livestock. It is managed by Animal Health Branch personnel. This application interacts with the Entry Requirements System.

Application, System, or Component: Standalone Application

COTS, MOTS, or Custom: Custom

Name/Primary Technology: ASP.NET 4.5

Runtime Environment

Cloud Computing Used: No

If “Yes,” specify: Choose an item.

Server/Device Function: Web Service, Application, and Database

Hardware: ESX Host 11, UCS 5108(Cisco Blade Server Chassis), C9U23, Nexus9372PX (CDT Managed L3 Switch), VLAN

Operating System: Windows Server 2008

System Software: MS SQL Server

System Interfaces: NA

Data Center Location: Agency/state entity operated by agency/state entity

If Other, specify: NA

Security

Access: (answer Yes or No to all choices)

Public: No

Internal State Staff: Yes

External State Staff: Yes

Other: No Specify: NA

Type of Information (answer Yes or No to all choices)

Personal: Yes

Health: Yes

Tax: No

Financial: No

Legal: No

Confidential: Yes

Other: No Specify: NA

Protective Measures (answer Yes or No to all choices)

Technical Security: Yes

Physical Security: Yes

Backup and Recovery: No

Identity Authorization and Authentication: No

Other, specify: NA

Data Management

Data Owner Name: Anita Edmondson

Data Owner Title: AH Branch Manager

Data Owner Business Program: AHB

Data Custodian Name: Robert Peterson

Data Custodian Title: AIO, CDFA

Data Custodian Business Program: CDFA, Office of Information Technology (OITS)

==========

Business Function/Process(es):

Milk and Dairy Fluid Testing Program is a web application managed by private labs and authorized CDFA MDFS staff to record dairy chemistry composition information received from private labs.

Application, System, or Component: Standalone Application

COTS, MOTS, or Custom: Custom

Name/Primary Technology: ASP.NET 4.5

Runtime Environment

Cloud Computing Used: No

If “Yes,” specify: Choose an item.

Server/Device Function: Web Service, Application, and Database

Hardware: ESX Host 11, UCS 5108(Cisco Blade Server Chassis), C9U23, Nexus9372PX (CDT Managed L3 Switch), VLAN

Operating System: Windows Server 2008

System Software: MS SQL Server

System Interfaces: NA

Data Center Location: Agency/state entity operated by agency/state entity

If Other, specify: NA

Security

Access: (answer Yes or No to all choices)

Public: Yes

Internal State Staff: Yes

External State Staff: No

Other: No Specify: NA

Type of Information (answer Yes or No to all choices)

Personal: Yes

Health: Yes

Tax: No

Financial: No

Legal: No

Confidential: Yes

Other: No Specify: NA

Protective Measures (answer Yes or No to all choices)

Technical Security: Yes

Physical Security: Yes

Backup and Recovery: Yes

Identity Authorization and Authentication: No

Other, specify: NA

Data Management

Data Owner Name: Stephen Beam

Data Owner Title: MDFS Branch Manager

Data Owner Business Program: MDFS

Data Custodian Name: Robert Peterson

Data Custodian Title: AIO, CDFA

Data Custodian Business Program: CDFA, Office of Information Technology (OITS)

==========

Business Function/Process(es):

EMMP Sample Management is a mobile application used by AHB EMMP program inspectors in the field to collect samples from horses. This application interacts with EMMP Event Registration system to receive assignments for inspectors.

Application, System, or Component: Standalone Application

COTS, MOTS, or Custom: Custom

Name/Primary Technology: ASP.NET 4.5

Runtime Environment

Cloud Computing Used: No

If “Yes,” specify: Choose an item.

Server/Device Function: Web Service, Application, and Database

Hardware: ESX Host 11, UCS 5108(Cisco Blade Server Chassis), C9U23, Nexus9372PX (CDT Managed L3 Switch), VLAN

Operating System: Windows Server 2008

System Software: MS SQL Server

System Interfaces: NA

Data Center Location: Agency/state entity operated by agency/state entity

If Other, specify: NA

Security

Access: (answer Yes or No to all choices)

Public: No

Internal State Staff: Yes

External State Staff: No

Other: No Specify: NA

Type of Information (answer Yes or No to all choices)

Personal: Yes

Health: Yes

Tax: No

Financial: No

Legal: No

Confidential: Yes

Other: No Specify: NA

Protective Measures (answer Yes or No to all choices)

Technical Security: Yes

Physical Security: Yes

Backup and Recovery: No

Identity Authorization and Authentication: No

Other, specify: NA

Data Management

Data Owner Name: Anita Edmondson

Data Owner Title: AH Branch Manager

Data Owner Business Program: AHB

Data Custodian Name: Robert Peterson

Data Custodian Title: AIO, CDFA

Data Custodian Business Program: CDFA, Office of Information Technology (OITS)

==========

Business Function/Process(es):

MDFS Sampler and Weigher Refresher Course is a web application used by MDFS Licensees to take a refresher course to get a sampler and weigher license issued.

Application, System, or Component: Standalone Application

COTS, MOTS, or Custom: Custom

Name/Primary Technology: ASP.NET 4.5

Runtime Environment

Cloud Computing Used: No

If “Yes,” specify: Choose an item.

Server/Device Function: Web Service, Application, and Database

Hardware: ESX Host 11, UCS 5108(Cisco Blade Server Chassis), C9U23, Nexus9372PX (CDT Managed L3 Switch), VLAN

Operating System: Windows Server 2008

System Software: MS SQL Server

System Interfaces: NA

Data Center Location: Agency/state entity operated by agency/state entity

If Other, specify: NA

Security

Access: (answer Yes or No to all choices)

Public: Yes

Internal State Staff: Yes

External State Staff: No

Other: No Specify: NA

Type of Information (answer Yes or No to all choices)

Personal: Yes

Health: Yes

Tax: No

Financial: No

Legal: Yes

Confidential: Yes

Other: No Specify: NA

Protective Measures (answer Yes or No to all choices)

Technical Security: Yes

Physical Security: Yes

Backup and Recovery: No

Identity Authorization and Authentication: No

Other, specify: NA

Data Management

Data Owner Name: Stephen Beam

Data Owner Title: MDFS Branch Manager

Data Owner Business Program: MDFS

Data Custodian Name: Robert Peterson

Data Custodian Title: AIO, CDFA

Data Custodian Business Program: CDFA, Office of Information Technology (OITS)

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Business Function/Process(es):

Inedible Kitchen Grease Theft Reporting (IKG) Program is a standalone web application. This is a public facing application for the public to report violators, deter theft, and enforce laws pertaining to Inedible Kitchen Grease. This is maintained by the MPES branch.

Application, System, or Component: Standalone Application

COTS, MOTS, or Custom: Custom

Name/Primary Technology: ASP.NET 4.5

Runtime Environment

Cloud Computing Used: No

If “Yes,” specify: Choose an item.

Server/Device Function: Web Service, Application, and Database

Hardware: ESX Host 11, UCS 5108(Cisco Blade Server Chassis), C9U23, Nexus9372PX (CDT Managed L3 Switch), VLAN

Operating System: Windows Server 2008

System Software: MS SQL Server

System Interfaces: NA

Data Center Location: Agency/state entity operated by agency/state entity

If Other, specify: NA

Security

Access: (answer Yes or No to all choices)

Public: Yes

Internal State Staff: Yes

External State Staff: No

Other: No Specify: NA

Type of Information (answer Yes or No to all choices)

Personal: Yes

Health: Yes

Tax: No

Financial: No

Legal: No

Confidential: Yes

Other: No Specify: NA

Protective Measures (answer Yes or No to all choices)

Technical Security: Yes

Physical Security: Yes

Backup and Recovery: Choose an item.,

Identity Authorization and Authentication: Choose an item.

Other, specify: NA

Data Management

Data Owner Name: Paula Batarseh

Data Owner Title: MPES Branch Manager

Data Owner Business Program: MPES

Data Custodian Name: Robert Peterson

Data Custodian Title: AIO, CDFA

Data Custodian Business Program: CDFA, Office of Information Technology (OITS)

==========

Business Function/Process(es):

Outreach Education and Training is a manual function related to activities performed by MPES and MDFS branches. MPES programs provide outreach and education for animal slaughter, meat processing animal product rendering, pet food production, kitchen grease handling and egg production and handling, as well as the handling and disposal of inedible animal materials and kitchen grease. MDFS programs provide outreach and education in the safe production of milk and dairy products.

Application, System, or Component: NA

COTS, MOTS, or Custom: Choose an item.

Name/Primary Technology: NA

Runtime Environment

Cloud Computing Used: Choose an item.

If “Yes,” specify: Choose an item.

Server/Device Function: NA

Hardware: NA

Operating System: NA

System Software: NA

System Interfaces: NA

Data Center Location: Choose an item.

If Other, specify: NA

Security

Access: (answer Yes or No to all choices)

Public: No

Internal State Staff: No

External State Staff: No

Other: No Specify: NA

Type of Information (answer Yes or No to all choices)

Personal: No

Health: No

Tax: No

Financial: No

Legal: No

Confidential: No

Other: No Specify: NA

Protective Measures (answer Yes or No to all choices)

Technical Security: No

Physical Security: No

Backup and Recovery: No,

Identity Authorization and Authentication: No

Other, specify: NA

Data Management

Data Owner Name: Paula Batarseh, Stephen Beam

Data Owner Title: MPES & MDFS Branch Manager

Data Owner Business Program: MPES, MDFS

Data Custodian Name: Robert Peterson

Data Custodian Title: AIO, CDFA

Data Custodian Business Program: CDFA, Office of Information Technology (OITS)

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2.5.4 Current Architecture Diagram

Attachment(s):

- 2.5.4 ET Application Functions & Processes.pdf
- 2.5.4 ET Functional Framework.pdf
- 2.5.4 ET System Context Diagram.pdf
- 2.5.4 ET System Current Technical Architecture.pdf

2.5.5 Security Categorization Impact Table

Attachment(s):

- 2.5.5 Security Categorization Impact Diagram.pdf
- 2.5.5 Security Categorization Impact Table Information.docx

SECURITY CATEGORIZATION IMPACT SUMMARY

Confidentiality: High

Integrity: High

Availability: High

2.6 Mid-Level Solution Requirements

Attachment(s):

- 2.6 Mid-Level Solution Requirements.xlsx
- 2.6 Emerging Threats Stakeholder Business Needs.docx

2.7 Assumptions and Constraints

Assumptions/Constraints: *AHFSS Subject Matter Experts are fully engaged in the ET2 Project and shared their knowledge and expertise with less knowledgeable vendors.*

Description/Potential Impact: The AHFSS Subject Matter Experts are part of multiple AHFSS Programs that perform day-to-day activities protecting the agriculture industry in California and beyond. Periodically, emergency events arise that they must respond to achieve their protection responsibilities. However, it is assumed, and essential, that some Subject Matter Expert will be available should such an event occur to continue to move the ET2 Project forwards. This need will be address through and Executive Governance Committee for the ET2 Project.

Assumptions/Constraints: *AHFSS Programs will continue to be subject to changes in the business needs driven by legislation, regulation, Advisory Boards, and required process changes.*

Description/Potential Impact: AHFSS Programs are volatile and business needs can change quickly, which would impact the execution of the ET2 Project. Therefore, it is further assumed that a firm, robust, and disciplined Change Management/Control process will be implemented to ensure changes are reviewed and the impacts to Project cost and schedule are fully recognized and acknowledge by all stakeholders.

Assumptions/Constraints: *AHFSS will move towards standardization in terms of like business processes, such as authorization, inspection, etc.*

Description/Potential Impact: Business process re-design and standardization is planned by the AHFSS Division to standardize key common work processes for all Programs. It's further assumed that the ET2 Project will drive and force this standardization, which will be necessary due to the use of a MOTS/SaaS solution, and that the AHFSS Programs will support the standardization objective. A Business Change Management will be implemented to assist in the Programs adoption of standardized business process across the AHFSS Division

Assumptions/Constraints: *Data Governance Committee will be formed and supported by the AHFSS Division.*

Description/Potential Impact: Formal Data Governance is a relatively new concept across CDFA and within the AHFSS Division. However, when ET2 moves into an enterprise solution, like Salesforce, formal Data Governance becomes a significant need to support both the CDFA Strategic Plan, Technology Roadmap, and Division objectives

Assumptions/Constraints: *ET2 Project will use a modular iterative approach to procure and implement the ET2 solution.*

Description/Potential Impact: To control risks and reduce CDFA resource demands, it is assumed that the ET2 Project, working with CDT STP, will structure the implementation effort to be modular and iterative until all contracted functionality it delivered. However, through the implementation, both the new solution and legacy solution data consistency must be maintained.

Assumptions/Constraints: *The Licensing and Payment Portal initiative, separate upcoming project, will not significantly impact the licensing, certification, permitting, and registration functionality for ET2.*

Description/Potential Impact: The Licensing and Payment Portal initiative, driven by the Governor's Office, is not anticipated to significantly impact the ET2 Project as both solutions are planned to be implemented in the enterprise Salesforce platform that can support the initiatives goals and objectives.

Assumptions/Constraints: *The solution must be consistent with the CDFA Technology Roadmap and use an enterprise solution.*

Description/Potential Impact: The CDFA Technology Roadmap was created to address two significant issues within CDFA due to statutory language within the Food and Agriculture Code (FAC). CDFA cannot provide the necessary funding for the IT Division to support an ever-widening array of applications/solutions due to FAC 242 limitations and must focus on reducing the number of applications by leveraging common enterprise applications. Additionally, ongoing funding cannot be an IT cost/expense and must be incorporated into the business program budget to avoid the same FAC 242 limitation. In the near-term, this constraint will reduce the number of unknowns regarding costing, licensing, and direction for the remaining PAL phases as well as ability to evaluate best value across vendors. In the long-term, it leverages an enterprise solution that can be supported by the IT Division, within the constraints of the FAC.

