Stage 2 Alternatives Analysis

California Department of Technology, SIMM 19B.2 (Ver. 3.0.7, 02/28/2022)

2.1 General Information

1. **Agency or State Entity Name:** 4265 - Public Health, Department of

   If Agency/State entity is not in the list, enter here with the organization code.

   Click or tap here to enter text.

2. **Proposal Name:** California Immunization Registry 3 (CAIR3)

3. **Department of Technology Project Number (0000-000):** 4265-080

4. **S2AA Version Number:** Version 1

5. **CDT Billing Case Number:** CS0051963

   Don't have a Case Number? Click here to get one.

2.2 Submittal Information

1. **Contact Information**

   Contact Name: Tina Luu

   Contact Email: Tina.Luu@cdph.ca.gov

   Contact Phone: 1-279-667-0089

2. **Submission Type: New Submission**

   If Withdraw, select Reason: Choose an item.

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

   Sections Changed if an update or resubmission: (List all the sections that changed.)

   Click or tap here to enter text.

   Summary of Changes: (Summarize updates made.)

   Click or tap here to enter text.

3. **Attach Project Approval Executive Transmittal to your email submission.**

4. **Attach Procurement Assessment Form to your email submission.**

5. **Conditions from Stage 1 Approval (Enter any conditions from the Stage 1 Business Analysis approval letter issued by CDT or your AIO):**

There were no conditions resulting from the Stage 1 Approval.

2.3 Baseline Processes and Systems

1. **Current Business Environment (Describe the current business environment of which the effort will be understood and assessed in 500 words)**

The California Department of Public Health (CDPH) Division of Communicable Disease Control (DCDC) works to promptly identify, prevent, and control infectious diseases that pose a threat to public health, including emerging and re-emerging infectious diseases, vaccine-preventable agents, and pandemics. Within the DCDC is the Immunization Branch (IZB) whose mission is to provide leadership and support to public and private sector efforts to protect the population against vaccine-preventable diseases.

The IZB logs in and uses, is responsible for, and provides oversight for, CAIR2, California's statewide Immunization Information System (IIS). CAIR2 functions as an exchange of vaccination information among a wide range of stakeholders including provider clinics, schools, patients, and State and Federal agencies. CAIR2 captures, stores, tracks, and consolidates vaccination data from multiple sources and serves as an important tool in preventing and controlling vaccine preventable diseases and in increasing and sustaining vaccination coverage rates. The CAIR2 system supports the core IIS functions and capabilities as described in the Public Health Informatics Institute IIS Functional Model.

CDPH has implemented the IIS Functional Model through the various CAIR2 business processes. The current baseline business processes that are included in the scope of CAIR2 and to be addressed by this proposed CAIR3 are:

1. Registry Help Desk
2. Vaccines for Children Program
3. System Administration
4. Data Exchange and Interoperability

Each of these business processes is introduced below:

Business Process: Registry Help Desk

CAIR2 is a statewide computerized information system with over 30,000 provider clinics and 40,000 online users registered in the system. Users may from time-to-time encounter problems or need help with using the CAIR2 system. This may range from login issues, missing or incorrect data, or questions regarding duplicate patient records. The Registry Help Desk Call Center receives 500 – 1,000 requests per week to resolve these issues. The Help Desk Process is initiated by a user contacting the IZB via email, phone, or in the application. This will result in the

creation and tracking of a ticket, assignment of addressing the issue, escalation if needed, and ultimate ticket resolution and close-out.

Business Process: Vaccines for Children Program

The Vaccines for Children (VFC) program is a federally funded program that provides vaccines at no cost to providers who serve children who might not otherwise be vaccinated because of inability to pay. VFC covers a range of CDC approved vaccines such as Chickenpox, Flu, Polio, etc. The VFC process is initiated by a Provider logging into their respective MyVFCVaccines account to submit a vaccine order. This order is checked for errors then uploaded to the Vaccine Tracking System (VTrckS), a Federal CDC system for the purchasing and distribution of publicly-funded vaccines. VTrcKs will evaluate the order against specific CDC guidelines before processing the order for fulfillment to the Provider. Vaccine inventory management is the responsibility of the Provider.

Business Process: System Administration

The CAIR2 system requires administrative and technical support to keep the system updated for changing needs and smooth operations. This includes general “bug” fixes and enhancements, required changes to a new or existing vaccine schedule, and administration of CAIR related sites for CAIRWeb, Shots For School, EZIZ.org, and MyTurn.

Business Process: Data Exchange and Interoperability

The Data Exchange and Interoperability refers to the HL7 communications between CAIR and disparate health information systems. These are electronic interactions generated from Provider Electronic Health Record (EHR) systems and consist of two types of requests: Unsolicited Vaccine Update (VXU) and Query by Parameter (QBP). VXU are submission of vaccination dose. QBP are informational queries about patients. Both types of submissions come in from health information systems. They are delivered to a hosted Message Broker, Rhapsody, provided by Lyniate. This message broker ensures that all messages are processed, even if there is a downtime of the CAIR processing itself. If the service is offline for any reason, the messages will be held at Rhapsody for later delivery.

Tip: Current Environment costs will be asked for in the Financial Analysis Worksheet to be completed in Section 2.12.

Attach relevant documentation to email submission (i.e., business process, workflow, problem analysis, user/stakeholder list, research findings). If these types of documents are not available, please indicate “Not Available,” and explain the reason below:

Not available reason:

Current business processes are contained in the following attachment:

04_CDPH_CAIR3_S2AA_2.3.1 Current Business Environment_v1.0_2023.11.01.docx

2. Technical Context (Describe the technical environment of which the effort will be understood and assessed in 500 words)

CAIR2 is based on the Wisconsin Immunization Registry (WIR) software, a Java N-tier application with Apache Web servers, Oracle WebLogic Application and Oracle19c Database servers. The

servers utilize Red Hat 8 as the operating system. The Data Center location for these servers is Tenant Managed Services – Premium (TMS-P). The security access utilizes Org, username, and password. The interface is WebUI. The application is secured by Secure Sockets Layer (SSL) and user authentication to protect Personally Identifiable Information (PII) components. CAIR2 is rated high in importance to the CDPH mission.

The business processes supported by this technical environment and as described above in 2.3.1, are:

1. Registry Help Desk
2. Vaccines for Children Program
3. System Administration
4. Data Exchange and Interoperability

Business Process: Registry Help Desk

The Help Desk Process is initiated by a user contacting the IZB via email, phone, or in the application. This will result in the creation of a ticket. The ticketing system is a custom system. The primary technology is ASP and SQL Server. The system interface is WebUI. The Data Center location for these servers is TMS-P. The security access utilizes username and password. The type of information stored is provider information and ticket requests. The Registry Help Desk process is rated high in importance to the CDPH mission.

Business Process: Vaccines for Children Program

The Vaccines for Children Program is a custom system handling vaccine ordering and distribution to providers. The primary technology is PHP and MySQL. The system interface is WebUI. The Data Center location for these servers is University of California, Berkeley (UCB). The security access utilizes email and password (encrypted). The type of information stored is providers and vaccine information. This system does not store any private or protected information. The Vaccines for Children Program process is rated high in importance to the CDPH mission.

Business Process: System Administration

System Administration follows a defined practice for the testing and acceptance of bug fixes, enhancements, and vaccine schedule changes. Multiple system environments are utilized for Testing, Staging, Training, and Production. Automated regression testing does not exist. The vendor (Gainwell) performs functional testing, CDPH QA team will sign-off.

System administration is also responsible for CAIR related websites including CAIRWeb, Shots For School, EZIZ.org, and MyTurn. Related servers reside in ITSD and UCB data centers with combination of Windows, Linux, and MySQL platforms. The overall System Administration process is rated high in importance to the CDPH mission.

