

CCSF JUSTIS 5-Year Roadmap and Implementation Plan

Justice Tracking Information System (JUSTIS) Roadmap
City and County of San Francisco
Engagement 330049489



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Introduction

Gartner’s approach for developing the JUSTIS 5-Year Roadmap began with establishment of the baseline Current State Assessment. The Future State Vision was then built in collaboration with key agency and program stakeholders considering consensus needs, technology trends and Integrated Justice Information Systems (IJIS) leading practices.

Working with agency stakeholders and JUSTIS leadership, Gartner formulated initiatives designed to realize the Future State Vision and used prioritization and dependencies to create the Five Year Roadmap.

Figure 1: Major Activities and Outputs



The Roadmap defines the **schedule, initiatives, investment summary, and implementation plan** that will deliver the JUSTIS 5-Year Roadmap to enhance JUSTIS systems and provide 21st century capabilities to the Juvenile and Criminal Justice Agencies to help them achieve their missions and better serve the community.

The development was:

- Consensus driven and based on input from executives, and operational and technical stakeholders across CCSF
- In consideration of perspectives on best practices, technology trends and market capabilities.
- Inclusive of defined accountability among leadership and delivery groups with transparent links between business objectives and technology priorities.

Figure 2: Roadmap Development Process



Roadmap Schedule

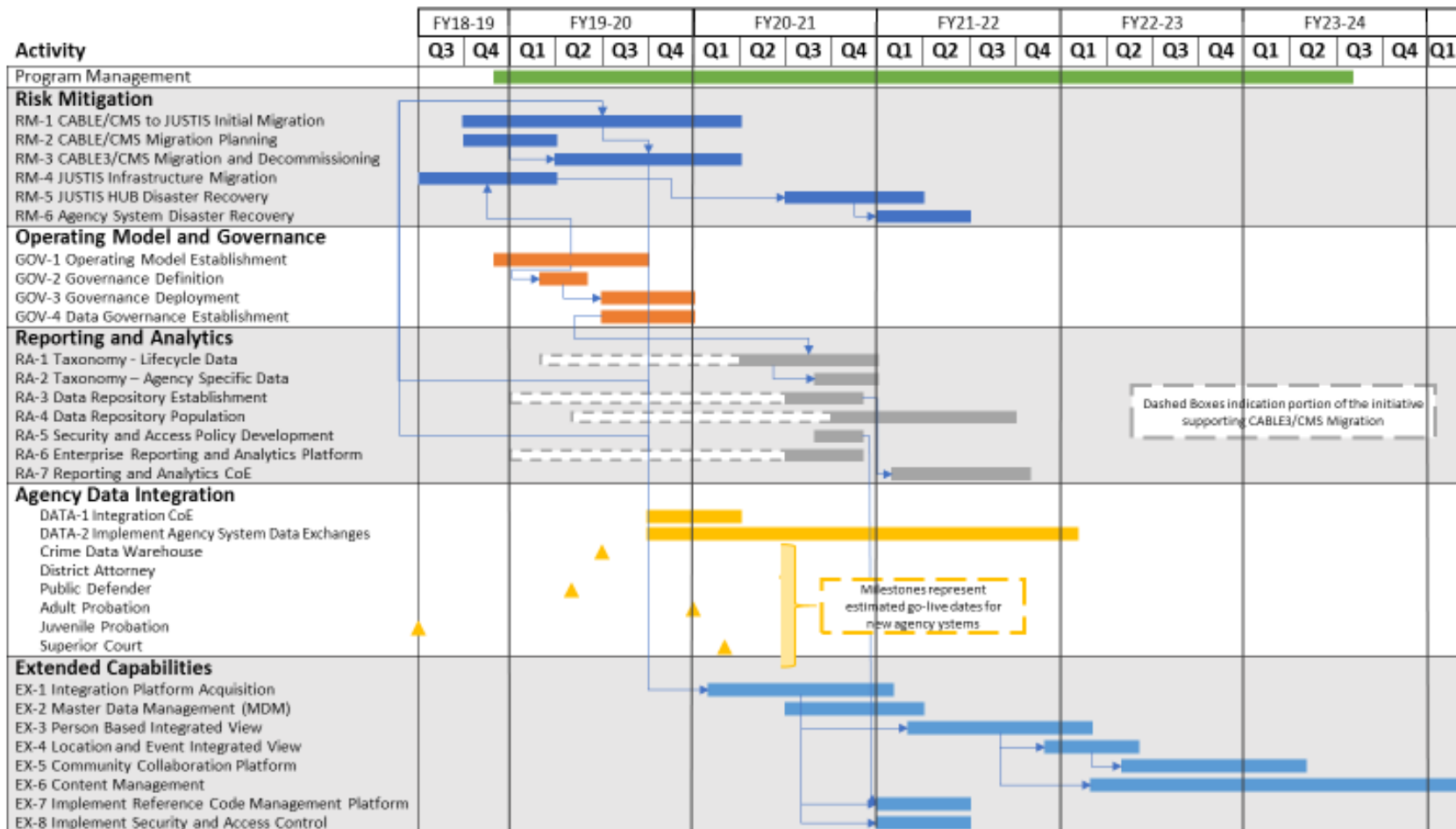
Roadmap initiatives were grouped according to the business capabilities or the primary benefit delivered.