Assumptions/Constraints: *CDFA IT State staff resource availability is a significant constraint.*

Description/Potential Impact: Due to funding constraints driven by statute, CDFA cannot increase IT funding to fill existing State positions to support the ET2 Project if the funding source is the Food and Agriculture Fund. Obtaining long-term General Funds to fund permanent IT positions has not been successful nor would it be reasonable for ongoing M&O

support of Food and Agriculture programs. Therefore, to provide the ET2 Project the resources necessary to manage and monitor the Project, CDFA will acquire staff augmentation consultant support.

2.8 Dependencies

Dependency Element: Project execution funding

Dependency Description: Implementation awaiting decision on fund approval

Dependency Element: BCP 8570-049-BCP-2020-GB, Licensing and Payment Portal Assessment Project

Dependency Description: Project defined in BCP may impact ET2 functionality, as it supports a business assessment to explore the establishment of a unified licensing portal at CDFA.

Dependency Element: Strong Coordination and Resource availability

Dependency Description: Resource Management is critical for ET2 to ensure the external systems like Emergency Management Response System (EMRS), CAHFS are optimized and allocating resources to the initiatives that align to ET2 and bring most value

2.9 Market Research

2.9.1 Market Research Methodologies/Timeframes

Methodologies Used to Perform Market Research

Request for Information (RFI): Yes

a) First iteration: 4/19/21

b) Second iteration: 3/23/22

Internet Research: Yes

Vendor Forums/Presentation: No

Trade shows: No

Published Literature: Yes

Leveraged Agreements: Yes

Collaboration with other Agencies/state entities or governmental entities: Yes

Other: No Specify: NA

Time spent conducting market research: Over 1 Year

Date market research was started: 3/29/2021

Date all market research was completed: 5/31/2022

2.9.2 Results of Market Research:

AHFSS, assisted by CDFA's OITS, conducted an evaluation of the market to capture all pertinent information relative to this proposal. AHFSS' goal was to:

1. Select the Best Value to the State, CDT, CDFA, AHFSS, and business users.
2. Meet the stated project goals and objectives.
3. Maximize mission critical user functionality (requirements/scope).
4. Accelerate implementation timeframes while being cost effective.
5. Align with the strategic direction of CDT, CDFA, and AHFSS.
6. Minimize overall project risk.
7. Provide benefits from early process improvements.

AHFSS performed evaluations that included the following:

1. Research specific state and vendor systems that provide animal health and food safety functionality.
2. Participate in two Request for Information (RFI) submissions and review.
3. Research internet information.
4. Research published literature.
5. Research Cost Estimates.

A. Researching specific state and vendor systems that provide animal health functionality

Market research was performed to compare non-California state entity's solutions as a transferrable or shareable option. The effort started with internet research of different state departments of agriculture, and further enhanced by an outreach effort from the AHFSS Director to numerous states across the nation, requesting information on the solutions and vendors that are currently in use. The response was positive and provided a tremendous amount of detail to the research.

20 State Entities responded to the information request with the research finding that many of them perform many of the same functions, with the same business capabilities as CDFA. Most states researched perform many functions using a MOTS Shared Ownership and Maintenance Model (vendor: National Agribusiness Technology Center). This MOTS solution is used to manage many animal disease outbreak incident management functions, which includes the ability to perform inspections, animal disease tracking and eradication, and resource management. Non-incident management tasks were also performed using this tool, such as permitting and registration activities as part of compliance and enforcement activities. Research findings demonstrated that this tool, while versatile, was

subject to a data breach in 2022 (2022 Data Breach) and 3 data breaches in 2021 (2021 Data Breaches), was not well managed, and software ownership concerns between various states lead to multiple contract disputes. As CDFA would need to fund the development of additional capabilities to align to its business processes, there is no guarantee that CDFA would retain ownership of this software when it is used or modified for use by other states.

There are other vendors utilized by various States that have broad animal health and food safety experience or background. In alignment to the internet research section below, State Entities that were using capability specific tools/solutions that support one or two capabilities, were not able to demonstrate an end-to-end solution as CDFA requires. These vendors were small developers that individual states contracted with to build in-house, custom solutions to accommodate one or two of the capabilities that their main system could not support. The research also indicated a lack of scalability, and complex integration with the main system.

B. Participating in two Request for Information (RFI) submissions and review

AHFSS drafted a Request for Information (RFI) and released it on April 30, 2021. AHFSS evaluated responses to the RFI by 5 vendors. Example responses were an integrated system to facilitate a best in breed solution to find the necessary products and implement. Another was a highly configurable Modified Off -the-Shelf (MOTS)-Customer Relationship Management (CRM) Product, not specific to a vendor/solution. Another approach was a MOTS approach that requires a large amount of customization. There is not one solution that indicates extensive animal health and food safety industry roots. In addition, costs varied or were not provided by some vendors. A rough estimation of projected costs for implementation and five years of support results ranged from $6M to $33M.

Because of the limited number of RFI responses and lack of more definitive costing information, it was deemed necessary to overhaul the previously submitted Mid-Level Requirements from a more business need functionality perspective and send out another RFI to the vendor community. RFI2 was released on March 23, 2022.

AHFSS along with OITS evaluated responses to RFI2 by six vendors. Five of the six responses recommended using Salesforce SaaS as a MOTS tool, configuring existing platforms to meet roughly 85% of the functional requirements and customize 15% to meet the remaining requirements. More than half of the vendors had animal food safety experience reassuring CDFA that they have options when it comes to finding a solution that will meet this need. Again, while costs varied, the responses did provide a better gauge of what a solution of this magnitude may cost to support future BCP funding requests with more accurate information.

C. Researching Internet Information

Internet research was performed in 2021 to compare potential vendor solutions. The research consisted of queries about the types of products that have all or some of the capabilities to meet the general needs of CDFA, including the ability to perform and track investigations as part of animal health outbreaks, including inspections, animal disease tracking and eradication, and resource management. Other priority features include

permitting and registration activities, as well as laboratory regulation and testing as part of compliance and enforcement activities. Internet research was performed on the following vendors/systems:

- National Agribusiness Technology Center
- TraceFirst
- Cal Cannabis Track and Trace
- Accela
- PEGASystems
- Microsoft

A summary of the research indicates that these systems were a collection of integrated MOTS solutions or a configurable Customer Relationship Management service on various platforms. The results also indicate that there was no single solution that can perform all the capabilities that CDFA desires. The overall research findings support the use of Software as a Service (SaaS) offerings. The MOTS solution that could meet 62% of CDFA's capabilities does have significant animal health, food safety, and laboratory experience. A concern is that it is unclear if the security of in house or smaller custom developed systems would meet State of CA regulations.

Finally, the results indicate that there is no single offering that could easily integrate specific capability solutions to meet CDFA's overall business need. Therefore, it is feasible to further research custom development of the existing ET solution by CDFA staff or in cooperation with a system integrator as an Alternative.

D. Researching Published Literature

Published literature research started at an industry and academic white paper level to understand what is known regarding animal health and food safety approaches. As more information was gathered, research was refined to focus on literature that recommended capabilities that aligned to CDFA's Technical capabilities. Finally, this literature was utilized as part of Market Research to identify industry recommended technology approaches, areas to guard against, and areas for further research. This research will inform the questions that are asked during Stage 3 Solution Development vendor solicitation.

The results of the published literature research discovered numerous findings and recommendations from a best practices and global perspective. These best practices can help CDFA to be more forward-looking like part of their data management and governance approach and how their business processes can interact with the different data elements.

Findings included:

- Attention to Information Management in the following areas:
    - Interoperability
    - Reliability, Scalability, and Portability
    - Resilience and Redundancy

    - Security
- Data focuses
    - Data Standards
    - Data Management
    - Data Capabilities
- Asset Management Constraints
    - Version history and availability
    - Asset lifecycle
    - Useability by staff
    - Durability of the asset
    - Geophysical location capabilities

E. Researching Cost Estimates

The Emerging Threats 2 (ET2) Stage Gate 2 – Alternatives Analysis effort performed two (2) separate Request for Information (RFI) elicitations to industry to collect information on potential solutions that would meet the business needs of the Animal Health and Food Safety Services (AHFSS) Division within CDFA. Within the information requested was rough order of magnitude costs for the solution and the implementation services. The cost data collected is briefly summarized at the end of this report for comparison purposes.

This report identifies two (2) separate and distinct costs estimates that will be used to assist in evaluating the cost data received from the RFI responses provided by the industry. The first cost estimate model used was based on the **Constructive Costs Model (COCOMO II)**, which is a parametric cost model used in many commercial cost model tools. The second cost estimate model used was an **Analogy Cost Model** that was based on actual contracted costs for the Technology Modernization Fund (TMF) Registered Service Agents/Agencies (RSA) Project. Each of these models have well known strengths and weaknesses, which are also identified below.

a. COCOMO II Cost Model Estimate

The COCOMO II cost estimate used the requirements defined in the RFI to ensure consistency between what industry estimated and what the cost model will estimate. The RFI requirements were extracted from a 142-page ET2 Stakeholder Business Needs document that identifies the to-be business needs for the AHFSS Division. There are 13 functional areas and a total of 835 requirements that were evaluated and entered into COCOMO. Note that that COCOMO will not estimate the effort required for data conversion and migration; a separate estimate was previously performed with CDT that generated an estimated cost for this work.

COCOMO provides multiple models to estimate costs; the model used for this effort was Function Point Analysis. Each requirement was individually evaluated to determine its Function Point parameters, defined as the number of External Inputs, External Outputs, External Inquiries, Internal Logical Files, and External Interfaces. In addition, for each requirement and its assessed Function Point parameter, the parameter complexity was assessed as a Low, Average, or High.

In addition, for COCOMO to generate the best accuracy, numerous other model attributes were set, versus using the default values. These attributes include, but not limited to, requirements stability or volatility, predestines of needs, development flexibility, architecture/risk resolution, team cohesion, process maturity, etc. Each of these alters exponential and linear coefficients of cost model and impacts the projected cost and schedule.

b. COCOMO Output

The COCOMO tool generates a report, available upon request, that estimates the cost and schedule using two different Software Development Life Cycle (SDLC) models, traditional Waterfall, and an iterative version of the Rational Unified Process, called MBASE. The COCOMO report identifies all the inputs into the model, to include all areas/modules, parameters, and attributes, and generates a support for each life cycle model and the details associated with each phase within the life cycle.

The following figure shows the high-level summary of the estimated effort, in Person-Months, Cost, and Schedule to implement the ET2 solution based on the defined Stakeholder Business Needs. COCOMO identifies an Optimistic, Most Likely, and a Pessimistic estimate for each of these.

	Person-Months	Cost
OPTIMISTIC	1019.3	$24,462,440
MOST LIKELY	1521.3	$36,511,104
PESSIMISTIC	2281.9	$54,766,656

	OPTIMISTIC	MOST LIKELY	PESSIMISTIC	
SCHEDULE	38.2	43.7	50.1	Months

Again, the estimate above is only the solution implementation costs, including licenses, but does not include the costs associated with the data conversion effort nor State resource costs. The cost for data conversion was estimated in 2018 by a CDT Data Quality consultant who reviewed the existing ET database, with special focus on the data model and data quality issues. At that time, the initial estimate was ~$10 million to clean the data and perform the data conversion and migration into a new solution, where the target data model would meet the business needs. Since then, some data cleaning has been initiated and newer database models exist, such as within Salesforce, that will reduce the level of effort. Currently, the estimated costs, which is used consistently for ET2 estimating, is $8 million.

Additionally, the ET2 Project is refining the State resource cost estimate using the Stage Gate 2 Financial Analysis Worksheet, which is not yet complete. In the interim, the State cost is consistently estimated at $8 million, which was based on the cost incurred by the CalCannabis Project. This State resource cost estimate will be updated when the financial analysis is complete.

Therefore, the estimated total cost using the COCOMO II model is:

	Optimistic	Most Likely	Pessimistic
Implementation	$24,462,440	$36,511,104	$54,766,656
Data Conversion	$8,000,000	$8,000,000	$8,000,000
State	$8,972,066	$8972,066	$8, 972,066
Total	**$41,434,506**	**$53,483,170**	**$71,738,722**

c. COCOMO II Cost Model Weaknesses

While the COCOMO model has been widely used in the information technology industry for decades, and still is being used in currently available software estimation products, it does have some weaknesses, though some can be compensated for in the model attributes. COCOMO II was developed by the University of Southern California (USC) where research and updates stopped in early 2000, meaning the USC model equations and static coefficients have not been updated. However, the COCOMO tool allows access to the equations and coefficients and data is available from other researchers (e.g., Carnegie Mellon Software Engineering Institute) and industry who use the tool that provide data to update the model.

For ET2, the preferred solution is a Salesforce platform-based solution. COCOMO II does not have a pre-built-in Salesforce solution Function Point conversion option. However, COCOMO II does provide a low-code option that is based on PowerBuilder. By the selection of PowerBuilder and adjusting the Reuse attribute to meet the expanded capabilities of Salesforce, this error was minimized.

COCOMO II also outputs limited SDLC model information, only waterfall and MBASE. While there are hundreds of SDLCs well documented, 30-years of experience and analysis with a wide range of SDLCs has shown that the actual total costs differ only slightly between various SDLCs. Mr. Robert Peterson authored for a peer-reviewed Institute of Electrical and Electronics Engineers (IEEE) Standard, IEEE-STD-1074, the choice of an SDLC is more of a risk management or mitigation decision than a cost reduction decision. The assumption is that this error in minimal.

d. COCOMO II Cost Model Strengths

COCOMO II has been used in industry for decades, and still is, because the model can produce good results, if used properly. By understanding and adjusting the attributes of the model, good estimates can be made, both early in the planning and as more details are defined. The COCOMO II model is a non-linear model that more accurately reflects the increased complexities of actual software solutions as the number of requirements grows, especially when compared to linear models.