Business Process: Data Exchange and Interoperability

The Data Exchange and Interoperability is a custom system handling HL7 communications between CAIR2 and disparate health information systems. The primary technology is Java and WebSphere. The system interface utilizes HL7 formatted Simple Object Access Protocol (SOAP). The Data Center location for these servers is TMS-P. The security access utilizes Org, username, and password. The protected measures involve encrypted data in transport and at rest. Extensive

data exchange resources and documentation are available on the CDPH CAIR information website (link) for HL7 submitters. The Data Exchange and Interoperability process is rated high in importance to the CDPH mission.

For additional detail please refer to Figure 4 (CAIR2 Data Flow Diagram) and Figure 5 (As-Is Technical Architecture for CAIR2) contained in the attachment:

04_CDPH_CAIR3_S2AA_2.3.1 Current Business Environment_v1.0_2023.11.01.docx

Attach relevant documentation to email submission (i.e., logical system environment diagrams, system interactions, business rules, application flows, stakeholder information, data flow charts). If these types of documents are not available, please indicate "Not Available," and explain the reason below:

Not available reason:

3. **Data Management (Enter the information to indicate the data owner and custodian of the current system, if applicable.)**

   Data Owner Name: Dr. James Watt, MD, MPH

   Data Owner Title: Assistant Deputy Director

   Data Owner Business Program area: California Department of Public Health, Center for Infectious Diseases

   Data Custodian Name: Edwin Lieu

   Data Custodian Title: Branch Chief

   Data Custodian Technical area: California Department of Public Health, Information Technology Services Division, Application Technology Support Branch

   Security - Data Classification and Categorization Yes

   Security - Privacy Threshold & Impact Assessment Yes

4. **Existing Data Governance and Data**

For additional detail please refer to the following document:

06_CDPH_CAIR3_S2AA_2.3.4 Existing Data Governance and Data v1.0_2023.11.01.docx

a) Do you have existing data that must be migrated to your new solution?

Answer (Unknown, Yes, No): Yes

If data migration is required, please rate the quality of the data.

Select data quality rating: Some issues identified with the existing data.

b) Does the Agency/state entity have an established data governance body with well-defined roles and responsibilities to support data governance activities?

Answer (Unknown, Yes, No): Yes

If Yes, include the data governance organization chart as an attachment to your email submission.

c) Does the Agency/state entity have data governance policies (data policies, data standards, etc.) formally defined, documented, and implemented?

Answer (Unknown, Yes, No): Yes

If Yes, include the data governance policies as an attachment to your email submission.

d) Does the Agency/state entity have data security policies, standards, controls, and procedures formally defined, documented, and implemented?

Answer (Unknown, Yes, No): Yes

If Yes, attach the existing documented security policies, standards, and controls used to your email submission.

e) Does the Agency/state entity have user accessibility policies, standards, controls, and procedures formally defined, documented, and implemented?

Answer (Unknown, Yes, No): Yes

If Yes, attach the existing documented policies, accessibility governance plan, and standards used to the email submission.

5. Security Categorization Impact Table

Consult the SIMM 5305-A Information Security Program Management Standard - Security Categorization Impact Table.

Attach a table (in PDF) that categorizes and classifies the agency/state entity's information assets related to this effort (e.g., paper and electronic records, automated files, databases requiring appropriate protection from unauthorized use, access, disclosure, modification, loss, or deletion). Each information asset for which the agency/state entity has ownership responsibility shall be inventoried and identified.

07_CDPH_CAIR3_S2AA_2.3.5_Security_Categorization_Impact_Table_v1.0_2023.11.01.docx

6. Security Categorization Impact Table Summary

Consult the SIMM 5305-A Information Security Program Management Standard - Security Categorization Impact Table to provide potential impact levels of the following areas:

Confidentiality: High

Integrity: High

Availability: High

7. **Technical Complexity Score:** 2.6

   (Attach a SIMM Section 45 Appendix C with Business and Technical Complexity sections completed to the email submission.)

   08_CDPH_CAIR3_S2AA_2.3.7_ComplexityAssessment_v1.0_2023.11.01.xls

2.4 Requirements and Outcomes

At this time in the project planning process, requirements and outcomes should be documented and indicative of how the Agency/State Entity envisions the final solution. This shall be accomplished either in the form of mid-level requirements (predictive methodology)/business capabilities or representative epics and user stories (adaptive methodology) that will become part of the product backlog. The requirements or representative epics and user stories must tie back to the Objectives detailed in the Stage 1 Business Analysis. Regardless of which tool/method is used, an understanding of the following, at a minimum, must be clearly articulated:

- Functional requirements
- Expected user experience(s)
- Expected system outcome
- Expected business operations (e.g., How do you envision operations in the future?)
- Alignment to the project's objectives identified in Stage 1
- Product ownership (e.g., Who owns these requirements?); and
- Verification of need(s) fulfillment (e.g., How will success be measured?)

Tip: If providing requirements, the recommended range of requirements is between 50 and 100.

Attach Requirements and/or Outcomes narratives, mid-level requirements, and/or epics/user stories to submission email.

09_CDPH_CAIR3_S2AA_2.4_Requirements_Traceability_Matrix_v1.0_2023.11.01.xlsm

2.5 Assumptions and Constraints

Relevant assumptions and constraints help define boundaries and opportunities to shape the scope and complexity of the project.

Responses for this section are contained in the following attachment:

10_CDPH_CAIR3_S2AA_2.5 - 2.6 Assumptions Constraints Dependencies_V1.0_2023.11.01.docx

Assumption:

Description/Potential Impact: Click or tap here to enter text.

Constraint:

Description/Potential Impact: Click or tap here to enter text.

TIP: Copy and paste to add Assumptions/Constraints with Descriptions/Impacts as needed.

2.6 Dependencies

Dependencies are elements or relationships in a project reliant on something else occurring before the function, service, interface, task, or action can begin or continue.

Responses for this section are contained in the following attachment:

10_CDPH_CAIR3_S2AA_2.5 - 2.6 Assumptions Constraints Dependencies_V1.0_2023.11.01.docx

Dependency Element: Click or tap here to enter text.

Dependency Description: Click or tap here to enter text.

TIP: Copy and paste to add Dependency Elements and Descriptions as needed.

2.7 Market Research

Market Research (CDT Market Research Guidelines) determines whether products or services available in the marketplace can meet the business needs identified in this proposal. Market Research can also determine whether commercial practices regarding customizing/modifying products or tailoring services are available, or even necessary, to meet the business needs and objectives of the business.

Before undertaking a Market Research approach. Contact your PAO Manager to schedule a collaborative review to review planning to date and discuss the procurement approach.

1. **Project Management Methodology:** Adaptive Approach (Agile)
2. **Procurement approach recommended:** Modern RFP
3. **Market Research Approach**

   Provide a concise narrative description of the approach used to perform market research.

   The CAIR3 Market Research Approach is described in the following attachment:

   11_CDPH_CAIR3_S2AA_2.7 Market Research Report_v1.0_2023.11.01.pdf

   Click or tap here to enter text.

4. **Market Research Artifacts**

   Market Research Artifacts can include internet research, collaboration with other governmental entities, or other documentation.

   The CAIR3 Market Research Artifacts are included in the following attachment:

   11_CDPH_CAIR3_S2AA_2.7 Market Research Report_v1.0_2023.11.01.pdf

   Attach Market Research artifacts to the email submission.

2.8 Viable Alternative Solutions

The CDT expects Agencies/state entities to conduct a thorough analysis of all feasible alternatives that will meet the proposal's objectives and requirements. Agencies/state entities should provide at minimum the three (3) most viable solutions, one (1) of which could be leveraging and/or enhancing the existing solution (if applicable).

1. **Viable Alternative Solution #1**

Name: Modular Phased Transition to CAIR3

Description: This alternative solution involves an incremental, modular approach for the transition from CAIR2 to CAIR3. Over the life of the project, this will result in the complete conversion from CAIR2 to a new and improved CAIR3 system.