Figure 3: Summary List of Initiatives

Roadmap Category	Initiative
Risk Management	RM-1 CABLE/CMS to JUSTIS Initial Migration
	RM-2 CABLE/CMS Migration Planning
	RM-3 CABLE3/CMS Migration and Decommissioning
	RM-4 JUSTIS Infrastructure Migration
	RM-5 JUSTIS HUB Disaster Recovery
	RM-6 Agency System Disaster Recovery
Operating Model and Governance	GOV-1 Operating Model Establishment
	GOV-2 Governance Definition
	GOV-3 Governance Deployment
	GOV-4 Data Governance Establishment
Reporting and Analytics	RA-1 Taxonomy - Lifecycle Data
	RA-2 Taxonomy – Agency Specific Data
	RA-3 Data Repository Establishment
	RA-4 Data Repository Population
	RA-5 Security and Access Policy Development
	RA-6 Enterprise Reporting and Analytics Platform
	RA-7 Reporting and Analytics CoE
Agency System Integration	DATA-1 Integration CoE
	DATA-2 Implement Agency CMS Data Exchanges
Extended Capabilities	EX-1 Integration Platform Acquisition
	EX-2 Master Data Management (MDM)
	EX-3 Person Based Integrated View
	EX-4 Location and Event Integrated View
	EX-5 Community Collaboration Platform
	EX-6 Content Management
	EX-7 Implement Reference Code Management Platform
	EX-8 Implement Security and Access Control

Please note that use of the term ‘Criminal Justice’ in this document is inclusive of Juvenile Justice.

Figure 4: High Level Project Schedule



Roadmap Initiative Descriptions

Roadmap Category: Risk Management

RM-1 CABLE3/CMS to JUSTIS Initial Migration

Description:

In parallel with comprehensive decommissioning planning described in initiative *RM-2 CABLE3/CMS Migration Planning*, initiate tasks to replace core CABLE3/CMS functions such as Level II data provisioning and rap sheet production.

This initiative will reduce the overall timeline and risk associated with CABLE3/CMS decommissioning.

Outcomes and Deliverables:

1. Design of select CABLE3/CMS functionality to be deployed in JUSTIS (Level II queries and replacement for the local criminal history query)
2. Implementation and testing of the above functionality along with transition to production and the decommissioning of the current CMS based transactions where appropriate
3. JUSTIS implements all operational and statistical reports (or their equivalent) currently provided to the agencies by CABLE3/CMS

Key Activities:

1. Confirm core CABLE3/CMS migration activities to be included. This list includes documentation of CABLE3/CMS calculation functions and replacement of Level II integration and rap sheet functionality
2. Confirm the architectural approach for replacement development efforts
3. Prepare a resourced workplan for the required activities
4. Prepare unit and integration test plans for core functions being replaced
5. Prepare specifications and develop/modify impacted JUSTIS modules
6. Test and Deploy on JUSTIS infrastructure
7. Decommission CABLE3/CMS functions if applicable (i.e., no remaining dependencies)

Primary Dependencies:

1. Initial iterations of initiatives RA-1 Taxonomy - Core Criminal Justice Lifecycle Data and RA-6 Enterprise Reporting and Analytics Platform
2. Participation of OIS and agency resources
3. Ability to acquire skilled exterior resources (e.g., APEX developers, business analysts, etc.) to supplement JUSTIS in a staff augmentation arrangement. This is critical, because the current JUSTIS resources will be needed across initiatives beyond this decommissioning

Assumptions:

1. Initial focus will be on defining architecture and statement of work for current functionality provided by Level II for law enforcement and downstream law enforcement partners with query capabilities, and on the design and development of a replacement local criminal history capabilities, both sourced from JUSTIS data
2. Lessons learned from *RM-1 CABLE3/CMS to JUSTIS Initial Migration* will inform the full migration plan
3. The Decommissioning will reference the list of CABLE3/CMS operational and statistical reports previously provided to JUSTIS by each agency. The list needs to be refreshed as the current information was provided two years ago
4. Functionality will be developed and deployed using current technology, unless migrating to alternate technologies will expedite the delivery of migrated functions or data sources

RM-2 CABLE3/CMS Migration Planning

Description:

Analyze the scope of data and functions provided to CCSF agencies today by CABLE3/CMS and develop plans for migrating such data and functions to JUSTIS or to agency systems. The migration plan would be developed to eliminate CCSF agency dependencies on CABLE3/CMS prior to the go-live of the Superior Court's C-Track case management system for criminal cases.

This initiative will retire risks associated with proprietary and dated CABLE3/CMS architecture and the dependency on the single vendor providing on-going application support.

Outcomes and Deliverables:

1. Detailed Decommissioning Migration Plan to replace CABLE3/CMS functionality and remove all dependencies by CCSF agencies on CABLE3/CMS
2. Recruiting resources for facilitating and development of the Detailed Decommissioning Migration Plan and its requirements and implementation of the plan

Key Activities:

1. Establish project governance and operating model
2. Conduct discovery and document the current high level data model and functions, and target technical architecture assumptions and dependencies
3. Create an inventory of CABLE3/CMS transactions, queries, reports, process dependencies and determine which of these functions need to be replaced by either JUSTIS or agency system functions
4. Determine the remediation approach with complexity estimates for each gap identified in the inventory
5. Create the plan for migrating or archiving any CABLE3/CMS data not already in JUSTIS
6. Prepare a resourcing strategy to allow the JUSTIS Technology Support Team to provide subject matter expertise and be supplemented contracted IT analysts and engineers
7. Prepare the CABLE3/CMS Decommissioning Migration Plan including timing and effort/cost estimates for each required activity

8. Create risk management and quality assurance baseline plans for the migration effort

Primary Dependencies:

1. Ability to acquire skilled exterior resources (e.g., APEX developers, business analysts, etc.) to supplement JUSTIS in a staff augmentation arrangement. This is critical, because the current JUSTIS resources will be needed across initiatives beyond this decommissioning

Assumptions:

1. The Decommissioning Plan will prescribe an iterative analysis and development approach for completing the migration

RM-3 CABLE3/CMS Migration and Decommissioning

Description:

Execute the tasks documented in the Decommissioning Migration Plan with completion on or before the C-Track go-live date. The initiative would include the migration of any CABLE3/CMS data not currently contained in JUSTIS.

Outcomes and Deliverables:

1. Specifications for migration of all remaining CCSF CABLE3/CMS functionality into JUSTIS or agency systems
2. Development and deployment of the migrated functionality
3. Dependency between JUSTIS and CABLE3/CMS removed
4. Decommissioned CABLE3/CMS

Key Activities:

1. Based on the CABLE3/CMS Decommissioning Migration Plan prepared in RM-2 CABLE3/CMS Migration Planning, build a staffing plan, establish a project team and mobilize resources
2. Execute the CABLE3/CMS decommission plan

Primary Dependencies:

1. RA-3 Data Repository Establishment
2. RA-4 Data Repository Population
3. RA-6 Enterprise Reporting and Analytics Platform
4. RM-2 CABLE3/CMS Migration Planning
5. Ability to acquire skilled exterior resources (e.g., APEX developers, business analysts, etc.) to supplement JUSTIS in a staff augmentation arrangement. This is critical, because the current JUSTIS resources will be needed across initiatives beyond this decommissioning

Assumptions:

1. Current earliest expected C-Track implementation data is assumed to be October 2019

RM-4 JUSTIS Infrastructure Migration

Description:

To allow JUSTIS resources to focus on projects and systems that will directly benefit the stakeholder agencies, responsibility for support and maintaining the commodity infrastructure components on which the JUSTIS hub and related applications run will be shifted from dedicated JUSTIS teams to DT teams which provide these types of services city-wide.