The use of Function Points within COCOMO is well documented and proven throughout the past decades. Also, by following the Function Point counting rules defined in ISO/IEC 24570:2018 Software engineering — NESMA functional size measurement method — Definitions and counting guidelines for the application of function point analysis, repeatable

results can be obtained that further allow for the refinement of the model as additional information is obtained, and better interpretation of the results.

e. Analogy Cost Model Estimate

An Analogy Cost Model is a linear model where the estimated cost for an effort is based on the actual cost for another effort. While ideally the relative size (number of requirements) and the solution platform should be similar, that is not always possible, especially for a smaller organization like CDFA. For this ET2 cost estimate, the costs associated with the TMF RSA Project were used as the basis for estimating ET2 cost, due to common target solution platform, though the project sizes are significantly different.

An analysis was performed on the ET2 requirements, which were grouped into the same 13 areas as was done for the COCOMO estimate and then grouped into scenarios or Use Cases Diagrams, to maintain consistency with how the TMF RSA requirements were defined. Then, for each Use Case Diagram, individual Use Cases were identified and assessed as either Low (1), Medium (3), or High (7) complexity. The ET2 requirements identify 138 scenarios and a total of 369 Use Cases, where each Use Case had an average complexity weight of 4.4526.

The same approach was used in assessing the TMF RSA requirements. TMF RSA has a total of 16 scenarios and 69 Use Cases, where each Use Case had an average complexity weight of 4.1884.

The implementation-only cost for the TMF RSA effort, per the contract, is $476,040, which equate to $6,899 per Use Case, which is non-adjusted for the complexity differences in the Use Cases. Note that the Salesforce licensing costs were not included in the above calculation as the ET2 Project has Salesforce quotes for the ET2 effort, so the license costs were not included as part of the implementation cost and the quote value was used for licensing cost. Note that the RFI responses from the industry also included this same quote value.

The Analogy Cost Model then scales the TMF RSA cost up by multiplying the ratio of ET2 Use Cases over TMF RSA Use Cases, to account for the increased number of requirements, hence work. Then the result is multiplied by the ratio of ET2 requirements complexity over the TMF RSA requirements complexity, as ET2 on average has more complex requirements than TMF RSA.

The result is as follows, where the Implementation cost is from the Analogy Cost Model, and the remaining costs are standard costs used consistently across both models. A Volatility/Risk factor was added to the linear model to address the effects of changes and its impacts on implementation and Licenses and does not include Data Conversion nor State costs.

	Cost
Implementation	$25,198,784
Licenses	$2,900,000
Data Conversion	$8,000,000
State	$8,972,066
Subtotal	**$45,070,850**
Volatility/Risk	$1,681,904
Total	**$46,752754**

f. Analogy Cost Model Weakness

The most significant weakness of the Analogy Cost Model is that it does not scale well when comparing different sized projects. Unlike efforts that are more manual labor activities, such as mowing a football field where doubling the number of people mowing nearly halves the time, intellectual activities, where an individual's work is impacted by the work of others, has an exponential relationship. The Analogy Cost Model above compared the relatively small TMF RSA Project to a significantly larger ET2 Project. Therefore, because of the linear model, versus a more realistic exponential model, it is expected that the Analogy Cost Model estimate is low, under-estimating the expected cost.

Analogy Cost Models also do not take into account numerous other factors that drive costs. For example, the TMF RSA Project is staffed with two (2) implementers while the ET2 Project is anticipated to require 20-30 implementers. Because of the significant, >10-fold, increase in the number of implementing resources, factors such as process maturity, team cohesions, resource turn-over, project management/processes, and other issues that arise when using a larger implementation team are not considered in the Analogy Cost Model.

g. Analogy Cost Model Strengths

The primary advantage with the Analogy Cost Model is that it is relatively easy to compute by reviewing the respective requirements for each project. When reviewing and counting these requirements, care must be taken to count similar level requirements, meaning not counting mid-level requirements for one effort and detailed requirements for another. When performed carefully, the Analogy Cost Model estimate can be quite good when comparing similar sized projects, and because of its ease of use, the estimate can be performed quickly.

h. Best ET2 Cost Model Estimate

As identified above, both models have strengths and weaknesses that will impact the estimated costs, which are relevant to the ET2 cost estimation. By understanding the strengths and weaknesses, a better estimate can be made by comparing each models' resultant and leveraging the best of each.

The COCOMO II Cost Model is a better model as it takes into account the non-linear nature of larger projects, team cohesion, process maturity, etc. However, it does not have the capability to model no-code platforms such as Salesforce, though it does model significantly reduced

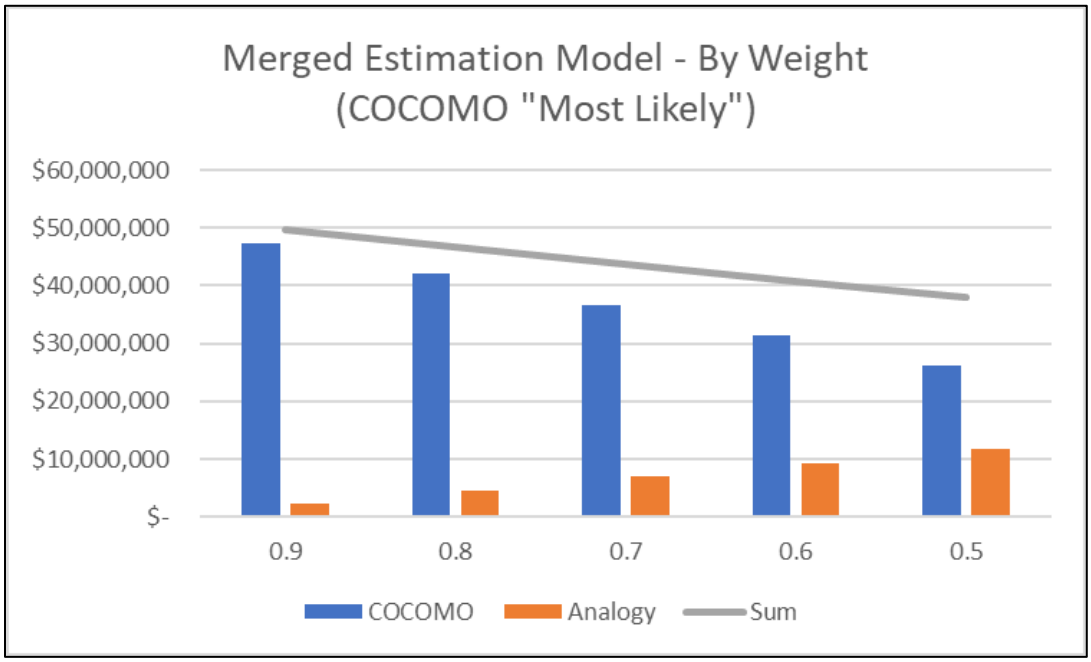
low-code efforts through its PowerBuilder model. Therefore, the estimated cost from this model is expected to be high.

The Analogy Cost Model has a significant weakness in that the model does not scale well, and the comparison project sizes were significantly different, >10-fold. However, the model does allow for comparison of different Salesforce implementation efforts. It is expected that the estimated cost from this model will be low.

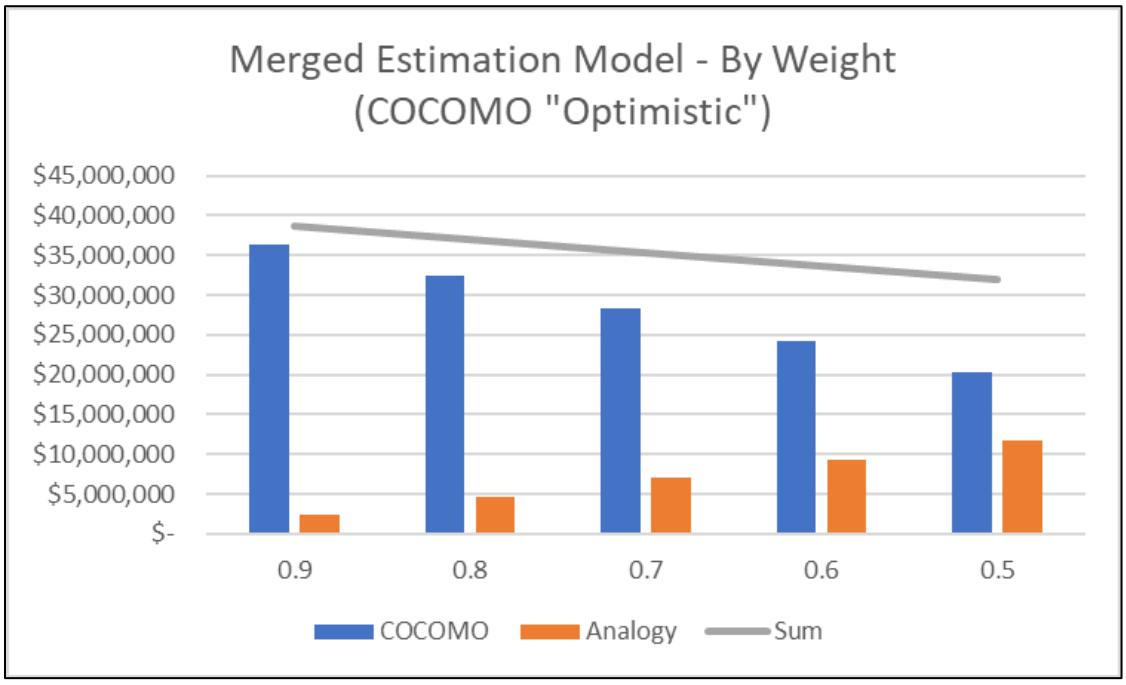
To determine the best estimate, the results of each model were weighted, based on expected error, to arrive at a best estimate of ET2 cost. COCOMO II "Most Likely" and "Optimistic" costs were used; "Pessimistic" cost was not used due to the expected error in COCOMO not being able to model Salesforce. The following table shows the expected costs when using weight factors of .9, .8, .7, .6, and .5 that were applied to the COCOMO cost; '1' minus the weight factor was applied to the Analogy cost. Further weighting was not used due to the errors associated with the Analogy Cost Model, from scaling.

COCOMO "Most Likely"					
Weight	**0.9**	**0.8**	**0.7**	**0.6**	**0.5**
COCOMO	$47,259,994	$42,008,883	$36,757,773	$31,506,662	$26,255,552
Analogy	$ 2,328,825	$ 4,657,650	$ 6,986,475	$ 9,315,300	$11,644,125
Sum	**$49,588,819**	**$46,666,533**	**$43,744,248**	**$40,821,962**	**$37,899,677**
COCOMO "Optimistic"					
Weight	**0.9**	**0.8**	**0.7**	**0.6**	**0.5**
COCOMO	$36,416,196	$32,369,952	$28,323,708	$24,277,464	$20,231,220
Analogy	$ 2,328,825	$ 4,657,650	$ 6,986,475	$ 9,315,300	$11,644,125
Sum	**$38,745,021**	**$37,027,602**	**$35,310,183**	**$33,592,764**	**$31,875,345**

From the data above, the linear relationship of the "Sum" results was reviewed. When looking at the COCOMO "Most Likely" line slope, the estimated cost changes by $11,689,142, from a .9 weight to a .5 weight, with the average at 0.7 weight of $43,744,248. This linear relationship was expected due to the linear weighting algorithm.



Similarly, when looking at the COCOMO “Optimistic” line slope, the estimated cost changes by $6,869,676, from a .9 weight to a .5 weight, with the average at 0.7 weight of $35,310,183. Again, this linear relationship was expected due to the linear weighting algorithm.



The best Cost Model estimate of expected cost for ET2, including implementation, licenses, State costs (CDFA resources, staff augmentation consultants, CDT Oversight, etc.) and data conversion, is computed as the average cost for “Most Likely” and “optimistic” at the weight factor of .7. This results in an expected ET2 cost of:

	Cost
"Most Likely"	$43,744,248
"Optimistic"	$35,310,183
Average	**$39,527,215**

The Financial Analysis Worksheet that is in development will estimate the total for all costs.

i. RFI Responses Cost Summary

As stated previously, the second RFI was released to obtain better information from the vendor community, most specifically cost information. The costs identified by each respondent to the second RFI are summarized below.

	Impelmentation	Licenses	Total
AST	No Estimate	$2,900,000	$2,900,000
CGI	No Estimate	$2,900,000	$2,900,000
Matrix	$5,000,000	$2,900,000	$7,900,000
IBM	$31,950,000	$17,200,000	$49,150,000
OnCore	$18,000,000	Included	$18,000,000
TraceFirst	$1,350,000	Included	$1,350,000

Two (2) respondents, AST and CGI, did not provide any cost for Implementation services, which would include Data Conversion; they did provide the Salesforce licensing cost quote that they received from Salesforce. Two other respondents, Matrix and TraceFirst, identified a significantly low cost that is less than the expected costs for Data Conversion alone, based on a joint CDT and CDFA estimate for Data Conversion.