Beginning with a new central design, the solution will leverage the existing CAIR2 capabilities and transition these to the new technology platform over time. Core to this alternative is the development of an overall functional and technological design to replace CAIR2 but that considers the ability to continue to use CAIR2 for an interim period while replacing specific modules/functionality incrementally. These modules will include functionality such as Future of Public Health (e.g., patient matching and deduplication), and core IIS functionality such as mass vaccination and clinical decision support. Additionally, this alternative will leverage the development of functionality and components that can be shared across CDPH.

This alternative will utilize a modern, cloud-based, scalable, and flexible technology platform that best aligns with CDPH's strategic priorities (e.g., Future of Public Health). This will likely result in a hybrid cloud environment to address specific functionality. For example, an optimized transactional environment will run side-by-side with an optimized data warehouse. Many of the resulting CAIR3 capabilities and services, such as Provider Management and Patient Matching, can be shared across other CDPH applications. This alternative can also be designed to use other CDPH shared services such as the existing shared Message Broker (Rhapsody). Existing interfaces/integration points will be incorporated into this architecture (e.g., FHIR and HL7).

For this alternative, CDPH will issue a Request for Proposal that directs the vendors to architect a CAIR3 solution that meets the functional and technological requirements. Vendors are encouraged to propose modern cloud platforms and development and configuration processes (i.e., tools/configuration versus application coding). Vendors will be directed to utilize an Agile implementation approach that does not result in any loss of existing CAIR2 functionality and improvements to how the functionality is enabled.

Why is this a viable solution? Please explain:

It has been assessed that this alternative solution is not only viable but also best meets the needs of CAIR3. This determination was made based on the Market Research in Section 2.7 and internal project team discussions.

This alternative will be the least disruptive to users and stakeholders. This is due to the modular phased implementation which allows selected functionality to be implemented in a gradual fashion and will allow users to learn and absorb the new changes over time. This alternative does not

necessitate a single cutover point. This reduces implementation risk as CDPH has greater control over project scope, timeline, and resources.

Additionally, this alternative will provide the needed scalability, flexibility, stability, and security to meet California's unique needs, requirements, and data volumes, including FoPH alignment. The recent COVID-19 pandemic highlighted the need for support of high data volumes and new functionality demands. Transition to a more modern and robust technology platform that can accommodate new or changing requirements will provide CDPH the scalability, flexibility, stability, and security that are required.

This alternative will also allow the CAIR3 project team to select those technologies/features that are in alignment with CDPH's existing standards (e.g., Microsoft), as appropriate.

It was the expectation of CDPH that this alternative would result in a higher implementation cost compared to other viable alternative solutions and have a lengthier implementation timeline. However, this was not evident as the implementation cost and timeline received in the RFI responses are similar to the Viable Alternative Solution #2 (COTS/MOTS). With a phased approach, CDPH anticipates receiving prioritized incremental functionality benefits throughout the implementation.

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

Modify Statute/Policy/Regulations: No

Please Specify: Click or tap here to enter text.

Create a new IT system: Yes

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

Architecture Information

Business Function(s)/Process(es): Registry Help Desk

Business Function(s)/Process(es): Vaccine for Children Program

Business Function(s)/Process(es): System Administration

Business Function(s)/Process(es): Data Exchange and Interoperability

TIP: Copy and paste or click the + button in the lower right corner to add business processes with the same application, system, or component; COTS/Cloud Technology or custom solution; runtime environment; system interfaces, data center location; and security.

Conceptual Architecture

Attach a copy of the conceptual architecture to your email submission.

Conceptual Architecture for Alternative #1 and Alternative #2 are included in the following attachment:

12_CDPH_CAIR3_S2AA_Section 2.8 Conceptual_Architecture_v1.0_2023.11.01.docx

COTS/SaaS/Cloud Technology or Custom: Custom

Name/Primary Technology: This alternative will employ a traditional or low-code/no-code development and CDPH standard technology such as Microsoft Dynamics/Azure. Common shared capabilities, as envisioned in the Future of Public Health Initiative, such as Provider Management and Patient Matching will be used if available (or developed if needed) to be shared across the organization. Other existing CDPH shared technologies, such as the Message Broker (Rhapsody) will be utilized as available.

TIP: Copy and paste or click the + button in the lower right corner to add system software information if the application, system, or component uses additional system software.

Explain Existing System Interfaces:

Name of System Exchanging Data with CAIR3: Message Broker

Purpose/Description: To provide an enterprise-wide messaging standard for communicating and exchanging data between internal and external applications.

Entities Involved in Interface: Provider organizations and applications including, Mass Vax, MyTurn, and RIDE.

Name of System Exchanging Data with CAIR3: MyTurn

Purpose/Description: Platform that connects individuals/patients with tools and resources to receive vaccinations through a public portal and provides Clinic Managers (CMs) and Vaccine Administrators (VAs) the tools to manage vaccination clinics.

Entities Involved in Interface: External provider organizations, Local Health Jurisdictions and applications including: myCAvax, CAIR2, Healthy Futures/RIDE, Google Maps, Skedulo.

Name of System Exchanging Data with CAIR3: MyCAVax

Purpose/Description: A centralized state-wide vaccine management system enabling CDPH to manage and track health care provider enrollment, state-wide vaccine allocation, vaccine ordering, and distribution to Local Health Departments (LHD), Multi-County Entities (MCE), and Providers. myCAvax also enables CDPH to manage vaccine products, inventory and allocations, and manage, track, and report on quality assurance and site visit activities.

Entities Involved in Interface: Mulesoft, CAIR2, Snowflake, CDC (VtrckS, Data Lake, Shipping info), Department of Consumer Affairs, Smarty, and DocuSign.

Name of System Exchanging Data with CAIR3: Vital Records

Purpose/Description: Provides birth/death data used to update Immunization Registry Data.

Entities Involved in Interface: CAIR2 (Future IIS), IRIS (remediation).

Name of System Exchanging Data with CAIR3: Mass Vax

Purpose/Description: Provides a single page entry form for entering vaccinations to support stand up clinics and small providers.

Entities Involved in Interface: External providers via web interface, CAIR2.

Name of System Exchanging Data with CAIR3: CAIRWeb

Purpose/Description: Information website for CAIR, CAIR satellite applications (Account Enrollment, Account Update)

Entities Involved in Interface: CAIR2

Name of System Exchanging Data with CAIR3: Shots for Schools

Purpose/Description: Provides data entry system for schools and childcare facilities to annually report the immunization status of their enrollees.

Entities Involved in Interface: All public and private schools and childcare facilities, local health jurisdictions and internal CDPH employees.

Name of System Exchanging Data with CAIR3: SCRL (School Childcare Roster Lookup)

Purpose/Description: Tool used by schools and childcare sites to determine whether or not their students or prospective students meet all school/preschool immunization requirements for admission per California law. The SCRL Tool can also create/print “Blue Cards” (California School Immunization Records) when needed and it follows current Pre-K or K-12 immunization requirements.

Entities Involved in Interface: CAIR2, schools, school districts, and childcare sites.

Explain New System Interfaces: None

Data Center Location of the To-be Solution: Other

If Other, specify: CDPH Azure Cloud

Security

Access

Public: Yes

Internal State Staff: Yes

External State Staff: Yes

Other: Yes Specify: Providers, clinics, Local Health Departments

Type of Information (Select Yes or No for each to identify the type of information that requires protection. See the SAM Section 5305.5 for more information.)

Personal: Yes

Health: Yes

Tax: No

Financial: No

Legal: No

Confidential: Yes

Other: Yes Specify: Personally Identifiable Information, but no Protected Health Information

Protective Measures (Select Yes or No to identify the protective measures used to protect information.)