To affect this migration, roles and responsibilities between the JUSTIS Technology Support Team and the other DT teams with respect to access to the JUSTIS environments, communication procedures and response time, hardware/software monitoring, application/interface monitoring, patching, break/fix and other activities must be well documented along with appropriate and detailed service and support levels which are at least equal to the level of service and responsiveness provided today.

This initiative will also allow JUSTIS and agency systems to leverage disaster recovery, cybersecurity and other data center service management capabilities that are built into existing enterprise infrastructure services or which will be added in the future. This will save JUSTIS and/or the stakeholder agencies from future needs to invest in these capabilities.

Outcomes and Deliverables:

1. JUSTIS HUB and agency applications hosted on a resilient infrastructure inclusive of disaster recovery and cybersecurity protections
 - a. Full scope of agency application hosting to be defined
2. Shared City Data Center infrastructure components (located at DEM) architected and supported in a manner which is compliant with CJIS requirements (e.g., DT infrastructure team could pass a California DOJ CJIS compliance review). This generally means that data and access to the infrastructure is restricted and logged, hardware possibly is segregated/caged and all persons with logical or physical access to any of the infrastructure components have been subjected to criminal background checks as recommended by Cal DOJ
 - a. DOJ Security Requirements matrix: <https://clew.doj.ca.gov/publications/doj-matrix>
3. Same or similar levels of infrastructure services and responsiveness as agencies are accustomed to receiving from the JUSTIS infrastructure engineers today

Key Activities:

1. Determine agency and California DOJ CJIS requirements for hosting compliance of target infrastructure components outside of the existing JUSTIS eco-system and develop remediation plans for any noted gaps
2. Prepare DT, JUSTIS, and agency/system infrastructure plans in relation to Criminal Justice including the following:
 - a. Architecture (Cloud vs. On-Premise, Agency/JUSTIS specific vs. Shared City Infrastructure)
 - b. Roles and Responsibilities - RACI chart indicating roles and responsibilities of JUSTIS Technology Support Team, agency IT staff and DT infrastructure staff

- c. Availability, fault tolerance/redundancy, break/fix responsiveness and mean time to repair service levels
 - d. Disaster recovery, continuity of government and cybersecurity protection
 - e. Cal DOJ CJIS compliance criteria where required
 - f. Service hours (must be 7x24x365 and be responsive for high severity incidents which impact the processing of inmates or arrestees or which could endanger the public)
3. Assess JUSTIS agency requirements vs. existing DT infrastructure, staffing and processes and identify gaps. Remediate identified gaps (e.g., as required, conduct background checks, adjust staffing to provide for 7x24 monitoring and incident response, establish JUSTIS agency visibility into DT processes/tickets, install additional “caged” infrastructure hardware and software as required, etc.)
 4. Migrate existing JUSTIS workloads to the DT Shared Infrastructure
 5. Review conformance of established SLAs with agency/system requirements and develop remediation plans for any noted gaps
 6. Prepare target specifications and transition plans for systems or modules to be migrated
 7. Iteratively execute migration activities
 8. Update Operating Model processes to support continued operations and monitoring of migrated systems

Primary Dependencies:

1. GOV-1 Operating Model Establishment

Assumptions:

1. This migration is in process today. This initiative will provide additional governance and support for these activities, including a formal process for agencies to ensure that their specific needs are addressed
2. CJIS compliance will need to be addressed by DT as part of this initiative. The agencies will collectively agree on and document specific CJIS compliance levels that need to be achieved (e.g. separation of justice systems from other systems, background checks for personnel, cybersecurity controls, etc.). DT will be responsible for achieving compliance, and providing official documentation certifying CJIS compliance.
3. Current DT published services levels, actual support levels delivered, support/staffing practices and escalation procedures are not perceived to be acceptable by stakeholder agencies and may require adjustment. The justice enterprise in San Francisco is a 24/7 operation which is highly dependent of the current JUSTIS infrastructure/staff. Any interruption of these services, at any time of day, can be impactful on the criminal justice process putting the city or impacted residents at risk