The two (2) other respondents, IBM and OnCore, provided costs that minimally exceed the singular expected Data Conversion cost. The IBM cost is expected to be high, driven by the licensing costs identified in the RFI response. IBM identified excessive costs for the Salesforce licensing, almost triple the Salesforce quote other respondents provided, and they identified $9 million for IBM software licenses, which are not required. Separating the excessive licensing costs from the IBM response cost and only including the Salesforce quote costs, the IBM estimate would be $34,850,000. In contrast, the OnCore costs appear low as this cost includes the Data Conversion and the Salesforce licensing cost. Separating these two cost components, an estimated total of $10.9 million, from the response identified cost of $18 million, suggests $7.1 million for the functional implementation services, which appears low.

From a ET2 Project planning perspective, when the Cost Model estimate is $39,527,215 and the most realistic RFI response cost, IBM less excessive licensing costs, is $34,850,000, DFA proposes to include the Cost Model estimate of $39,527,215 to account for requirements changes/volatility, which were considered in the cost estimation models. Again, this cost includes all cost associated with an implementation contractor to provide the Salesforce

licenses, implement the needed functionality, and perform data conversion. It also includes a placeholder cost, $8 million, for State costs.

Therefore, the costs are:

Cost Area	Cost
Implementation & Data Conversion	33,198,784
Licenses	$2,900,000
State	8,972,066
Total	$45,070,850

Attachment(s):

- 2.9.2 Market Research Summary Report.docx

2.10 Alternative Solutions

2.10.1 Solution Type (Recommended or Alternative) : Recommended

2.10.2 Name: Modified Off the Shelf (MOTS)

2.10.3 Description:

The proposed alternative seeks to engage a System Integrator, with support from State staff to implement a Modified Off the Shelf (MOTS) solution, create business process workflows and replace existing CDFA – ET application system capabilities in a phased approach to:

- Respond to regulatory and legislative mandates such as licensing, permitting, and certifications.
- Create functionality to manage inspections, sampling and testing, and compliance and investigations.
- Add a public facing web portal to support customer payments, renewals, and communications.

CDFA has completed a supplemental Request for Information to further refine market research findings. With this new information, it was determined that there are solutions that can provide the full breadth of CDFA's current capabilities, with roughly 15% requiring customization. In addition, there are more vendors with animal health and food safety experience that accommodate CDFA's requirements and business needs. Also, the vendor solutions researched include pre-built modular business functionality that CDFA can leverage to support new legislative mandates.

Approach (Answer Yes or No to all choices)**:**

Increase staff – new or existing capabilities: Yes

Modify the existing business process or create a new business process: Yes

Reduce the services or level of services provided: No

Utilize new or increased contracted services: Yes

Enhance the existing IT system: No

Create a new IT system: Yes

Perform a business-based procurement to have vendors propose a solution: No

Other: No Specify: NA

2.10.4 Benefit Analysis

Benefits/Advantages:

- A Systems Integrator (SI) will reduce the risk of a complex, multi-product implementation.
- A SI will bring industry knowledge, product implementation, data governance, dashboard, and analytics skills to the project with aligned goals to meet the entire end-to-end scope.
- MOTS software products are typically more stable and mature because of each MOTS company's dedication to software developmental adherence to formal institutionalized process; 100% dedication of knowledge teams to the business domain; and continual vetting and refining of their products over years with multiple similar customers.
- There is a shorter time to deployment than a custom-developed solution or a best in breed approach since the reviewed MOTS products will meet the majority of the requirements with lower levels of software development required (i.e., more application changes through configuration rather than programming functionality).
- The time commitment from business staff is moderate during software configuration, customization, and deployment timeframes.
- The adaptable nature of MOTS products will allow CDFA the flexibility to configure the solution to align with their business needs, even as those needs change over time.
- MOTS software products are typically based on technology platforms that enable the exchange of data with a variety of other technology platforms and formats, and allow vendors to customize, extend, test, and build applications and workflows to meet specific needs.
- MOTS software may have additional capabilities that can be exploited when required later, generally for a relatively small increase in software license cost or in some cases for no additional cost.

- MOTS software is typically being continually improved, with additional functionality and technical enhancements being added on a frequent basis.
- Some providers may not have a per user cost as part of their deployment and licensing.
- Knowledgeable customer support for MOTS software is typically stable through the years of ownership. Help desk support and training is available.
- The initial prices of a MOTS solution are substantially less than the initial cost to develop a custom solution since CDFA benefits from the advantage of having development and support costs shared across customers that purchase the MOTS software products.
- Researched MOTS vendors have significant animal health and food safety experience and a demonstrated partnership with State and Federal entities.
- The alternative satisfies CDFA's ET2 business objectives outlined in the Stage 1 Business Analysis.

Disadvantages:

- CDFA Animal Health and Food Safety programs are evolving business processes and requirements which may change during this procurement and implementation. Therefore, CDFA may need to adjust their business processes to align with the configuration of the MOTS solution.
- The amount of business process change could impact the duration of implementation and staff acceptance of organizational change.
- Proposed SI solutions may not meet the complete breadth and/or depth of requirements as requested by the Program.
- Additional software development could be required to customize CDFA specific requirements, including Animal Care, Antimicrobial Use and Stewardship programs, public payments, workflow, dashboards, and external interfaces.
- CDFA expects integration but no specifics can be provided at this time.
- If the vendor hosts the software, there is increased risk of unauthorized access and dissemination of data by unauthorized people or devices given the delegate trust to the vendor.
- There is a risk that the vendor could stop supporting the software in the future or the software company is purchased by new owners that significantly modifies the base functionality or purpose of the MOTS software.
- Once SI is engaged, it does not allow easy pivoting should specific products and/or integration services prove insufficient (monolithic procurement).

Anticipated Time to Achieve Objectives After Project Go-Live

(Choose one: Within 1 Year, 2 Years, 3 Years, 4 Years, Over 4 Years)

Objective Number: 1.1 Objective Timeframe Within 1 year

Objective Number: 1.2 Objective Timeframe Within 1 year

Objective Number: 1.3 Objective Timeframe Within 1 year

Objective Number: 2.1 Objective Timeframe Within 1 year

Objective Number: 2.2 Objective Timeframe 2 years

Objective Number: 3.1 Objective Timeframe 2 years

Objective Number: 4.1 Objective Timeframe 2 years

Objective Number: 5.1 Objective Timeframe 2 years

Objective Number: 5.2 Objective Timeframe Within 1 year

Objective Number: 6.1 Objective Timeframe 2 years

Objective Number: 6.2 Objective Timeframe 2 years

Objective Number: 7.1 Objective Timeframe 3 years

Objective Number: 7.2 Objective Timeframe 3 years

Anticipated Time to Achieve Financial Benefits after Project Go-Live

Increased Revenues: Choose an item.

Cost Savings: Choose an item.

Cost Avoidance: Choose an item.

Cost Recovery: Choose an item.

2.10.5 Assumptions and Constraints

ASSUMPTIONS

- The selected solution provider is expected to have in-depth animal health or food safety experience.
- The selected MOTS shall be able to integrate into CDFA's existing enterprise-level software by leveraging pre-built components and tools to minimize the need to build custom modules and/or components.
- The selected MOTS software will continue to be a viable and supported product for the foreseeable future including enhancement for security, mobile, etc.

- The identified Department staffing levels are met given the approved project implementation schedule.
- Depending on the final product solution, it is expected that roughly 15% modifications are needed to meet the needs using the current set of objectives, mid-level requirements and non-functional requirements.
- CDFA will work with CDT – Statewide Technology Procurement Division to acquire the desired solution at the time of procurement.
- CDFA shall define a comprehensive set of functional, non-functional, and technical requirements up front to be included in the contract with the System Integrator.
- This alternative assumes cloud (Software-as-a-Service or SaaS) for architecture and costing purposes. In accordance with the Technology Letter, Update to Cloud Computing Policy – Infrastructure and Platform (TL 17-06), deviation from the cloud computing policy requires an exemption request per SIMM Section 18B.
- Vendor integration and transitional services are required to support the development, implementation, and ongoing maintenance of the MOTS solution.
- CDT and its strategic partners concur with the CDFA recommended best approach to proceed to the next PAL Stage.
- Integration with other software applications may add complexity and cost to the project implementation.

CONSTRAINTS

- The product must be configured, customized, and/or extended to fully meet all requirements.
- Strategies for other Department enterprise solutions (e.g., use of other COTS/MOTS products for payments and licensing, overall enterprise architecture and data governance/management) need to be finalized before implementing any MOTS solution.
- Salesforce is the preferred solution platform.

2.10.6 Implementation Approach

Identify the type of existing IT system enhancement or new system proposed

(Answer Yes or No for each)

Enhance the current system: No

Develop a new custom solution: No

Purchase a Commercial off-the-Shelf (COTS) system: Yes

Purchase or obtain a system from another government agency (Transfer): No

Subscribe to a Software as a Service (SaaS) system: Yes

Other: No Specify: NA

Identify cloud services to be leveraged (Answer Yes or No for each)

Software as a Service (SaaS) provided by OTech: No

Software as a Service (SaaS) provided by commercial vendor: Yes

Platform as a Service (PaaS) provided by OTech: No

Platform as a Service (PaaS) provided by commercial vendor: No

Infrastructure as a Service (IaaS) provided by OTech: No

Infrastructure as a Service (IaaS) provided by commercial vendor: No

If no cloud services will be leveraged by this alternative, provide a justification of why cloud services are not being leveraged: Click or tap here to enter text.

Identify who will modify the existing system or create the new system (Select Yes or No for each)**:**

Agency/state entity IT staff: No

A vendor will be contracted: Yes

Inter-agency agreement will be established with another governmental agency. No

Specify agency name(s): Click or tap here to enter text.

Other: Choose an item. Specify: Click or tap here to enter text.

Identify the implementation strategy:

All requirements will be addressed in this proposed project in a single implementation. No

Requirements will be addressed in incremental implementations in this proposed project. Yes

Some requirements will be addressed in this proposed project. The remaining requirements will be addressed later: No

Specify the year when the remaining requirements will be addressed: Click or tap here to enter text.

Identify if the technology for the proposed project will be mission critical and public facing:

The technology implemented for this proposed project will be considered mission critical and public facing. Yes

2.10.7 Architecture Information

Business Function/Process(es):

Internal animal health and food safety system to support incident management, investigations, compliance, licensing and permitting, inspection, sampling, payments, and reporting.

Application, System, or Component: Emerging Threats 2

COTS, MOTS, or Custom: MOTS

Name/Primary Technology: To be determined as part of Stage 3 & 4.

Runtime Environment

Cloud Computing Used: Yes

If “Yes,” specify: SaaS - Software as a Service

Server/Device Function:

Hardware:

Operating System:

System Software:

System Interfaces: US Davis CAHFS Lab (LIMS), FDA (USDA-EMRS)

Data Center Location: State data center operated by CDT

If Other, specify: Click or tap here to enter text.

Security

Access: (answer Yes or No to all choices)

Public: Yes

Internal State Staff: Yes

External State Staff: Yes

Other: No Specify: NA

Type of Information (answer Yes or No to all choices)

Personal: Yes

Health: No

Tax: No

Financial: Yes

Legal: Yes

Confidential: Yes

Other Choose an item. Specify: NA

Protective Measures (answer Yes or No to all choices)

Technical Security: Yes

Physical Security: Yes

Backup and Recovery: Yes

Identity Authorization and Authentication: Yes

Other, specify: NA

Data Management

Data Owner Name: Dr. Annette Jones

Data Owner Title: AHFSS Director and State Veterinarian

Data Owner Business Program: Animal Health and Food Safety Services (AHFSS)

Data Custodian Name: Robert Peterson

Data Custodian Title: AIO, CDFA

Data Custodian Business Program: CDFA, Office of Information Technology Services (OITS)

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2.10.1 Solution Type (Recommended or Alternative): Alternative

2.10.2 Name: Custom Developed Application

2.10.3 Description:

The proposed alternative seeks to engage a system integrator (SI) to develop and implement a custom solution to implement new business and technical capabilities, not fully available in the marketplace, to replace existing CDFA – ET application system capabilities to:

- Fully replace the existing ET system.
- Respond to regulatory and legislative mandates such as licensing, permitting, and certifications.

- Create functionality to manage inspections, sampling and testing, and compliance and investigations.
- Add a public facing web portal to support customer payments, renewals, and communications.

A custom solution leverages an SI, with support from State staff, to meet CDFA requirements, ensure that the system is scalable for future growth, interoperable to support integration with a variety of applications and devices, and ensures the development of a fully integrated enterprise system that maximizes end-user utilization and data collection, providing clean reliable data for consumption for analytics and operations. With this alternative, the software is owned by CDFA, who can determine the need for change based upon business needs and availability of resources.

Approach:

Increase staff – new or existing capabilities: Yes

Modify the existing business process or create a new business process: Yes

Reduce the services or level of services provided: No

Utilize new or increased contracted services: Yes

Enhance the existing IT system: No

Create a new IT system: Yes

Perform a business-based procurement to have vendors propose a solution: No

Other: No Specify: Click or tap here to enter text.

2.10.4 Benefit Analysis

Benefits/Advantages: Click or tap here to enter text.

- Developing custom software built exactly to CDFA specifications ensures the solution addresses the full set of functional and non-functional requirements, is based on the needs of users and the organization and minimizes the need for business process re-engineering.
- The development of custom software provides flexibility for changes, that are scaled and scheduled according to the changing needs of the Organization.
- Investing in a custom software solution gives the organization total control over the solution's functionality allowing it to adapt to the organization, extending its shelf life. This addresses the inability to find a COTS solution that fulfills more than 80% of CDFA's business capability needs.
- The development of custom software allows the utilization of existing data and data types potentially reducing the level of effort associated with data transformation and conversion.