Technical Security: Yes

Physical Security: Yes

Backup and Recovery: Yes

Identity Authorization and Authentication: Yes

Other, specify: The above items to be included in Cloud Service Level Agreement

Total Viable Alternative #1 Solution Cost (copy from FAW – Executive Cost Summary tab, cells E7 through E11):

Planning Costs: $3,078,423

One-Time (Project) Costs: $33,698,042

Total Future Ops. IT Staff OE&E Costs: $16,207,466

Total Proposed Cost: $52,983,930

Annual Future Ops. Costs (M&O): $5,115,406

2. Viable Alternative Solution #2

Name: Commercial off the Shelf (COTS) / Modified off the Shelf (MOTS)

Description: This alternative solution involves the implementation of a commercially available solution offered by a vendor and used by many other states/jurisdictions. These types of solutions can often be implemented with minimal changes (i.e., “out of the box”) with configuration, or with some modifications to the core system (“MOTS”) that may or may not result in the ability to maintain standard vendor support.

Typically, COTS/MOTS systems are maintained as a “product” by the vendor who will offer updates and enhancements to their user base. Users often form a user’s group or consortium to communicate common needs and issues to the vendor for inclusion into the product.

If this alternative is selected as the preferred viable alternative, CDPH will issue a Request for Proposal for a COTS/MOTS solution that enables the project team to evaluate a vendor’s solution functionality against the CAIR3 requirements. Vendors will be directed to utilize an Agile implementation approach. Unmet requirements in each vendor’s solution, including FoPH, will be identified during the evaluation. These may need to be addressed through acceptance of the unmet requirement(s), solution modification, or business process changes.

Why is this a viable solution? Please explain:

COTS/MOTS are used by many other states/jurisdictions to meet their IIS needs. As such, it is a viable alternative solution for CDPH but has been assessed to be not as strong as viable solution #1 to fully meet the needs of CAIR3. This determination was made based on the Market Research in Section 2.7 and internal project team discussions.

A key benefit of this alternative is the implementation of pre-defined features and functionality that may only require configuration. This can lead to a faster implementation assuming a high degree of alignment between the solution’s functionality and architecture and existing CAIR3/CDPH business processes. If this alignment exists, the COTS/MOTS alternative could result in a less costly and lower risk solution implementation relative to the other viable alternative solutions (Note: This was not the case in the CAIR3 RFI responses).

Additionally, a COTS/MOTS vendor or product has many other users/jurisdictions with similar IIS requirements. The development and ongoing support of the solution is shared by the user community or consortium. Users have common needs that the COTS/MOTS vendor will be able to address through ongoing product development and enhancement.

While a COTS/MOTS is a viable alternative with many benefits, there are considerations that prevent it from being the preferred viable alternative solution. These include: an unproven ability to support California’s large data volumes and complexities, particularly during a large-scale event such as COVID-19; the embedded functionality in the COTS/MOTS may be more difficult to share or integrate (e.g. Patient Matching) across CDPH and therefore may be potentially more challenging to ensure alignment with FoPH; and a heavy reliance on the vendor to support California’s needs and requirements which may differ from the needs of the broader user base.

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

Modify Statute/Policy/Regulations: No

Please Specify: Click or tap here to enter text.

Create a new IT system: Yes

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

Architecture Information

Business Function(s)/Process(es): Registry Help Desk

Business Function(s)/Process(es): Vaccine for Children Program

Business Function(s)/Process(es): System Administration

Business Function(s)/Process(es): Data Exchange and Interoperability

TIP: Copy and paste or click the + button in the lower right corner to add business processes with the same application, system, or component; COTS/Cloud Technology or custom solution; runtime environment; system interfaces, data center location; and security.

Conceptual Architecture

Attach a copy of the conceptual architecture to your email submission.

Conceptual Architecture for Alternative #1 and Alternative #2 are included in the following attachment:

12_CDPH_CAIR3_S2AA_Section 2.8 Conceptual_Architecture_v1.0_2023.11.01.docx

COTS/SaaS/Cloud Technology or Custom: COTS/SaaS/Cloud Technology

Name/Primary Technology: COTS vendors employ various technologies, but all known possible COTS vendors are cloud-based. Some vendors included in this alternative solution employ a SaaS model (subscription-based). Efforts will be made to use CDPH shared technologies such as the Message Broker (Rhapsody).

TIP: Copy and paste or click the + button in the lower right corner to add system software information if the application, system, or component uses additional system software.

Explain Existing System Interfaces:

Name of System Exchanging Data with CAIR3: Message Broker

Purpose/Description: To provide an enterprise-wide messaging standard for communicating and exchanging data between internal and external applications.

Entities Involved in Interface: Provider organizations and applications including, Mass Vax, MyTurn, and RIDE.

Name of System Exchanging Data with CAIR3: MyTurn

Purpose/Description: Platform that connects individuals/patients with tools and resources to receive vaccinations through a public portal and provides Clinic Managers (CMs) and Vaccine Administrators (VAs) the tools to manage vaccination clinics.

Entities Involved in Interface: External provider organizations, Local Health Jurisdictions and applications including: myCAvax, CAIR2, Healthy Futures/RIDE, Google Maps, Skedulo.

Name of System Exchanging Data with CAIR3: MyCAVax

Purpose/Description: A centralized state-wide vaccine management system enabling CDPH to manage and track health care provider enrollment, state-wide vaccine allocation, vaccine ordering, and distribution to Local Health Departments (LHD), Multi-County Entities (MCE), and Providers. myCAvax also enables CDPH to manage vaccine products, inventory and allocations, and manage, track, and report on quality assurance and site visit activities.

Entities Involved in Interface: Mulesoft, CAIR2, Snowflake, CDC (VtrckS, Data Lake, Shipping info), Department of Consumer Affairs, Smarty, and DocuSign.

Name of System Exchanging Data with CAIR3: Vital Records

Purpose/Description: Provides birth/death data used to update Immunization Registry Data.

Entities Involved in Interface: CAIR2 (Future IIS), IRIS (remediation).

Name of System Exchanging Data with CAIR3: Mass Vax

Purpose/Description: Provides a single page entry form for entering vaccinations to support stand up clinics and small providers.

Entities Involved in Interface: External providers via web interface, CAIR2.

Name of System Exchanging Data with CAIR3: CAIRWeb

Purpose/Description: Information website for CAIR, CAIR satellite applications (Account Enrollment, Account Update).

Entities Involved in Interface: CAIR2.

Name of System Exchanging Data with CAIR3: Shots for Schools

Purpose/Description: Provides data entry system for schools and childcare facilities to annually report the immunization status of their enrollees.

Entities Involved in Interface: All public and private schools and childcare facilities, local health jurisdictions and internal CDPH employees.

Name of System Exchanging Data with CAIR3: SCRL (School Childcare Roster Lookup)

Purpose/Description: Tool used by schools and childcare sites to determine whether or not their students or prospective students meet all school/preschool immunization requirements for admission per California law. The SCRL Tool can also create/print “Blue Cards” (California School Immunization Records) when needed and it follows current Pre-K or K-12 immunization requirements.

Entities Involved in Interface: CAIR2, schools, school districts, and childcare sites.

Explain New System Interfaces: None

Data Center Location of the To-be Solution: Other

If Other, specify: TBD - Some vendors offer a subscription model, while others operate on an on-premise model. Data centers are to be determined.

Security

Access:

Public: Yes

Internal State Staff: Yes

External State Staff: Yes

Other: Yes Specify: Providers, clinics, Local Health Departments

Type of Information (Select Yes or No for each to identify the type of information that requires protection. See the SAM Section 5305.5 for more information.)

Personal: Yes

Health: Yes

Tax: No

Financial: No

Legal: No

Confidential: Yes

Other: Yes Specify: Personally Identifiable Information, but no Protected Health Information

Protective Measures (Select Yes or No to identify the protective measures used to protect information.)