RM-5 JUSTIS HUB Disaster Recovery

Description:

Prepare and implement a strategy for deploying and configuring the JUSTIS Integration Platform; Data Exchange Hub, Enterprise Reporting Platform, JUSTIS provided applications and related components

(e.g., hardware, infrastructure level software) to meet required uptime and recovery measures. This initiative will focus on the following:

- Availability, maximum time to repair (MTTR), return to operations (RTO) and recovery point (RPO) objectives for JUSTIS components
- Failure domain definitions to ensure that recovery systems and infrastructure are not within the same failure or disaster domain
- Evaluation and implementation of the infrastructure and architecture necessary to achieve the established objectives
- Plans for testing disaster recovery capabilities on regular basis not less than annually

This initiative will mitigate associated risks and allow agencies to rely upon JUSTIS as a foundation for core operational processes.

Outcomes and Deliverables:

1. Documented failure scenarios/domains along with availability and recovery objectives
2. Implemented systems recovery capabilities and business continuity management procedures for JUSTIS, including interfaces to other systems and synching with these systems
3. Documented and tested disaster recovery, partner agency system synchronization and fail-back procedures for all JUSTIS components
4. Deployed infrastructure improvements to implement the plan for all JUSTIS components
5. Funding or long term staffing/skills required to support DR/BCM incorporated into appropriate budgets

Key Activities:

1. Establish project governance and operating model
2. Establish and document availability and DR minimal thresholds for each major JUSTIS component and define failure domains
3. Evaluate options for achieving recovery metrics; prepare designs for selected infrastructure and architecture improvements implementing resultant changes or additions to current capabilities
4. Include required funding into future JUSTIS funding requests
5. Implement specified infrastructure or resource changes required to implement the disaster recovery capabilities
6. Develop the approach for regular testing of disaster recovery capabilities
7. Conduct the first failover test

Primary Dependencies:

1. N/A

Assumptions:

1. JUSTIS DR/BCM processes will align with other similar DT processes, capabilities and standards where possible

RM-6 Agency System Disaster Recovery

Description:

With the City's federated criminal justice operating model expected to result in some agency systems being hosted and maintained across separate data centers (e.g., DT, agency data centers, vendor data centers and in the "cloud") vs. the current practice of housing most systems within the JUSTIS infrastructure, the need for a criminal justice community wide disaster recovery strategy and plan/processes has become critical. This strategy needs to ensure that all components of the Justice IT ecosystem which are critical to continuity and integrity of day-to-day operations of the Court and the City/County criminal justice operations have a minimum level of disaster recovery capabilities whether operated by JUSTIS or by the stakeholder agencies. The strategy must further include a plan and processes for recovering and synchronizing all systems in the event of a failure of one or more of these systems.

This initiative will create minimum DR/BCM requirements and develop strategies and standards for architecting and deploying agency level systems to ensure those systems are aligned with the enterprise level criminal justice disaster recovery and business continuity strategy, comprised of *RM-5 JUSTIS HUB Disaster Recovery* and *RM-6 Agency System Disaster Recovery*. Such standards will apply whether agencies applications are deployed on premise in CCSF data centers or off-premise.

This initiative will mitigate continuity risks as overall criminal justice information technology becomes more federated with best of breed point solutions in each agency.