- Integration with other systems and components can be designed into a custom solution, making the integration points less apparent and easier than with commercial off the shelf products.
- In a custom development environment, the owner has total control over the source code, limiting the ability for malicious code being introduced into the system.
- Security can be inbuilt in the software, meeting CDT's policies, and the possibility of intrusion can be considerably reduced.
- Software is totally customized; CDFA has the option to decide what kind of custom software development technology to use to design application components.
- Having a custom application in place allows CDFA to develop its own trained in-house personnel or to contract what needs to be done when it needs to be done.
- Having the right custom software solution empowers CDFA, given the availability of skilled resources, to quickly and successfully adapt to the changes that are already here or on the horizon.
- As the owner of the software, CDFA has full control and decision-making authority over the size, extent, and methods used to implement modifications, eliminating vendor input, inputs from other parties (users), and concerns regarding the ability to apply vendor supplied patches and software updates.

Disadvantages:

- Newly developed software is more likely to have undiscovered bugs that impact stability and take time to work out of the system.
- The overall cost of a custom development project is higher than that of a COTS or MOTS solution. This is because the CDFA, the product owner. Must bear the entire cost of development and we as that of the ongoing maintenance and support, whereas the costs associated with maintenance and support associated with a COTS or MOTS product is distributed among the license holders.
- Given the size of the team required for custom development and the current overwhelming demand for technical specialists, it is difficult to find, hire, and retain professionals with the right skill sets and levels of experience
- The organization may lack the knowledge to source candidates and assess their technical skills accurately.
- The unique nature of individual software projects can create problems for developers and managers in estimating and scheduling development time.
- Inaccurate or improper budget estimation may lead to incorrect resource allocation, scheduling errors, and cost overruns.
- Development and Go-Live costs are greater than for MOTS/COTS products.
- Additional IT staff will be required to support the development and stabilization of the software than would be with COTS / MOTS implementation.

- Potential higher cost to implement, test, and maintain for one-time and maintenance/operation cost.
- This alternative requires a high degree of support from the business (subject matter experts) to design and test the application software. The dedicated business resources cannot be made available without significant, adverse effects to the programs for which they work and support.

Anticipated Time to Achieve Objectives After Project Go-Live

(Choose one: Within 1 Year, 2 Years, 3 Years, 4 Years, Over 4 Years)

Objective Number: 1.1 Objective Timeframe: Within 1 year

Objective Number: 1.2 Objective Timeframe: Within 1 year

Objective Number: 1.3 Objective Timeframe: Within 1 year

Objective Number: 2.1 Objective Timeframe: Within 1 year

Objective Number: 2.2 Objective Timeframe: 2 years

Objective Number: 3.1 Objective Timeframe: 2 years

Objective Number: 4.1 Objective Timeframe: 2 years

Objective Number: 5.1 Objective Timeframe: 2 years

Objective Number: 5.2 Objective Timeframe: 2 years

Objective Number: 6.1 Objective Timeframe: Within 1 year

Objective Number: 6.2 Objective Timeframe: 2 years

Objective Number: 7.1 Objective Timeframe: 3 years

Objective Number: 7.2 Objective Timeframe: 3 years

Anticipated Time to Achieve Financial Benefits after Project Go-Live

Increased Revenues: Choose an item.

Cost Savings:

Cost Avoidance:

Cost Recovery:

2.10.5 Assumptions and Constraints

ASSUMPTIONS:

- CDFA does not have the staff or expertise to support the design and development of a custom application of this magnitude. Therefore, CDFA must engage the services of a Systems Integrator to implement the project. As such, CDFA may also be dependent on external resources for ongoing maintenance and support.
- CDFA has the funding and staffing to work with the SI to complete the System Development Life Cycle full system integration.
- CDFA has the right cross-functional teams available to perform the full custom development.
- CDFA has the funding available to procure implementation vendor to augment internal staff.
- The Systems Integrator will not possess the business knowledge necessary to validate the functional requirements and design the system.
- Multiple vendors are available in the market to complete custom development of the solution from which to choose.
- CDFA must be prepared to educate the newly allocated resources or vendor to the extent necessary to facilitate communication. That is, to be able to effectively exchange ideas, express functional needs, and validate functional requirements are understood and have been fulfilled.

CONSTRAINTS:

- CDFA does not have the staff necessary to successfully execute system integration and would therefore need to contract out this function.
- CDFA has a limited number of business staff and subject matter experts that can be made available to support the project.
- Given the size of the team that would be required to design, build, and implement a custom solution, coordination and communication may be limiting factors that increase, rather than decrease the time required.

2.10.6 Implementation Approach

Identify the type of existing IT system enhancement or new system proposed

(Answer Yes or No for each)

Enhance the current system: No

Develop a new custom solution: Yes

Purchase a Commercial off-the-Shelf (COTS) system: No

Purchase or obtain a system from another government agency (Transfer): No

Subscribe to a Software as a Service (SaaS) system: No

Other: No Specify: Click or tap here to enter text.

Identify cloud services to be leveraged (Answer Yes or No for each)

Software as a Service (SaaS) provided by OTech: No

Software as a Service (SaaS) provided by commercial vendor: No

Platform as a Service (PaaS) provided by OTech: Yes

Platform as a Service (PaaS) provided by commercial vendor: Yes

Infrastructure as a Service (IaaS) provided by OTech: Yes

Infrastructure as a Service (IaaS) provided by commercial vendor: No

If no cloud services will be leveraged by this alternative, provide a justification of why cloud services are not being leveraged: Click or tap here to enter text.

Identify who will modify the existing system or create the new system (Select Yes or No for each)**:**

Agency/state entity IT staff: No

A vendor will be contracted: Yes

Inter-agency agreement will be established with another governmental agency. No

Specify agency name(s): Click or tap here to enter text.

Other: Choose an item. Specify: Click or tap here to enter text.

Identify the implementation strategy:

All requirements will be addressed in this proposed project in a single implementation. No

Requirements will be addressed in incremental implementations in this proposed project. Yes

Some requirements will be addressed in this proposed project. The remaining requirements will be addressed later: No

Specify the year when the remaining requirements will be addressed: Click or tap here to enter text.

Identify if the technology for the proposed project will be mission critical and public facing:

The technology implemented for this proposed project will be considered mission critical and public facing. Yes

2.10.7 Architecture Information

Business Function/Process(es): Internal animal health and food safety system to support incident management, investigations, compliance, licensing and permitting, payments, and reporting.

Application, System, or Component: Emerging Threats 2

COTS, MOTS, or Custom: Custom

Name/Primary Technology: ASP .Net

Runtime Environment

Cloud Computing Used: Yes

If “Yes,” specify: PaaS - Platform as a Service

Server/Device Function: Cloud PaaS

Hardware:

Operating System: Cloud PaaS Microsoft Windows

System Software: Cloud PaaS Microsoft SQL Server

System Interfaces: UC Davis CAHFS Lab (LIMS), FDA (USDA-EMRS)

Data Center Location: State data center operated by CDT

If Other, specify: Click or tap here to enter text.

Security

Access: (answer Yes or No to all choices)

Public: Yes

Internal State Staff: Yes

External State Staff: Yes

Other: No Specify: Click or tap here to enter text.

Type of Information (answer Yes or No to all choices)

Personal: Yes

Health: No

Tax: No

Financial: Yes

Legal: Yes

Confidential: Yes

Other Yes Specify: Animal Health and quarantine data

Protective Measures (answer Yes or No to all choices)

Technical Security: Yes

Physical Security: Yes

Backup and Recovery: Yes

Identity Authorization and Authentication: Yes

Other, specify: Click or tap here to enter text.

Data Management

Data Owner Name: Dr. Annette Jones

Data Owner Title: AHFSS Director and State Veterinarian

Data Owner Business Program: Animal Heals and Food Safety Services (AHFFS)

Data Custodian Name: Robert Peterson

Data Custodian Title: AIO, CDFA

Data Custodian Business Program: CDFA, Office of Information Technology Services (OITS)

==========

2.10.1 Solution Type (Recommended or Alternative): Alternative

2.10.2 Name: Best in Breed

2.10.3 Description:

This proposed alternative seeks to engage a system integrator (SI), with support from State staff, to develop a best in breed approach to implement new business and technical capabilities and replace existing CDFA – ET system capabilities to:

- Fully replace the existing ET system.
- Respond to regulatory and legislative mandates such as licensing, permitting, and certifications.
- Create functionality to manage inspections, sampling and testing, and compliance and investigations.
- Add a public facing web portal to support customer payments, renewals, and communications.

The Best-in-Breed approach was considered as there does not appear to be a single product that meets the majority of CDFA business, functional, or non-functional requirements. The SI, in this instance, selects the best applications and tools (products) from different vendors to meet CDFA's requirements. The SI then determines the necessary data and interface components necessary to integrate these specialized technology products and services into a unified solution. This gives CDFA freedom of choice in each functional area and is not dependent on a single vendor. This solution could mix and match application services as necessary.

In addition, CDFA can select various tools to serve specific purposes. Meaning, instead of purchasing a single product or adopting a single vendor solution suite, CDFA adopts specialized solutions from many vendors, integrates and customizes them to meet the functional requirements. Best in breed is about choosing different products from multiple vendors that best align to delivering application functionality to enable the AHFSS business objectives.

Approach (Answer Yes or No to all choices)**:**

Increase staff – new or existing capabilities: Yes

Modify the existing business process or create a new business process: Yes

Reduce the services or level of services provided: No

Utilize new or increased contracted services: Yes

Enhance the existing IT system: No

Create a new IT system: Yes

Perform a business-based procurement to have vendors propose a solution: Yes

Other: Yes Specify: Best in Breed

2.10.4 Benefit Analysis

Benefits/Advantages:

- Companies developing Best in breed solutions, typically prefer rapid innovation. They are built on the latest, most modern technology. They are designed to adapt quickly to organizational needs.
- Aims to select products and services that most closely align to the business needs, functional requirements, non-functional requirements and architectural standard and objectives of the organization.
- Meets the majority of the organization's business, functional, and non-functional requirements with alignment to architectural direction and standards.

Disadvantages:

- There may be Organizational Change management issues as CDFA staff may have to work with multiple systems, databases, and vendors. This creates challenges during the earlier phases of adoption particularly when setting up the solution user interface.
- Best in breed solution typically does not integrate and work well with other products, or the integration with other systems will be a complex process that requires extensive time to understand the individual software product's limitations and capabilities.
- When selecting a multiple software solution, CDFA may have trouble with data integration and data sharing as it can impact the process of data entry and data integrity.
- Determining if a single database end-result can be achieved, because each solution has a dependence on its own database, is a risk. Short of exporting the necessary data into a data warehouse CDFA would not have aggregated data from multiple solution databases.
- Different tools will impact the consistency of the user interface, both internally and externally. Organizations prefer that all applications and systems used by employees have a consistent look. Because the platforms will be procured from different vendors, there may not be a similar look and feel for the end user experience.
- Best in breed approach lacks consistency in design.
- There may be an increase in administrative work as there may be a need to manage several licensing agreements and separate billing efforts.
- Identifying the product dependencies and determining the implementation sequence may become a challenge as some products may be dependent on the processes and data supported by other, yet-to-be implemented, products.
- Data formats for common data is different for each product and adds to integration complexity and administrative overhead by the SI and CDFA.
- Product and system integration are very complex to get right the first time and require multiple attempts to work well with other software products from different solution providers.
- System administration may require a higher level of effort as each product may need to be administered separately.
- The SI managing the implementation project involves multiple vendors and multiple contracts/sub-contracts. As the number of sub-contractors increases, so does the complexity of the project and the SI's overall costs. Further, the SI will likely need to add margin onto each of the sub-contractor's costs, thus increasing overall project costs.
- The complexity inherent in a best in breed solution makes even minor modifications to the system challenging due to downstream impacts, such as data quality, data integrity, and process integrity.
- It may be necessary to implement multiple 3rd party products, such as database management systems, to support the individual products necessary to achieve the full

functionality of the existing system. This increases the overall implementation cost as well as ongoing maintenance costs.

- This approach could mean more development time and even harder data synchronization, as it may not integrate easily with other applications in the same environment.
- Vendors are often small companies that might not be able to fully cover the needs of enterprise-level clients.
- This approach may incur potentially higher Maintenance and Operations costs that CDFA is unwilling to support.

Anticipated Time to Achieve Objectives After Project Go-Live

(Choose one: Within 1 Year, 2 Years, 3 Years, 4 Years, Over 4 Years)

Objective Number: 1.1 Objective Timeframe: Within 1 year

Objective Number: 1.2 Objective Timeframe: Within 1 year

Objective Number: 1.3 Objective Timeframe: Within 1 year

Objective Number: 2.1 Objective Timeframe: Within 1 year

Objective Number: 2.2 Objective Timeframe: Within 1 year

Objective Number: 3.1 Objective Timeframe: 2 years

Objective Number: 4.1 Objective Timeframe: 2 years

Objective Number: 5.1 Objective Timeframe: 2 years

Objective Number: 5.2 Objective Timeframe: 2 years

Objective Number: 6.1 Objective Timeframe: 2 years

Objective Number: 6.2 Objective Timeframe: 2 years

Objective Number: 7.1 Objective Timeframe: 3 years

Objective Number: 7.2 Objective Timeframe: 3 years

Anticipated Time to Achieve Financial Benefits after Project Go-Live

Increased Revenues: Choose an item.

Cost Savings: Choose an item.

Cost Avoidance: Choose an item.

Cost Recovery: Choose an item.