Technical Security: Yes

Physical Security: Yes

Backup and Recovery: Yes

Identity Authorization and Authentication: Yes

Other, specify: The above items to be agreed on with the COTS vendor.

Total Viable Alternative #2 Solution Cost (copy from FAW – Summary tab, cell AL33):

Total Proposed Cost: $58,983,795

3. Viable Alternative Solution #3

Name: Enhance Current CAIR2 System

**After consultation with Agency and CDT, it has been determined that this alternative is not viable. However, the following description of this alternative has been included below but is no longer under consideration.

Description: This alternative solution involves identifying the known deficiencies/challenges of the current CAIR2 system and addressing these through various methods. These methods may include adding/developing functionality, changing/updating architecture or infrastructure, and increasing capacity to accommodate larger data volumes.

A key characteristic of this alternative that differentiates it from the other viable alternatives is that rather than replace or lose functionality in CAIR2, it builds on the underlying CAIR2 foundation (e.g., applications, databases, and interfaces) to enable CAIR2 to better support the future IIS and CDPH demands. The resulting system will be an improved CAIR2 by expanding the existing capabilities. CDPH has ownership of the CAIR2 source code.

Why is this a viable solution? Please explain:

Enhancement of the current CAIR2 system is a possible viable alternative, however it has been assessed to be not as strong as viable solution #1 or #2 to fully meet the needs of CAIR3. This determination was made based on CDPH's experiences with CAIR2, the Market Research in Section 2.7, and internal project team discussions.

While this alternative may address some of the CAIR2 shortcomings, it will present other considerations. It is possible that the identified changes may not achieve the needed system scalability and stability; the introduction of new modifications to an older system/platform may cause unintended issues; CDPH may still be constrained by the inflexible architecture (e.g., lack of configurable parameters and table-driven architecture); existing security risks will remain; and this alternative's alignment with FoPH presents challenges such as sharing of common capabilities.

No RFI responses were received that address this alternative.

Approach

Increase staff – new or existing capabilities: Choose Yes or No.

Modify the existing business process or create a new business process: Choose Yes or No.

Reduce the services or level of services provided: Choose Yes or No.

Utilize new or increased contracted services: Choose Yes or No.

Enhance the existing IT system: Choose Yes or No.

Modify Statute/Policy/Regulations: Choose Yes or No.

Please Specify: Click or tap here to enter text.

Create a new IT system: Choose Yes or No.

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

Architecture Information

Business Function(s)/Process(es): Registry Help Desk

Business Function(s)/Process(es): Vaccine for Children Program

Business Function(s)/Process(es): System Administration

Business Function(s)/Process(es): Data Exchange and Interoperability

TIP: Copy and paste or click the + button in the lower right corner to add business processes with the same application, system, or component; COTS/Cloud Technology or custom solution; runtime environment; system interfaces, data center location; and security.

Conceptual Architecture

Attach a copy of the conceptual architecture to your email submission.

COTS/SaaS/Cloud Technology or Custom: COTS/SaaS/Cloud Technology

Name/Primary Technology: CAIR2 is based on the Wisconsin Immunization Registry (WIR) software, a Java N-tier application with Apache Web servers, Oracle WebLogic Application and Oracle19c Database servers. The servers utilize Red Hat 8 as the operating system. The Data Center location for these servers is TMS-P.

TIP: Copy and paste or click the + button in the lower right corner to add system software information if the application, system, or component uses additional system software.

Explain Existing System Interfaces:

Name of System Exchanging Data with CAIR3: Message Broker

Purpose/Description: To provide an enterprise-wide messaging standard for communicating and exchanging data between internal and external applications.

Entities Involved in Interface: Provider organizations and applications including, Mass Vax, MyTurn, and RIDE.

Name of System Exchanging Data with CAIR3: MyTurn

Purpose/Description: Platform that connects individuals/patients with tools and resources to receive vaccinations through a public portal and provides Clinic Managers (CMs) and Vaccine Administrators (VAs) the tools to manage vaccination clinics.

Entities Involved in Interface: External provider organizations, Local Health Jurisdictions and applications including: myCAvax, CAIR2, Healthy Futures/RIDE, Google Maps, Skedulo.

Name of System Exchanging Data with CAIR3: MyCAVax

Purpose/Description: A centralized state-wide vaccine management system enabling CDPH to manage and track health care provider enrollment, state-wide vaccine allocation, vaccine ordering, and distribution to Local Health Departments (LHD), Multi-

County Entities (MCE), and Providers. myCAvax also enables CDPH to manage vaccine products, inventory and allocations, and manage, track, and report on quality assurance and site visit activities.

Entities Involved in Interface: Mulesoft, CAIR2, Snowflake, CDC (VtrckS, Data Lake, Shipping info), Department of Consumer Affairs, Smarty, and DocuSign.

Name of System Exchanging Data with CAIR3: Vital Records

Purpose/Description: Provides birth/death data used to update Immunization Registry Data.

Entities Involved in Interface: CAIR2 (Future IIS), IRIS (remediation).

Name of System Exchanging Data with CAIR3: Mass Vax

Purpose/Description: Provides a single page entry form for entering vaccinations to support stand up clinics and small providers.

Entities Involved in Interface: External providers via web interface, CAIR2.

Name of System Exchanging Data with CAIR3: CAIRWeb

Purpose/Description: Information website for CAIR, CAIR satellite applications (Account Enrollment, Account Update)

Entities Involved in Interface: CAIR2

Name of System Exchanging Data with CAIR3: Shots for Schools

Purpose/Description: Provides data entry system for schools and childcare facilities to annually report the immunization status of their enrollees.

Entities Involved in Interface: All public and private schools and childcare facilities, local health jurisdictions and internal CDPH employees.

Name of System Exchanging Data with CAIR3: SCRL (School Childcare Roster Lookup)

Purpose/Description: Tool used by schools and childcare sites to determine whether or not their students or prospective students meet all school/preschool immunization requirements for admission per California law. The SCRL Tool can also create/print “Blue Cards” (California School Immunization Records) when needed and it follows current Pre-K or K-12 immunization requirements.

Entities Involved in Interface: CAIR2, schools, school districts, and childcare sites.

Explain New System Interfaces: None

Data Center Location of the To-be Solution: Other

If Other, specify: The Data Center location is TMS-P.

Security

Access:

Public: Choose Yes or No.

Internal State Staff: Choose Yes or No.

External State Staff: Choose Yes or No.

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

Type of Information (Select Yes or No for each to identify the type of information that requires protection. See the SAM Section 5305.5 for more information.)

Personal: Choose Yes or No.

Health: Choose Yes or No.

Tax: Choose Yes or No.

Financial: Choose Yes or No.

Legal: Choose Yes or No.

Confidential: Choose Yes or No.

Other: Choose Yes or No. Specify:

Protective Measures (Select Yes or No to identify the protective measures used to protect information.)

Technical Security: Choose Yes or No.

Physical Security: Choose Yes or No.

Backup and Recovery: Choose Yes or No.

Identity Authorization and Authentication: Choose Yes or No.

Other, specify:

Total Viable Alternative #3 Solution Cost (copy from FAW – Summary tab, cell AL50):

Total Proposed Cost: Per previous agreement with Agency and CDT, there is no Alternative #3 Solution Cost included in the FAW.

2.9 Project Organization

Project planning includes the process of identifying how and when specific labor skill sets are needed to ensure that the proposed project has sufficient staff with the appropriate knowledge and experience by the time the project moves into execution. All staff identified in the following sections should be included in the Financial Analysis Worksheet to be completed in Section 2.12.

1. **Project Organization Chart:**

   Attach the Project Organization Chart to your email submission.