Outcomes and Deliverables:

1. Documented failure scenarios/domains along with minimum availability and recovery objectives to be applied to each system considered 'essential' to continuity of the criminal justice process in San Francisco
2. List of JUSTIS and agency stakeholder systems considered to be 'essential' (as defined above) along with the ability of each system to meet these objectives, and a list of infrastructure, operational, technical or planning/testing gaps which must be closed to make these systems sufficiently resilient
3. Overall IT Disaster Recovery Strategy and Plan designed to ensure the continuity of the criminal justice process including specific roles/responsibilities of JUSTIS, DT and stakeholder agencies with respect to funding, implementation and testing
4. DR/BCM oversight/auditing process and function responsible for measuring compliance and planning/coordinating DR procedures development and testing

Key Activities:

1. Establish project governance and operating model
2. Confirm applicability to agency level systems and DR standards of corresponding JUSTIS platform components (as established in the previous initiative); document any noted variations
3. Review and document cross-system availability and DR requirements
4. Develop the approach for regular testing of cross system disaster recovery capabilities
5. Prepare the enterprise level Criminal Justice IT DR Strategy and Plan

6. Update JUSTIS Operating Model processes (including SLAs) to include required elements of the DR Plan

Primary Dependencies:

1. RM-4 JUSTIS Infrastructure Migration
2. RM-5 JUSTIS HUB Disaster Recovery

Assumptions:

1. Agencies (or their vendors as applicable) will be responsible for sustaining compliance with the DR strategy of agency systems not centrally hosted

Roadmap Category: Operating Model and Governance

GOV-1 Operating Model Establishment

Description:

- The current JUSTIS governance processes have evolved over many years and is no longer effective:
 1. Regarded by key department heads and others as part of a failed “JUSTIS” project
 2. Tactical/operational vs. strategic focus
 3. Insufficient participation by senior level executives
 4. Does not provide governance/transparency over agency IT initiatives with cross-departmental impacts or over CABLE3/CMS which has its own separate governance mechanism

The Vision (described in the JUSTIS, Roadmap Future State Vision document) for the new JUSTIS governance program focuses on addressing key problems which can only be solved through improved interagency cooperation, data sharing and prioritization. With the goal of creating a single view of all interactions with criminal justice departments and social services agencies there will be improved focus on outcomes, quality of life and reducing homelessness, as well as preventing system driven operational mistakes that can threaten public safety and create liability for the City.

The new Governance Model requires coordination of Justice Agency strategies and transparency between the criminal justice departments to share data in a common way which will enable data integration between case management systems, tracking of charging decisions and sentencing outcomes and evaluating recidivism. Final decision making regarding priorities is vested in the Executive Committee which will focus on business process improvements and outcomes and facilitate transparency of JUSTIS and Agency IT plans to encourage consistency, efficiency, and alignment of technology investments across criminal justice agencies.

The first goal for the Governance Operating Model Initiative is to formalize the respective roles and responsibilities between the City Administrator’s Office, the JUSTIS Program Team and the Department of Technology. (See Initiative *GOV-2 Governance Definitions*) and the stakeholder agencies for the implementation and ongoing support of criminal justice IT capabilities serving criminal and juvenile justice operations.

Create and adopt a comprehensive RACI matrix which reflects the roles and responsibilities of the various entities involved in cross-departmental justice IT planning, implementation and support/maintenance activities which is consistent with an overall federated IT model designed to promote agency flexibility and control while also balancing the need for cooperation, transparency and progress toward agreed enterprise objectives.

Create comprehensive operating agreements which reflect roles documented in the RACI and further define more specific responsibilities such as:

- Duties and responsibilities of the Stakeholder Agencies, the City Administrator's Office, The JUSTIS Program Team and the Department of Technology
- Governance with decision authority and budget authority
- Service levels to be provided, including responsiveness, and availability
- Funding and staffing mechanisms for delivering on the above

With the completion of the JUSTIS project and the introduction of a Governance Charter and an Office to support the RoadMap, the recommendation is to rename various "JUSTIS" entities including but not limited to the JUSTIS council, the JUSTIS program and the JUSTIS Technology Support Team to reflect their new roles and missions. Where possible, retire the "JUSTIS" name to eliminate confusion with previously identified transformative initiatives. Consider retaining the JUSTIS name only for *RM-3 CABLE3/CMS Migration and Decommissioning*, which is focused on retiring CABLE3/CMS.. Conduct a concerted change management and communications campaign to "rebrand" the new vision for providing shared Criminal Justice IT capabilities (integration platform, enterprise level reporting, etc.) and associated governance entities, projects/programs and support groups.