2.10.5 Assumptions and Constraints

(List the assumptions and constraints, and describe the impact to the project):

ASSUMPTIONS:

- Products and services can be found that closely align to CDFA's business, functional, and non-functional requirements that also align with the organization's architectural direction and established standards.
- With a Best in Breed Solution, CDFA would be dependent on the individual product suppliers for ongoing maintenance and support. Therefore, CDFA would need to contract for maintenance and support services for as long as the individual products that comprise the solution are in production.
- CDFA has the funding and staffing to work with the SI to complete the Software Development Life Cycle (SDLC) full system integration.
- A higher contingency is required to address issues incurred between integrated products and vendors. Multiple contracts for multiple products and implementation resources could prove challenging to manage.
- A Data Warehouse solution is required to integrate separate application databases into a single database for analytics and reporting.

CONSTRAINTS:

- CDFA does not have the staff necessary to support system integration and would therefore need to contract out this function.

2.10.6 Implementation Approach

Identify the type of existing IT system enhancement or new system proposed

(Answer Yes or No for each)

Enhance the current system: No

Develop a new custom solution: No

Purchase a Commercial off-the-Shelf (COTS) system: Yes

Purchase or obtain a system from another government agency (Transfer): No

Subscribe to a Software as a Service (SaaS) system: Yes

Other: Yes Specify: Best in breed approach - choosing different products from multiple vendors.

Identify cloud services to be leveraged (Answer Yes or No for each)

Software as a Service (SaaS) provided by OTech: No

Software as a Service (SaaS) provided by commercial vendor: Yes

Platform as a Service (PaaS) provided by OTech: No

Platform as a Service (PaaS) provided by commercial vendor: Yes

Infrastructure as a Service (IaaS) provided by OTech: No

Infrastructure as a Service (IaaS) provided by commercial vendor: Yes

If no cloud services will be leveraged by this alternative, provide a justification of why cloud services are not being leveraged: Click or tap here to enter text.

Identify who will modify the existing system or create the new system (Select Yes or No for each)**:**

Agency/state entity IT staff: No

A vendor will be contracted: Yes

Inter-agency agreement will be established with another governmental agency. No

Specify agency name(s): Click or tap here to enter text.

Other: No Specify: Click or tap here to enter text.

Identify the implementation strategy:

All requirements will be addressed in this proposed project in a single implementation. No

Requirements will be addressed in incremental implementations in this proposed project. Yes

Some requirements will be addressed in this proposed project. The remaining requirements will be addressed later: No

Specify the year when the remaining requirements will be addressed: Click or tap here to enter text.

Identify if the technology for the proposed project will be mission critical and public facing:

The technology implemented for this proposed project will be considered mission critical and public facing. Yes

2.10.7 Architecture Information

Business Function/Process(es): Internal animal health and food safety system to support incident management, investigations, compliance, licensing and permitting, payments, and reporting.

Application, System, or Component: To be determined

COTS, MOTS, or Custom:

Name/Primary Technology: Web Based

Runtime Environment

Cloud Computing Used: Yes

If “Yes,” specify: SaaS - Software as a Service

Server/Device Function: Cloud SaaS

Hardware: Cloud SaaS

Operating System: Cloud SaaS

System Software: Cloud SaaS

TIP: Copy and paste to add system software information if the application, system, or component uses additional system software.

System Interfaces: UC Davis CAHFS Lab (LIMS), FDA (USDA-EMRS)

Data Center Location: Commercial data center

If Other, specify: Click or tap here to enter text.

Security

Access: (answer Yes or No to all choices)

Public: Yes

Internal State Staff: Yes

External State Staff: Yes

Other: No Specify: Click or tap here to enter text.

Type of Information (answer Yes or No to all choices)

Personal: Yes

Health: No

Tax: No

Financial: Yes

Legal: Yes

Confidential: Yes

Other No Specify: Click or tap here to enter text.

Protective Measures (answer Yes or No to all choices)

Technical Security: Yes

Physical Security: Yes

Backup and Recovery: Yes

Identity Authorization and Authentication: Yes

Other, specify: Click or tap here to enter text.

Data Management

Data Owner Name: Dr. Annette Jones

Data Owner Title: AHFSS Director and State Veterinarian

Data Owner Business Program: Animal Health and Food Safety Services (AHFSS)

Data Custodian Name: Robert Peterson

Data Custodian Title: AIO, CDFA

Data Custodian Business Program: CDFA, Office of Information Technology Services (OITS)

2.11 Recommended Solution

2.11.1 Rationale for Selection:

CDFA analyzed three alternatives leveraging the (Request for Information (RFI) evaluation criteria to select the preferred alternative. CDFA sponsors and project management feel strongly that the selected SI must have animal health and food safety experience. Selecting an approach that does not include program knowledge translates to a more costly project overall because there would be a need to pay the solution integrator time for their team to learn about the industry, plus the CDFA – Animal Health and Food Safety Services (AHFSS) Program business capabilities and functions. In addition, there would be a delay to wait for the SI to learn the AHFSS program well enough to effectively deliver a system that fully addresses all the Business Objectives with the mandatory functional and non-functional requirements. This contextual knowledge will help any vendor to quickly onboard and understand AHFSS' mission and its business needs. CDFA expects solutions offered in the market today will shift and mature as knowledge in the industry and technology demand grows. This software

maturity will provide better options that may align to CDFA's needs and capabilities as we move through the remaining PAL Stages.

The alternative evaluation criteria include a ratings approach where three criteria were used to evaluate the three alternatives chosen for our Alternative Analysis. A lower Complexity is considered better, a lower Cost is better, and a higher animal health and food safety experience is best.

Ranking Criteria

	Complexity and Cost	Animal Health/Food Safety Experience
High	Least desirable	Most desirable
Medium	More desirable	More desirable
Low	Most desirable	Least desirable

Recommended Alternatives Evaluation Results

Category	MOTS	Custom Development	Best in Breed
Complexity	Medium	High	High
Cost	Medium	High	High
Animal Health and Food Safety Experience	Medium	Low	Low

The recommended solution approach is to procure a system integrator to implement a MOTS in a SaaS environment. The majority of research findings and two prior RFI submissions were recommended for the Salesforce platform. CDFA is exploring this platform and its modular capabilities to confirm alignment with CDFA's IT decision to move future application systems to Salesforce as an enterprise architecture solution for all new investments to yield the following benefits.

- Platform maturity reduces project costs and duration as several requirements are met out of the box
- The availability of reputable SI's and Salesforce practitioners reduce resourcing times
- The Salesforce platform represents a low code/no code option that delivers business changes quickly, easily and with less risk
- Improves ongoing maintainability and solution lifetime through product upgrades that address browser and device support, security threats and emerging technologies

More than half of the vendors researched have animal health and food safety experience, making this a good fit for CDFA. In addition, there are multiple proposed solutions utilizing Salesforce technology that already support modules such as inspection, permitting, and case management that can be adopted to fit CDFA's needs.

Finally, the recommended solution meets all the objectives as stated in the Stage 1 Business Analysis and will align with CDFA's strategic direction to use Cloud Services whenever possible. A MOTS solution also leverages existing business and technical capabilities that

adheres to the CA Dept of Technology's and CDFA's strategic directions such as meeting Cloud Security Standards. This solution approach was evaluated against other alternatives and was deemed to be most feasible because of capability, schedule, and budget of the project, and it provided a solid foundation for extensibility and adaptability to meet future changes to the program.

Alternative 2

Custom Development was not selected as the best approach to meet CDFA – AHFSS as it is unlikely to find a solution integrator to assist CDFA to develop the custom solution and may not have the necessary animal health and food safety experience CDFA requires. In addition, this alternative is the most costly (i.e., see FAWS for the cost estimate), it would consume resources that CDFA does not currently have available to redirect, nor can our budget accommodate the one-time hiring and retaining of staff at the required level. In addition, this alternative has a very high degree of complexity and very high risk that will require CDFA to absorb a lengthy delay to deliver the desired application enhancements plus, rewrite the current ET functionality or the standalone components into a single standard programming language. Building a new ET via a custom approach doesn't fit CDFA strategic direction plus the build duration, cost, and complexity of this approach isn't effective nor efficient.

Alternative 3

Best in Breed was not selected as it is too complex to maintain consistent integration and data among the multiple tools/applications, would require high administrative overhead either by the solution integrator or state staff to maintain integration, licenses, and contract agreements. The solution integrator would not have the animal health and food safety experience required and would also require CDFA to have a level of IT expertise that is not available to accept this very high risk and very high complexity approach and be dependent on third party software integration for enhancements.

2.11.2 Technical/Initial CA-PMM Complexity Assessment

(Reference section 2.11.2 in the Stage 2 Alternative Analysis Preparation Instructions, SIMM19B.1 and Complexity Assessment instructions SIMM Section 45D.)

Technical Complexity Score: 1.9

Complexity Zone: Zone II/III - Medium Criticality/Risk

2.11.3 Procurement and Staffing Strategy

This section describes the procurement and staffing strategy for PAL Stage 3 and Stage 4 activities.

Select an **Activity**: Requirements Elicitation

Responsible (answer Yes or No to all choices)

Agency/state entity staff: Yes

STP staff: Yes

CDT Project Approvals and Oversight staff: No

CA-PMO staff: No

DGS staff: No

Contractor: Yes

Other: No Specify: NA

When Needed (answer Yes or No to all choices.)

Stage 3 Solution Development: Yes

Stage 4 Project Readiness and Approval: No

After project is approved (after Stage 4 Project Readiness and Approval): No

Cost Estimate Verification (answer Yes or No to all choices)

Market research conducted (MR): Yes

Cost estimate provided (CE): Yes

CDT CE: No

DGS CE: No

Request for Information (RFI) conducted: Yes

Comparable vendor services have been used on previous contracts (CV): No

Leveraged Procurement Agreement (LPA): No

Complete Only if Contractor Responsible for Activity

Procurement Vehicle: Pre-qualified Master Agreement Contractor (PMAC)

If Other, specify: Click or tap here to enter text.

Contract Type**:** Time and Materials (T&M)

If Other, specify: Click or tap here to enter text.

==========

Select an Activity: Solicitation Development

Responsible (answer Yes or No to all choices)

Agency/state entity staff: Yes

STP staff: Yes

CDT Project Approvals and Oversight staff: Yes

CA-PMO staff: No

DGS staff: No

Contractor: Yes

Other: No Specify: NA

When Needed (answer Yes or No to all choices.)

Stage 3 Solution Development: Yes

Stage 4 Project Readiness and Approval: Yes

After project is approved (after Stage 4 Project Readiness and Approval): No

Cost Estimate Verification (answer Yes or No to all choices)

Market research conducted (MR): Yes

Cost estimate provided (CE): Yes

CDT CE: Yes

DGS CE: No

Request for Information (RFI) conducted: Yes

Comparable vendor services have been used on previous contracts (CV): No

Leveraged Procurement Agreement (LPA): No

Complete Only if Contractor Responsible for Activity

Procurement Vehicle: Pre-qualified Master Agreement Contractor (PMAC)

If Other, specify: NA

Contract Type**:** Time and Materials (T&M)

If Other, specify: NA

==========

Select an Activity: Cost Estimating

Responsible (answer Yes or No to all choices)

Agency/state entity staff: Yes

STP staff: Yes

CDT Project Approvals and Oversight staff: No

CA-PMO staff: No

DGS staff: No

Contractor: Yes

Other: Choose an item. Specify: Click or tap here to enter text.

When Needed (answer Yes or No to all choices.)

Stage 3 Solution Development: Yes

Stage 4 Project Readiness and Approval: Yes

After project is approved (after Stage 4 Project Readiness and Approval): No

Cost Estimate Verification (answer Yes or No to all choices)

Market research conducted (MR): Yes

Cost estimate provided (CE): Yes

CDT CE: No

DGS CE: No

Request for Information (RFI) conducted: Yes

Comparable vendor services have been used on previous contracts (CV): No

Leveraged Procurement Agreement (LPA): No

Complete Only if Contractor Responsible for Activity

Procurement Vehicle: Pre-qualified Master Agreement Contractor (PMAC)

If Other, specify: NA

Contract Type**:** Time and Materials (T&M)

If Other, specify: NA

==========

Select an Activity: Business Analysis

Responsible (answer Yes or No to all choices)

Agency/state entity staff: Yes

STP staff: No

CDT Project Approvals and Oversight staff: No

CA-PMO staff: No

DGS staff: No

Contractor: Yes

Other: Choose an item. Specify: Click or tap here to enter text.

When Needed (answer Yes or No to all choices.)

Stage 3 Solution Development: Yes

Stage 4 Project Readiness and Approval: Yes

After project is approved (after Stage 4 Project Readiness and Approval): Yes

Cost Estimate Verification (answer Yes or No to all choices)

Market research conducted (MR): Yes

Cost estimate provided (CE): No

CDT CE: No

DGS CE: No

Request for Information (RFI) conducted: Yes

Comparable vendor services have been used on previous contracts (CV): Yes

Leveraged Procurement Agreement (LPA): Yes

Complete Only if Contractor Responsible for Activity

Procurement Vehicle: Pre-qualified Master Agreement Contractor (PMAC)

If Other, specify: NA

Contract Type**:** Time and Materials (T&M)

If Other, specify: NA

==========

Select an Activity: Project Management

Responsible (answer Yes or No to all choices)

Agency/state entity staff: Yes

STP staff: No

CDT Project Approvals and Oversight staff: No

CA-PMO staff: No

DGS staff: No

Contractor: Yes

Other: Choose an item. Specify: Click or tap here to enter text.

When Needed (answer Yes or No to all choices.)