   The CAIR3 Project Organization Charts, as listed in the Stage 2 Preparation Instructions, are included in the following attachment:

13_CDPH_CAIR3_S2AA_2.9.1_Project_Organization_Chart_v1.0_2023-11.01.pdf

2. **Is the department running this project as a matrixed or projectized organization?**

   Matrixed

In each of the following sections, provide a concise description of the approach to staffing the proposed project including contingencies for business/program, IT, or administrative areas to maintain ongoing operations in conjunction with the proposed project.

1. **Administrative**

   Below is the CDPH approach to administrative staffing for the CAIR3 Project. CDPH has experienced staff and established departmental Procurement, Contract Management, and Budget resources in place.

   PROCUREMENT: The Purchasing, Solicitation, and Processing Services Section (PSPSS) within the Program Support Branch has staff who have experience managing a broad range of procurements and are knowledgeable about Public Contract Code (PCC) 6611. PSPSS staff and management have experience with procurements for complex IT projects involving multiple vendors and various vendor services.

   The project team will work with PSPSS staff on the CAIR3 procurements in a manner that they can integrate the needs of the project into their other workload. Each CAIR3 procurement will be planned, scheduled, and managed in alignment with the CAIR3 project schedule. Planned procurements are for DD&I, IV&V, and Project Management Support Services. There are no anticipated significant additional impacts to the operational workload of the procurement resources during CAIR3 PAL Stages 3 and 4 and throughout the CAIR3 Project.

   CONTRACT MANAGEMENT: The Operations Support Section within the Immunization Branch (IZB) has staff who have experience managing contracts similar to CAIR3. An experienced resource will be assigned as the CDPH Contract Manager to manage the CAIR3 Project contracts. This role will extend through CAIR3 PAL Stages 3 and 4 and the CAIR3 Project. Vendors contracted to provide services to the CAIR3 Project will each assign a resource to a corresponding contract manager role. There are no anticipated significant additional impacts to the operational workload of the contract management resources during CAIR3 PAL Stages 3 and 4 and throughout the CAIR3 Project.

   BUDGET: The CDPH Budget Office within the Financial Management Branch is staffed adequately and is experienced in supporting the budgetary needs of CDPH IT projects. The CAIR3 project requirements for budgetary support are able to be adequately performed in the normal operations of the CDPH Budget Office. There are no anticipated significant additional impacts to the operational workload of the Budget Office resources during CAIR3 PAL Stages 3 and 4 and throughout the CAIR3 Project.

2. Business Program

Within the Immunization Branch (IZB), the existing business program resources that will be impacted by CAIR3 are mostly University of California, San Francisco (UCSF) and Centers for Disease Control and Prevention (CDC) employees. CAIR2 is primarily supported by staff that are provided by UCSF and CDC under a cooperative interagency agreement. These resources are assigned to CDPH to support the day-to-day operations of CAIR2 and ultimately its replacement system, CAIR3. They provide IIS management and expertise to support the data analysis, technical, quality assurance, help desk, and training functions.

IZB understands the resource demands required for PAL Stages 3 and 4 and the implementation of CAIR3. IZB is currently staffed at a level to ensure ongoing business program objectives and operations are satisfied. CAIR3 will introduce additional workload, however it is anticipated IZB will be able to maintain ongoing program operations along with the proposed project workload. CAIR3 will rely on experienced vendors for DD&I, IV&V, and project management support services. The availability of these vendor resources will reduce the workload for business program staff. IZB staff involvement will be to manage and support the vendors throughout PAL Stages 3 and 4 and the implementation.

For the critical Product Owner role, IZB selected the Chief of the Registry and Immunization Rate Assessment Section who is highly knowledgeable about the current CAIR2 system and who participated in its implementation and ongoing support. CDPH identified over 16 Program SMEs to participate in the project. The SMEs understand the business program needs and are knowledgeable about specific IIS requirements and capabilities.

IZB does not anticipate the need for additional business program resources to meet the CAIR3 project needs. All required CAIR3 project business program resources will be redirected from existing IZB resources. The impact to IZB business operations from redirecting resources will be minimal.

3. Information Technology

Below is the CDPH approach to information technology staffing for the CAIR3 Project. The information technology resources will be selected from the following areas: Enterprise Portfolio Management Office (ePMO), Enterprise Architecture Section, Information Security Office, Application Technology and Support Branch, Enterprise Platform Services Branch, and Data Center Operations and Services Branch.

ePMO, which manages the Department's information technology projects, has established project management processes that follow the California Project Management Framework (CA-PMF) and has experienced project management staff who routinely work with CDPH technical staff and vendors. The involvement of ePMO results in the successful management of complex IT projects. ePMO is staffed to provide project management support and resources to multiple projects at any given time. If needed, the ePMO will utilize external vendors and CalHHS Office of Technology and Solutions Integration (OTSI) resources for project-specific roles to enable the ePMO to conduct their existing operational responsibilities.

ePMO currently has an initiative underway to standardize the PAL process across projects throughout the Department. This will enable better sharing of resources and more efficient PAL review.

ePMO will assign a Project Director and a Project Manager to oversee the CAIR3 Project. The Project Director will be redirected from existing ePMO staff. An external project management vendor will be contracted for the Project Manager role. The Project Director and Project Manager will be supported by CalHHS OTSI resources. The anticipated additional impacts to the operational workload of the ePMO resources during CAIR3 PAL Stages 3 and 4 and throughout the CAIR3 Project will be minimal. No additional ePMO personnel resources will be required due to CAIR3.

Enterprise Architecture, which serves as a technical subject matter expert and ensures CAIR3 is aligned with the Department's Strategic Map and IT Strategic Plan, has specialists with considerable experience in Enterprise Application Architecture. Enterprise Architecture will facilitate the use of sharable and reusable common services using Service Oriented Architecture (SOA) technologies and infrastructure. Enterprise Architecture will assign two resources for Stages 3 and 4 and throughout the CAIR3 Project.

The CAIR3 project team is working with the Enterprise Architecture resources to assess and incorporate specific Future of Public Health initiatives.

There are no anticipated significant additional impacts to the operational workload of the Enterprise Architecture resources during CAIR3 PAL Stages 3 and 4 and throughout the CAIR3 Project.

The Information Security Office is responsible for ensuring the balanced protection of the confidentiality, integrity, and availability of the Department's electronic and physical information resources, computing systems, and software applications. The Information Security Office has extensive experience in providing expertise and oversight for the security and privacy of CDPH information assets. The Information Security Office will assign one resource for Stages 3 and 4 and throughout the CAIR3 Project.

This role will be redirected from existing Information Security Office staff. There are no anticipated significant additional impacts to the operational workload of the Information Security Office resources during CAIR3 PAL Stages 3 and 4 and throughout the CAIR3 Project.

The Application Technology and Support Branch is responsible for implementing and supporting new products, develops solutions used at an enterprise scale, and supports systems integrations to advance public health objectives.

The Application Technology and Support Branch will:

- Assign four redirected resources for Stages 3 and 4 and throughout the CAIR3 Project

- Hire four new resources to be available at the beginning of the CAIR3 Project and continue for future Maintenance and Operations
- Hire nine new resources to be available for Stabilization and continue for future Maintenance and Operations

The above resources will address the impacts to the operational workload of the Application Technology and Support Branch during CAIR3 PAL Stages 3 and 4 and throughout the CAIR3 Project and continue for future Maintenance and Operations.

The Enterprise Platform Services Branch is responsible for developing enterprise features impacting all applications while leveraging low code application development technology to advance departmental goals of reuse and sustainability. Responsibilities include planning and preparing recommendations to strengthen the enterprise environment, reviewing code being developed, providing clear direction on best practices based on lessons learned, and promoting the creation and reuse of shared assets, culminating in faster time to market, internal skillset to support users and in line with CDPH security requirements.

The Enterprise Platform Services Branch will:

- Hire three new resources to be available at the beginning of the CAIR3 Project and continue for future Maintenance and Operations
- Assign two redirected resources to be available for Stabilization and continue for future Maintenance and Operations

The above resources will address the impacts to the operational workload of the Enterprise Platform Services Branch during the CAIR3 Project and continue for future Maintenance and Operations.

The Data Center Operations and Services Branch provides all CDPH programs and users with the information technology resources and services, including client services, server operation, system architecture, engineering services, enterprise services, emergency preparedness, and security operation.

The Data Center Operations and Services Branch will:

- Assign two redirected resources for Stages 3 and 4 and throughout the CAIR3 Project and continue for future Maintenance and Operations
- Hire one new resource to be available at the beginning of the CAIR3 Project and continue for future Maintenance and Operations

The above resources will address the impacts to the operational workload of the Data Center Operations and Services Branch during CAIR3 PAL Stages 3 and 4 and throughout the CAIR3 Project and continue for future Maintenance and Operations.

Consulting and Professional Services: External – In addition to State internal IT staff, CDPH will also use external vendor services, including solution vendor(s), project management support, and IV&V services. Use of vendor resources will minimize the impact of

CAIR3 to existing ITSD workload responsibilities. Vendors will collaborate with ITSD staff to deliver the required services, as described in the Statement of Work and Project Plan.

4. Testing

The approach for CAIR3 testing involves reliance on the DD&I vendor and internal CDPH Program and ITSD resources. The DD&I vendor will have primary responsibility for all testing of the new CAIR3 system. CDPH will be responsible for oversight and acceptance testing.

The DD&I vendor's testing responsibilities include:

- Development of Test Plan and Test Cases/Scripts
- Unit
- Integration
- Functional/User Story
- Data Conversion
- Performance
- Stress/Load
- Security
- Regression
- End-to-End/System
- Acceptance

The DD&I vendor will package and provide all test data, test scripts, test results, use cases, and test documentation to CDPH for subsequent reuse.

CDPH program and technical staff will work with the DD&I vendor throughout the testing process. This will involve working with the DD&I vendor to review test plans and test results, and to make sure any defects or issues are addressed appropriately. The Product Owner will approve test results based on defined acceptance criteria established in advance. The CAIR3 Product Owner, Program SMEs, and external stakeholders will serve as testers.

No testing activities will be performed in PAL Stages 3 and 4. Minimal internal CDPH resources may be required in these Stages for the development and evaluation of the RFP sections that involve testing considerations and activities.

Testing activities will be performed in the CAIR3 Project (implementation) Phase.

5. Data Conversion/Migration

CDPH's plan for CAIR3 data conversion/migration involves reliance on the DD&I vendor and internal CDPH Program and ITSD resources. The DD&I vendor will have primary responsibility for data extraction, cleanup, transformation, loading, and validation. CDPH will be responsible for oversight and data conversion/migration acceptance. It is expected that the DD&I vendor will be responsible for the data conversion/migration activities.

While the vendor will be responsible for the data conversion/migration, this effort will be a collaboration involving the vendor, the Product Owner, and CDPH Program and ITSD resources. Key external stakeholders such as Local Health Jurisdictions, health care providers, and health plans may participate in the data validation and confirmation activities.

Initial data analysis, planning, and cleansing activities will be performed in PAL Stages 3 and 4. Necessary data conversion/migration information will be included in the RFP for vendor evaluation.

The actual data conversion/migration activities will be performed in the CAIR3 Project (implementation) Phase.

6. Training

The DD&I vendor will have the primary responsibility to develop and conduct training activities and provide the necessary resource capacity and knowledge of the new system for the training. The DD&I vendor will be responsible for development of the CAIR3 Training Plan. CDPH be responsible for oversight of the Training Plan.

The CAIR3 Training Plan will consider the following:

- Implementation of a new system in a modular, incremental manner will allow flexibility for the timing and sequence of training which will help to minimize business disruption or impacts.
- Due to the minimal changes anticipated to the current organization/business processes, the level of training needs may not be significant.
- End user training will be the responsibility of the CDPH Field Services & Program Coordination Section.

The CAIR3 Training Plan will be comprehensive and include:

- Types of Training
    - Project Team - Agile Methodology
    - System/Technical
    - Reporting
    - Help Desk
    - Knowledge Transfer
    - End User
- Tools and Methodologies
    - Train the Trainer
    - Documentation
    - On-line tutorials

    - Classroom training
    - SharePoint
- Communication to inform and prepare stakeholders for training and use of new CAIR3 system.

No training activities will be performed in PAL Stages 3 and 4. Minimal internal CDPH resources may be required in these Stages for the development and evaluation of the RFP sections that involve training considerations and activities.

Training activities will be performed in the CAIR3 Project (implementation) Phase.

7. Organizational Change Management

Organization Change Management (OCM) is an essential activity to minimize any business disruption or impacts associated with the implementation of CAIR3. The DD&I vendor will have the primary responsibility to develop and conduct planned OCM activities and will provide the necessary resource capacity and knowledge for successful completion of these activities. CDPH will be responsible for oversight of the OCM activities. The Information & Education Section of the Immunization Branch will have a role in the OCM activities.

The DD&I vendor will work with CDPH to develop a comprehensive OCM Plan, which will:

- Communicate why the new system is being implemented.
- Ensure that impacted stakeholders are aware of the new system and key differences with CAIR2.
- Establish a framework for the adoption of the new system.

No OCM activities will be performed in PAL Stages 3 and 4. Minimal internal CDPH resources may be required in these Stages for the development and evaluation of the RFP sections that involve OCM considerations and activities.

OCM activities will be performed in the CAIR3 Project (implementation) Phase.

8. Resource Capacity/Skills/Knowledge for Stage 3 Solution Development

This narrative should include the experience level and quantity of procurement, contract management, and budget staff who will be responsible for the Stage 3 Solution Development.

Experienced program, technical, procurement, contract management, and budget resources will be assigned to support the Stage 3 solution development including requirements, evaluation criteria, and contract deliverables.

The CAIR2 program representatives assigned to the CAIR3 Stage 3 solicitation development have exceptionally deep knowledge of the needs and objectives of the organization to be addressed by the solution.

The ITSD technical representatives provide expertise in areas such as system architecture, development, and security. The ITSD ePMO staff assigned to the CAIR3 project are highly

experienced, routinely manage complex IT projects, and regularly participate in system procurements.

The CDPH Purchasing, Solicitation, and Processing Services Section (PSPSS) staff are highly proficient with state procurements, including the procurement vehicles and contract types anticipated for CAIR3. PSPSS staff are familiar with procurement protest types and Public Contract Code (PCC) 6611.

The CAIR3 Project Team will work with existing contract management and budget resources as needed for the Stage 3 solution development.

In addition to the above resources, the Stage 3 Procurement Team for the Primary Non-Delegated procurement (i.e., DD&I) will include representatives from CDT including the Statewide Technology Procurement (STP) Division and CalHHS. This team will utilize the State's Solicitation Builder tool to develop the primary solicitation as a Modern RFP.

Stage 3 includes solicitation development while Stage 4 includes bid evaluation and contract award. Planned procurements include:

Procurement	Primary/Ancillary	Delegated/Non-Delegated
DD&I	Primary	Non-delegated
IV&V	Ancillary	Non-delegated
Project Management Support Services (PMSS)	Ancillary	Delegation decision to be determined

CDPH understands that successful procurements require a significant amount of time from state staff participants. CDPH is prepared to participate fully, supported by the expertise and guidance of CDT STP Division staff, to complete the procurement process with necessary commitments of CDPH expert technical and business program resources. CDPH has a contract in place for vendor project management services to support the CAIR3 PAL Stages 3 & 4 procurement effort. This vendor has extensive experience with California's procurement processes and all stages of the PAL process, including prior completed CDPH technology procurement efforts.