Stage 3 Solution Development: Yes

Stage 4 Project Readiness and Approval: Yes

After project is approved (after Stage 4 Project Readiness and Approval): Yes

Cost Estimate Verification (answer Yes or No to all choices)

Market research conducted (MR): No

Cost estimate provided (CE): Yes

CDT CE: No

DGS CE: No

Request for Information (RFI) conducted: No

Comparable vendor services have been used on previous contracts (CV): Yes

Leveraged Procurement Agreement (LPA): Yes

Complete Only if Contractor Responsible for Activity

Procurement Vehicle: Pre-qualified Master Agreement Contractor (PMAC)

If Other, specify: NA

Contract Type**:** Time and Materials (T&M)

If Other, specify: NA

Select an Activity: Technical Analysis

Responsible (answer Yes or No to all choices)

Agency/state entity staff: Yes

STP staff: No

CDT Project Approvals and Oversight staff: No

CA-PMO staff: No

DGS staff: No

Contractor: Yes

Other: Choose an item. Specify: Click or tap here to enter text.

When Needed (answer Yes or No to all choices.)

Stage 3 Solution Development: Yes

Stage 4 Project Readiness and Approval: Yes

After project is approved (after Stage 4 Project Readiness and Approval): Yes

Cost Estimate Verification (answer Yes or No to all choices)

Market research conducted (MR): Yes

Cost estimate provided (CE): No

CDT CE: No

DGS CE: No

Request for Information (RFI) conducted: No

Comparable vendor services have been used on previous contracts (CV): Yes

Leveraged Procurement Agreement (LPA): Yes

Complete Only if Contractor Responsible for Activity

Procurement Vehicle: Pre-qualified Master Agreement Contractor (PMAC)

If Other, specify: NA

Contract Type: Time and Materials (T&M)

If Other, specify: NA

==========

Select an Activity: Data Cleansing

Responsible (answer Yes or No to all choices)

Agency/state entity staff: Yes

STP staff: No

CDT Project Approvals and Oversight staff: No

CA-PMO staff: No

DGS staff: No

Contractor: Yes

Other: Choose an item. Specify: Click or tap here to enter text.

When Needed (answer Yes or No to all choices.)

Stage 3 Solution Development: Yes

Stage 4 Project Readiness and Approval: Yes

After project is approved (after Stage 4 Project Readiness and Approval): Yes

Cost Estimate Verification (answer Yes or No to all choices)00A0

Market research conducted (MR): No

Cost estimate provided (CE): No

CDT CE: No

DGS CE: No

Request for Information (RFI) conducted: No

Comparable vendor services have been used on previous contracts (CV): No

Leveraged Procurement Agreement (LPA): No

Complete Only if Contractor Responsible for Activity

Procurement Vehicle: Pre-qualified Master Agreement Contractor (PMAC)

If Other, specify: NA

Contract Type: Time and Materials (T&M)

If Other, specify: NA

==========

Select an Activity: Conduct Procurement

Responsible (answer Yes or No to all choices)

Agency/state entity staff: Yes

STP staff: Yes

CDT Project Approvals and Oversight staff: Yes

CA-PMO staff: No

DGS staff: Yes

Contractor: Yes

Other: Choose an item. Specify: Click or tap here to enter text.

When Needed (answer Yes or No to all choices.)

Stage 3 Solution Development: No

Stage 4 Project Readiness and Approval: Yes

After project is approved (after Stage 4 Project Readiness and Approval): Yes

Cost Estimate Verification (answer Yes or No to all choices)

Market research conducted (MR): Yes

Cost estimate provided (CE): No

CDT CE: No

DGS CE: No

Request for Information (RFI) conducted: No

Comparable vendor services have been used on previous contracts (CV): No

Leveraged Procurement Agreement (LPA): No

Complete Only if Contractor Responsible for Activity

Procurement Vehicle: Pre-qualified Master Agreement Contractor (PMAC)

If Other, specify: Click or tap here to enter text.

Contract Type**:** Time and Materials (T&M)

If Other, specify: Click or tap here to enter text.

==========

Select an Activity: Independent Verification and Validation (IV&V)

Responsible (answer Yes or No to all choices)

Agency/state entity staff: No

STP staff: No

CDT Project Approvals and Oversight staff: No

CA-PMO staff: No

DGS staff: No

Contractor: Yes

Other: Choose an item. Specify: Click or tap here to enter text.

When Needed (answer Yes or No to all choices.)

Stage 3 Solution Development: No

Stage 4 Project Readiness and Approval: No

After project is approved (after Stage 4 Project Readiness and Approval): Yes

Cost Estimate Verification (answer Yes or No to all choices)

Market research conducted (MR): No

Cost estimate provided (CE): No

CDT CE: No

DGS CE: No

Request for Information (RFI) conducted: No

Comparable vendor services have been used on previous contracts (CV): No

Leveraged Procurement Agreement (LPA): No

Complete Only if Contractor Responsible for Activity

Procurement Vehicle: Pre-qualified Master Agreement Contractor (PMAC)

If Other, specify: Click or tap here to enter text.

Contract Type: Time and Materials (T&M)

If Other, specify: Click or tap here to enter text.

DGS Delegated Purchasing Authority

Will any of the activities identified above result in a competitive or non-competitive solicitation that will be over the agency/state entity's DGS delegated purchasing authority? No

2.11.4 Enterprise Architecture Alignment:

The CDFA Alternative 1 solution, to procure the licenses and a System Integrator to implement a Salesforce solution in a SaaS environment, is in alignment with CDFA's Strategic Plan and the CDFA Technology Roadmap. For the CDFA Strategic Plan, this approach supports Goal Two: Maximize Resources, Goal Three: Education and Engagement, Goal Four: Customer Service, and Goal Five: Invest in Employee Development.

For the CDFA Technology Roadmap, Alternative 1 is the only solution that will support the CDFA Common Business Functions, as identified in the CDFA Business Capability Model, that can be used to support multiple programs in multiple Divisions across all CDFA, and not just for one Division. Additionally, this Alternative supports the need to create and develop a CDFA Master Data repository, as defined in the CDFA Technology Roadmap, which is required to achieve all areas identified in the CDFA Strategic Plan.

Alternative 1 supports CDFA's goals to provide a common enterprise-wide solution with an architecture that reduces custom development, outdated technologies, and ensures that CDFA staff technical expertise can be leveraged more broadly to support a reduced set of enterprise solutions. Alternative 1 solution approach leverages existing business and technical capabilities that align to CDFA's business and technical roadmaps and will also adhere to the goals set by the California Department of Technology's (CDT) and CDFA's strategic directions for any new application system.

The following capabilities are currently within CDFA's enterprise architecture and will be leveraged as enterprise standards:

- Public or Internal Portal/Website
- Identity and Access Management (i.e, two-step verification)

The following capabilities require development as AHFSS capabilities and will likely extend the existing CDFA enterprise architecture:

- Enterprise Content Management (ECM), for example:
- Workflow
- Forms and Document Management
- Work queues
- Business Rules Engine
- Automated Clearing House (ACH) payment system
- Contact Management System
- Business Intelligence and Data Warehousing
- Big Data Analytics
- Master Data Management

Information Technology Capability (Select Yes or No to identify capabilities that may be needed for this project.)

Public or Internal Portal/Website: Existing Enterprise Capability to be Leveraged

Public or Internal Mobile Application: Existing Enterprise Capability to be Leveraged

Existing Capability replaced with automated enterprise mobile application generation capability

Enterprise Service Bus: Existing Enterprise Capability to be Leveraged

Identity and Access Management: New Enterprise Capability Needed

Enterprise Content Management (including document scanning and eForms capabilities): New Enterprise Capability Needed

Business Intelligence and Data Warehousing: New Enterprise Capability Needed

Master Data Management: New Enterprise Capability Needed

Big Data Analytics: New Enterprise Capability Needed

2.11.5 Project Phases

This section describes the procurement and staffing strategy for PAL Stage 3 and Stage 4 activities.

Phase Title: S3 Solution Development

Description: Design the solution

Phase Deliverable:

- Requirements Elicitation/Requirements Traceability Matrix
- Technical Analysis
- Data Cleansing
- Solicitation document
- Evaluation methodology
- Cost methodology/model
- Scope of Work
- Updated Project Management Plans
- PAL Stage 3 preliminary assessment documents
- Updated Stage 2 Alternative Analysis
- RFP Development
- Complete S3SD
- Submit and CDT Review

Phase Title: S4 Project Readiness & Approval

Description: Conduct procurement

Phase Deliverable:

- Solicitation document approval

- Baseline schedule
- Release RFP #1
- Vendor Responses
- Review/Update RFP
- Release RFP #2
- Vendor Responses
- Vendor Selection
- Negotiations
- Complete S4PRA
- S4PRA Approval
- Contract Award

2.11.6 High Level Proposed Project Schedule

Proposed Project Planning Start Date: 1/1/2021

Proposed Project Planning End Date: 4/15/2024

Proposed Project Execution Start Date: 5/1/2024

Proposed Project Execution End Date: 4/30/2027

Activity Name: Stage 3 Solution Development

Start Date: 11/1/2022

End Date: 11/30/2023

Activity Name: Solicitation Development

Start Date: 11/1/2022

End Date: 9/29/2023

Activity Name: Solicitation Package Review

Start Date: 10/2/2023

End Date: 11/30/2023

Activity Name: Stage 4 Project Readiness and Approval

Start Date: 12/1/2023

End Date: 4/15/2024

Activity Name: Prepare Contract/Schedule

Start Date: 12/1/2/2023

End Date: 1/15/2024

Activity Name: Complete Readiness Assessment

Start Date: 1/15/2/2024

End Date: 3/1/2024

Activity Name: Review/Approval of Stage 4

Start Date: 3/1/2024

End Date: 4/15/2024

4/1/2024

2.11.7 Cost Summary

Total Proposed Planning Cost: $10,161,582

Total Proposed Project Cost: $45,309,602

Total Proposed Future Operations IT Staff & OE&E Cost (Continuing): $16,892,485

Total Proposed Annual Future Operations IT Cost (M&O): $5,171,192

2.12 Staffing Plan

2.12.1 CDFA Administrative Service Division and Office of Information Technology Services (OITS) are committing staff with extensive, high-level administrative experience (I.e., budgets, procurement, and contracts) to support the Stage 3 and Stage 4 phases. CDFA will utilize existing staff and may supplement with some vendor support for Stage 3 and Stage 4 development.

CDFA Contracts Manager

- In consultation with CDT/STP, develop the required solicitation documents
- Provide oversight of the contracts in accordance with the State Contracting Manual (SCM)
- With the ET2 Project Director and Project Manager, ensure CDFA review and approval of the contract is completed on schedule and in compliance with CDT/STP direction and the SCM
- Provide an interpretation of project contract to the Project Team
- Recommend course of action on contractual issues
- Participate in procurement meetings
- Escalate issues and concerns to the Project Manager
- Monitor, analyze, and mitigate ET2 Project Director and Project Manager assigned procurement-related risks and issues
- Communicate progress weekly to the ET2 Project Director and Project Manager

CDFA Contracts Analyst

- Assist in the development of required solicitation documents
- Review and provide feedback on solicitation documents
- Participate in procurement and contract meetings
- Facilitate the evaluation of supplier proposals/offers

CDT/STP Procurement Consultant

- Identify procurement approach and provide guidance/direction on the approach
- Review and provide feedback on CDFA developed solicitation documents
- Participate in procurement and contract meetings
- Facilitate the evaluation of supplier proposals/offers
- Identify issues, risks, and concerns to the ET2 Project Director and options to manage or mitigate

2.12.2 Business Program

CDFA's Animal Health and Food Safety (AHFSS) Division will provide program subject matter experts (Business SMEs) to the project who will work with the selected vendors, ET2 Project Director and Project Manager to implement the solution. This team will be familiar with the program's business needs and knowledgeable in the program's business rules and requirements. The AHFSS Division's Business Project Director, Program Management and the

CDFA Executive Team will assist in daily work reassignments and other workload assignments as needed to allow Business SMEs assigned to the project to fully focus their attention on project activities. For the project to be successful, it is required that staff prioritize assigned work and dedicate the time necessary to ensure its timely completion.

CDFA ET2 Executive Project Sponsor

- Champion, own and is accountable for the overall success of the project
- Provide executive support and strategic direction
- Set and prioritize project objectives
- Ensure project is adequately funded
- Ensure sustained buy-in at all levels
- Advocate for the project within the enterprise and with internal and external stakeholders
- Serve as the highest escalation for issues/decisions and ensure resources are available for risk management as needed
- Approve the Project Charter, Project Management Plan (PMP), and significant changes in scope, cost, or schedule
- Empower the ET2 Project Director and Project Manager with the appropriate authority
- Ensure an appropriately skilled Project Manager is selected for the project
- Provide final approval of project deliverables
- Chairs the Executive Steering Committee

Business Project Director

- Provide input and oversight of the project
- Ensure deliverables and functionality are achieved as defined in the Project Charter and subsequent project plans
- Coordinates and ensure that business organizational, policy, and procedure changes are implemented
- Facilitate sustained buy-in from all business resources
- Ensure timely availability of needed business resources

AHFSS (Business) Lead

- Act as an informal liaison between Product Owners and the Executive Project Sponsor and AHFSS Lead
- Proactively address business concerns before they become project impediments
- Ensure effective management of all business resources assigned to the project
- Escalate decisions and issues, as needed, to the CDFA ET2 Executive Project Sponsor
- Coordinate project related issues with other efforts
- Review and resolve significant issues that the Project Manager/Project Team cannot resolve

- Work directly with the Project Manager to ensure project management practices are being employed, including risk management as identified in the Risk Management Plan
- Review changes to the Project Schedule
- Communicate project status to the CDFA ET2 Executive Project Sponsor, Project Team, AHFSS staff, and external stakeholders in cooperation with the ET2 Project Director and Project Manager

CDFA Product Owner(s)

- Serve as the Product Owner of the respective program
- Represent the business to the vendor configuration team
- Manage the Product Backlog
- Provide guidance and support to the vendor team at all times

The Business SMEs selected from the AHFSS Programs will be dedicated as needed to the project and include the following resources:

- Product Owner and ET2 Business Project Director act as key decision makers on system functionality and will work closely with the PM and vendor team daily through the project phases.
- Business SMEs serve as:
    - Specialists and recommend decisions on issues concerning business objectives; develop and agree to the project scope; review deliverables and recommend approval of deliverables and project acceptance.
    - Trainers on use of the system and communicate all impacted changes of using the new system to trainees, how it affects project goals, and any other communication that will help the users with the transition to the new system and processes.
    - User acceptance testers and will develop test documentation and execute testing activities as prioritized by the Product Owners, and Project Manager and will support Go/No-Go production implementation decisions.