The CDPH governance processes are mature and established. These include both project and procurement activities. The CAIR3 Governance Plan describes decision-making, escalation processes, and governance roles and responsibilities.

2.10 Project Planning

1. **Project Management Risk Assessment**

   Updated Project Management Risk Score: 0.7

   Attach Updated PM Risk Assessment to your email submission. SIMM Section 45A

   14_CDPH_CAIR3_S2AA_2.10.1_PM_Risk_Assessment_v1.0_2023.11.01.xlsx

2. **Project Charter**

   Is your project charter approved by the designated Agency/state entity authority and available for the Department of Technology to review? **Choose**: 'Yes,' 'No,' or 'Not Applicable.' If 'No' or 'Not Applicable,' provide the artifact status in the space provided.

   Project Charter (Approved): Yes

   Status: Click or tap here to enter text.

   Attach a copy of the Project Charter to your email submission.

   15_CDPH_CAIR3_S2AA_2.10.2_Project_Charter_v1.0_2023.11.02.docx

3. **Project Plans**

   Are the following project management plans or project artifacts approved by the designated Agency/state entity authority and available for the Department of Technology to review? **Choose**: 'Yes,' 'No,' or 'Not Applicable.' If 'No' or 'Not Applicable,' provide the artifact status in the space provided.

   Note: For Low to medium complexity and cost projects, discuss with your PAO manager the option of submitting a Master Project Management Plan in place of individual plans.

   Scope Management Plan (Approved): Yes

   Status: Click or tap here to enter text.

   Communication Management Plan (Approved): Yes

   Status: Click or tap here to enter text.

   Schedule Management Plan (Approved) : Yes

   Status: Click or tap here to enter text.

   Procurement Management Plan (Approved): Yes

   Status: Click or tap here to enter text.

   Requirements Management Plan (Approved): Yes

   Status: Click or tap here to enter text.

   Stakeholder Management Plan (Draft): Yes

Status: Click or tap here to enter text.

Governance Plan (Draft): Yes

Status: Click or tap here to enter text.

Contract Management Plan (Draft): Yes

Status: Click or tap here to enter text.

Resource Management Plan (Draft): Yes

Status: Click or tap here to enter text.

Change Control Management Plan (Draft): Yes

Status: Click or tap here to enter text.

Risk Management Plan (Draft + Risk Log): Yes

Status: Click or tap here to enter text.

Issue and Action Item Management Plan (Draft + Issue Log): Yes

Status: Click or tap here to enter text.

Cost Management Plan (Approved if planning BCP approved): Yes

Status: Click or tap here to enter text.

4. **Project Roadmap (High-Level)**

Attach a high-level Project Roadmap showing remainder of planning phase and transition into execution phase to the email submission.

29_CDPH_CAIR3_S2AA_2.10.4_High_Level_ Project_Roadmap_v1.0_2023.11.01.xlsx

a) Planning Start Date: 8/1/2021

b) Estimated Planning End Date: 12/31/2024

c) Estimated Project Start Date: 1/1/2025

d) Estimated Project End Date: 6/30/2026

2.11 Data Cleansing, Conversion, and Migration

If in Section 2.3 (above) the answer to the question "Do you have existing data that must be migrated to your new solution?" was marked "Yes," please complete this section.

The California Department of Technology recommends having a Data Consultant start data cleansing, conversion, and migration activities as soon as possible.

Identify the status of each of the following data activities. If "Not Applicable" is chosen, explain why the activity is not applicable or if "Not Started" is chosen, explain when the activity will start and its anticipated duration:

1. **Current Environment Analysis: In Progress**

   The Current Environment Analysis is documented in Section 2.3. The CAIR3 Project Team has created conceptual diagrams, collected existing data dictionaries, and performed a security categorization assessment of the current system and data assets. Any additional analysis may be performed by the selected DD&I vendor, as required, in the early phases of the CAIR3 implementation project to better understand the current environment and legacy data architecture.

   Expected Duration: Complete in early phases of the implementation project. Specific timeframes will be defined in the implementation project plan.

2. **Data Migration Plan: Not Started**

   The Data Migration Plan is highly dependent on the selected CAIR3 solution and vendor. The Data Migration Plan development will be included as an important component in the DD&I vendor contract. The Data Migration Plan will be developed in the early phases of the CAIR3 implementation project by the DD&I vendor with input and oversight provided by the CAIR3 Project Team.

   Expected Start and Duration: Start in early phases of the implementation project. Specific timeframes will be defined in the implementation project plan.

3. **Data Profiling: Not Started**

   Some data profiling activities such as identification of data sources, statistics, and descriptions of the data will be conducted and completed by the CAIR3 Project Team in Stage 3. This data profiling will be included in the Modern RFP to provide prospective vendors with relevant information on the existing data to enable vendors to prepare accurate proposals. Any additional data profiling may be performed by the DD&I vendor, as required, during the project execution.

   Expected Start and Duration: Preliminary data profiling will be performed by the CAIR3 Project Team in Stage 3 for inclusion in the DD&I RFP. Additional data profiling activities may be performed and will be defined in the Data Migration Plan.

4. **Data Cleansing and Correction: In Progress**

   Data cleansing and correction is an ongoing current activity as part of the data remediation efforts for CAIR2. These efforts will continue until CAIR3 is implemented. The selected DD&I vendor will be expected to work with CDPH to develop a plan to ensure the data being migrated to CAIR3 is complete and accurate.

   Expected Duration: Specific timeframes will be defined in the Data Migration Plan.

5. **Data Quality Assessment: In Progress**

   Many current technical and business data issues are known and understood due to the current ongoing CAIR2 data remediation efforts. The selected DD&I vendor will be expected to

perform a data quality assessment as part of the CAIR3 implementation to identify additional data quality issues that may impact migration as well as strategies for data enrichment.

Expected Duration: Specific timeframes will be defined in the Data Migration Plan.

6. **Data Quality Business Rules: In Progress**

   Other than the business rules contained in the Stage 2 Requirements Traceability Matrix, this activity has not been started. Additional data quality business rules will be identified and implemented during the CAIR3 implementation. The selected DD&I vendor will be expected to document a comprehensive set of business rules used for data conversion, data cleansing, and data validation.

   Expected Duration: The Data Quality Business Rules activities will be continued in the early phases of the CAIR3 implementation project. Specific timeframes will be defined in the Data Migration Plan.

7. **Data Dictionaries: In Progress**

   The CAIR3 Project Team has assembled current (CAIR2) data dictionaries. These CAIR2 data dictionaries will be leveraged by the selected DD&I vendor, who will be expected to develop the new CAIR3 data dictionaries including definitions, attributes, and relationships.

   Expected Duration: The development of CAIR3 data dictionaries will begin early in the implementation and may continue throughout the development project. Specific timeframes will be defined in the implementation project plan.

8. **Data Conversion/Migration Requirements: Not Started**

   The Data Conversion/Migration Requirements are highly dependent on the selected CAIR3 solution and vendor. The conditions that must be met to deem the data conversion/migration successful will be a component of the Data Migration Plan. The development of the Data Migration Plan will begin in the initial planning stages of the CAIR3 implementation project.

   Expected Start and Duration: The Data Conversion/Migration Requirements will be developed in the early phases of the CAIR3 implementation project and may continue throughout the development project. Specific timeframes will be defined in the Data Migration Plan and implementation project plan.

2.12 Financial Analysis Worksheets

Attach F.2 Financial Analysis Worksheet(s) to the email submission.

30_CDPH_CAIR3_S2AA_2.12_Financial_Analysis_Worksheet_v1.0_2023.11.01.xlsx

End of agency/state entity document.

Please ensure ADA compliance before submitting this document to CDT.

When ready, submit Stage 2 and all attachments in an email to ProjectOversight@state.ca.gov.

Department of Technology Use Only

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