2.12.3 Information Technology

CDFA's Office of Information Technology (OITS) is responsible for ensuring compliance with the state information technology policy, maintenance and support of IT systems, implementation of new systems, new functionality and enhancements, and the safety and security of CDFA's information and information assets. CDFA's Agency Information Officer will provide overall direction for the ET2 Project.

OITS will provide Information Technology technical, Project Management, contract management and overall Project Approval Lifecycle expertise resources to support the Stage 3 and Stage 4 activities. OITS will utilize existing OITS staff augmented by consultant resources to support the ET2 PAL Stage 3 and 4 activities in the areas of Budget, Procurement, Information Architecture, Information Security, Project Management, and Application Architecture, Design and Development.

California Department of Technology

- Facilitate project planning through its PAL process to promote the greatest degree of project success
- Ensure compliance with information technology policies and standards through IT initiatives and oversight

California Department of Technology IT Project Oversight (ITPOC)

- Coordinate Department of Technology oversight activities
- Evaluate the Project to ensure that it is following a structured and defined approach
- Collaborate with the Project Director & Manager regarding project risks, and risk mitigation and contingency strategies as well as issue monitoring and resolution
- Provide feedback and direction as needed

CDFA Information Technology (IT) Sponsor

- Responsible for establishing the IT governance model
- Ensure sustained buy-in at all levels
- Advocate for the Project within the enterprise and with internal and external stakeholders
- Serve as an escalation point for IT risks, issues, etc.
- Keep informed about project status
- Serves as a voting member on the Executive Steering Committee

CDFA ET2 Project Director

- Ensure timely availability of needed information technology (IT) resources
- Facilitate sustained buy-in from all IT resources
- Ensure effective management of all IT resources assigned to the project
- Escalate decisions and issues, as needed, to the IT Project Sponsor
- Review and resolves significant IT issues that the Project Manager/Team cannot resolve
- Work directly with the Project Manager to ensure project management practices are being employed, including Risk Management as identified in the Risk Management Plan
- Assist in resolving risks and/or issues that have been escalated to this level
- Review changes to the Project Schedule
- Serve as the ET2 Project Change Control Manager and chairs the Change Control Board
- Communicate project status to external stakeholders in cooperation with the Business Project Director and CDFA Project Manager

CDFA ET2 Project Manager

- Plan the Project, including the creation and maintenance of the PMP with input from the Vendor/Integrator and the Project Director

- Ensure deliverables and functionality are achieved as defined in the governing documents
- Provide overall management of the project for CDFA including day-to-day responsibility for activities within each
- phase, and management of the schedule for the project
- Act as the principal interface to the contractor resource team
- Accountable to the ET2 Project Director and Executive Project Sponsor for all project related activities
- Plan, directs and oversee the day-to-day activities of the Project Team
- Develop and/or oversees the master project schedule and all other project work plans
- Serve as principal point of contact for control agencies, project contractors, and stakeholders
- Direct and manage project work in conformance with project scope, schedule, cost and quality and all other subsidiary plans incorporated into the overall PMP
- Accountable for the development, maintenance, and adherence to the Project Management Office (PMO) methodologies (e.g., processes, procedures, standards, and templates) that are in compliance with best practices and policies
- Communicate project progress weekly to the ET2 Project Director and Executive Project Sponsor
- Communicate project risk, issue, and status to the CDFA Executive Project Sponsor, CDFA IT Sponsor, Project Team, ET 2 Project Director, AHFSS staff, and external stakeholders
- Review deliverables and change requests and makes a recommendation to the CDFA ET 2 Project Director and Executive Project Sponsor

CDFA Information Security Officer (ISO)

- Coordinate CDFA information security activities
- Review and analyzes security and privacy risks as the project proceeds
- Validate the adequacy of proposed security controls
- Ensure the proposed system development and implementation adheres to State security policies and guidelines

CDFA Enterprise Architect

- Provide input to the overall architecture of the proposed solution
- Participate in the review of technical design documentation
- Oversee alignment of the solution with the Enterprise Architecture goals of CDFA
- Escalate issues and concerns to the CDFA Project Manager and/or the ET2 Project Director

IV&V Consultant

- Provide independent perspective for reviews and meetings
- Monitor project activities that may include, meeting participation, review deliverables, interview staff, requirements are being implemented correctly, etc.

- Evaluate project's adherence to industry standard Project Management methodologies
- Evaluate project Risk and Issue Management efforts
- Evaluate project progress towards completion of the project

CDFA Project Management Consultant (Assistant PM)

- Assist with management of overall management of the project for CDFA including day-to-day responsibility for activities within each phase, and management of the Project Schedule
- Assist with management and organization of state staff assignments
- Assist with oversight of the contractors
- Serve as the ET2 Risk Manager
- Serve and the ET2 Issue Manager
- Serve as the ET2 Test Manager
- Track and report status of deliverables
- Accountable to the CDFA Project Manager, ET2 Project Director, and Executive Project Sponsor for all assigned CDFA project management activities
- Provide guidance on Project Management Framework methodology and other industry standard project management techniques
- Lead the effort to identify, document, manage and track risks and risk mitigation/contingencies on the project, leading risk identification sessions, ensuring regular reviews and follows the risk escalation process
- Oversee and coordinates the Change Management process
- Identify resistance and performance gaps, and works to develop and implement corrective actions

CDFA IT Section Managers

- Work closely with the Project Manager, Product Owners, and vendor to address technical related issues
- Determine IT team assignments and oversees execution of IT assignments
- Help Desk network (Scott security/network) ITM Dev/System Arch, Marc Portfolio, Chris CIO

CDFA IT SMEs

- Provide technical expertise as needed during configuration analysis and testing activities
- Perform testing activities
- Review technical related deliverables and recommends approval/disapproval of such deliverables
- Provide input as requested to Go/No-Go production implementation decisions
- Work with the Business SMEs to identify legacy data requiring correction and determines the most efficient and effective approach to modifying said data
- Provide assistance to the Implementation Contractor in the development, testing, and deployment of the interface(s) between the solution and CDFA legacy systems

2.12.4 Testing

Testing is a critical part of the overarching SDLC methodology. In-depth, process driven, fully documented testing is required for the ET2 Project. The selected solution vendor will be expected to perform the requisite system testing (e.g., unit, integration, system integration, and load testing) and associated tasks (i.e., defect management, retest, etc.) to the satisfaction of CDFA.

CDFA's OITS will be responsible for managing the planning, coordinating, and executing of all phases of acceptance testing including regression and user acceptance testing (UAT) activities. AHFSS business subject matter experts (SMEs) will play an integral role in UAT planning and execution, which includes defining the testing plan/schedule, test scenarios, cases, expected outcomes, and data variations, creating and executing test scripts and retesting.

CDFA Test Manager and Product Owners

- Co-Lead the planning and execution of all User Acceptance Test (UAT) activities
- Develop and secures approval for the CDFA Test Management Plan
- Sets up and maintains the test artifact repository
- Train UAT SMEs team members on testing processes and procedures
- Work closely with the Project Manager, SMEs, and the Implementation Contractor to facilitate all UAT related activities and production implementation verifications

System Integrator Team

- Responsible for creating a Master Test Plan to guide testing activities within their scope
- Create User Stories, Test Cases and Test Scripts
- Performs unit testing, integration testing, system testing, security, regression, performance and load testing, and end-to-end testing
- Fully documents test activities and outcomes in the Project Repository

CDFA Business and IT SMEs

- Participate in requirements meetings and configuration analysis meetings/demonstrations in preparation for testing activities
- Perform preparation and execution of testing activities
- Perform production validation activities
- Prepare test scripts with a focus on area of expertise
- Serve as a Trainer for coworkers, if selected
- Document any issues identified in a defect and incident tracking tool

2.12.5 Data Conversion/Migration

Migration of large amounts of data has many inherited risks. Data conversion is a critical process in the migration of information from existing application system databases to new ones that often requires changes in data formats.

In preparation for the ET2 solicitation and project, CDFA plans to develop the data conversion requirements; update the current environment analysis, data profiles, and data quality assessment; document the business rules; complete the data element level data dictionary and cleanse the existing data. CDFA's Data Conversion and Migration Plan describes the strategies and objectives relevant to the conversion and migration of legacy data as well as the processes and procedures the CDFA Team plans to execute throughout the various phases of the ET2 Project to satisfy the conversion effort.

CDFA does not have the expertise or resources necessary to convert the existing ET data to the target solution(s). CDFA further believes an in-depth knowledge of the applications(s) and database(s) that will ultimately comprise the ET2 solution will be necessary to successful transform and load the legacy data. As such, it is CDFA's intent to contract the data conversion/migration effort to the selected solution provider, who is to complete the data conversion planning, design, development, and execution as a part of the ET2 project.

CDFA understand the selected solution provider will need support for this effort. CDFA intends to provide staff during the ET2 project to support ongoing data extraction, business rule interpretation, transformation rule development, and testing. CDFA will develop the detailed staffing plans during Stage 3 and 4 as the specific solution(s) are identified and project details evolve.

2.12.6 Training and Organizational Change Management

CDFA anticipates a "Train-the-Trainer" approach will be used during the project, with the System Integrator Team providing thorough system training to the Business Lead(s) and SMEs assigned to the project. The Business Lead(s) and SMEs will be responsible for developing training curriculum and documentation to support their training activities for users within their program area. System technical training and knowledge transfer will be provided by the Implementation Contractor and any applicable consultants to CDFA Office of Information Technology Services staff.

No significant business disruption or customer impact is expected to occur during the implementation of this project or staff training.

- System Integrator Team Provide thorough system functional training to the Business Lead(s) and SMEs assigned to the project
- Provide thorough system technical knowledge transfer to CDFA identified technical SMEs

2.12.7 Resource Capacity/Skills/Knowledge for Stage 3 Solution Development

CDFA, leveraging CDT/STP support, has experience in the procurement activities needed for the PAL Stage 3 Solution Development effort. Aside from leading the procurement phases of large projects with similar scope (e.g., Cal Cannabis Licensing and the Track-and-Trace solution), CDFA will assign dedicated resources to the project procurement effort who have extensive procurement knowledge and experience with the procurement methodologies.

CDFA will assign a dedicated team to focus on development of the detailed functional, non-functional, and project transition requirements for PAL Stage 3. Members of this team will have extensive business program knowledge and experience in detailed requirements definition, requirements management, and requirements traceability.

2.12.8 Project Management

2.12.8.1 Project Management Risk Assessment

Project Management Risk Score: 1.1

Attachment(s): 2.12.8.1 Project Management Risk Assessment.xlsx

2.12.8.2 Project Management Planning

The following project management plans are completed and available upon request.

Project Charter: Yes, draft prepared and reviewed.

Scope Management Plan: Yes, draft prepared and reviewed.

Risk Management Plan: Yes, draft prepared and reviewed.

Issue and Action Item Management Plan: Yes, draft prepared and reviewed.

Communication Management Plan: Yes, draft prepared and reviewed.

Schedule Management Plan: Yes, draft prepared and reviewed.

Human Resource Management Plan: Yes, Delivered as Included as a part of the Human Resource and Staffing Management Plan.

Staff Management Plan: Yes, Included as a part of the Human Resource and Staffing Management Plan.

Stakeholder Management Plan: Yes, draft prepared and reviewed.

Governance Plan: Yes, draft prepared and reviewed.

2.12.9 Organization Charts:

Attachment(s):

- 2.12.9 Proposed Project Organization Chart.pdf
- 2.12.9 Proposed Procurement Organization Chart.pdf
- 2.12.9 Impacted Programs Organization Chart
- 2.12.9 Information Technology Organization Chart.pdf
- 2.12.9 Agency-State Entity Organization Chart.pdf

2.13 Data Conversion/Migration

Identify the status of each of the following data conversion/migration activities. If Not Applicable, explain why the activity is not applicable or if Not Started, explain when the activity is planned to begin and anticipated to be completed:

Data Conversion/Migration Planning: Not Started. CDFA plans to prepare the data conversation/migration planning as input to the Stage 3 solicitation package.

Data Conversion/Migration Requirements: Not Started. CDFA plans to prepare the data conversation/migration requirements as input to the Stage 3 solicitation package.

Current Environment Analysis: In Progress. To be completed as part of Stage 3 solicitation package.

Data Profiling: In Progress. To be completed as part of Stage 3 solicitation package.

Data Quality Assessment: In Progress

Data Quality Business Rules: Not Started , CDFA plans to prepare the data quality business rules as input to the Stage 3 solicitation package

Data Dictionaries: In Progress. To be completed as part of Stage 3 solicitation package.

Data Cleansing and Correction: In Progress

Attachments:

- 2.13 Data Conversion-Migration Plan.docx
- 2.13 Data Dictionary.doc
- 2.13 ET Data Quality Analysis
- 2.13 ET Data Profiling
- 2.13 Current Environment Analysis

2.14 Financial Analysis Worksheets

Attachment(s): 2.14 Financial-Analysis-Worksheet.xlsx

Department of Technology Use Only

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