Outcomes and Deliverables:

1. Agreed overall RACI matrix, including designating a single point of contact within the Office of Justice Technology for Criminal Justice Agencies.
2. Updated Operating Agreements (Service Level Agreements or Memorandum of Understanding) between the Department of Technology and the Stakeholder Agencies which guarantee a minimal level of service
3. Revised staffing/funding plans to support specified Roadmap Initiatives and the Governance Model.

Key Activities:

1. Define respective roles and responsibilities, as summarized in a RACI matrix, between the JUSTIS Technology Support Team, DT Infrastructure teams, stakeholder agencies, vendors and governance bodies for ongoing operations of shared criminal justice IT (integration platform, enterprise level reporting, etc.) At a minimum a role within the JUSTIS Technology Support Team must exist that acts as the single point of contact.
2. Create operational process and procedures for the JUSTIS Technology Support Team aligned with the RACI and input provided from other Roadmap initiatives
3. Create and/or update comprehensive operating agreements (including SLAs) between JUSTIS and DT and the stakeholder agencies that guarantee, at a minimum, similar service levels to what the Agencies received when JUSTIS was aligned with the City Administrators office.
4. Update the JUSTIS Technology Support Team organization structure, role descriptions and staffing requirements needed to support adopted SLAs and ensure JUSTIS resources are dedicated and work exclusively on JUSTIS agency projects.
5. Recruit resources to staff the new operations model, including both internal and external resources as needed

6. Create mechanisms for monitoring on-going SLA compliance and general program effectiveness
7. Rename various “JUSTIS” entities including but not limited to the JUSTIS Council, the JUSTIS program and the JUSTIS Technology Support Team to reflect new roles and missions of each
8. Create and execute a change management plan to communicate the new purpose, operating model and naming for the program

Primary Dependencies:

1. N/A

Assumptions:

1. Stakeholder agencies will continue to have responsibility for developing and evolving their own internal systems. Greater transparency of these initiatives, particularly initiative timing and cross department impacts will be achieved through improved governance processes

GOV-2 Governance Definitions

Description:

Design and implement the Justice IT Governance recommendations recommended by the JUSTIS Roadmap Project Future State Vision (published 2019). The main objectives of this governance structure are to:

- Provide an appropriate forum and mechanism for the Criminal Justice stakeholder agencies to coordinate and collaborate on departmental and community wide IT initiatives in a transparent and effective manner
- Prioritize and coordinate the implementation of all of the initiatives contained in this Roadmap, including collectively advocating for and managing funding for these and other community-wide technical initiatives which may be identified in the future (e.g., transparency portal, document management, digital evidence, etc.)
- Provide guidance and direction to the JUSTIS Technology Support team and or DT groups in collaboration with the City CIO, including holding these entities accountable for project, service, and operational delivery
- Develop and maintain a unified, community wide Justice IT strategy, which is inclusive of both agency funded and JUSTIS/DT/ADM funded initiatives and ensure that new initiatives (regardless of funding source) are consistent with the priorities and objectives contained with the overall strategy
- Monitor critical initiatives that have the impact on the all JUSTIS stakeholder agencies (JUSTIS, agency, etc.) on a regular basis to ensure operational stability and to provide transparency of the timing and expected impact of these initiatives to all stakeholder agencies

This initiative will document the specific areas to be governed, the specific governance bodies (including and overall decision making body and subordinate working groups) along with the associated decision/transparency rights, responsibilities, membership and process/cadence to be followed by each group. This governance capability will strengthen the federated nature of the Criminal Justice IT community and assure that JUSTIS investments remain consistent with the Roadmap and evolving agency priorities

especially given the high degree of interagency dependencies and change inherent in an integrated justice program.

Outcomes and Deliverables:

1. Enhanced governance design with meaningful and distinct working groups to support decision making for each of the JUSTIS 5 Year Roadmap initiatives, and sustainment of the JUSTIS program
2. Governance domain charters for the overall governance process including the top level decision making body and initial working groups to be chartered (e.g., Operational/CMS Decommissioning, Future Technology Planning, Data Sharing/Analytics, etc.)

Key Activities:

1. In coordination with the JUSTIS agencies, DT and the City Administrators office, finalize the governance model including; specific areas to be governed, the specific governance bodies (including and overall decision making body and subordinate working groups) along with the associated decision/ transparency rights, responsibilities, membership and process/cadence to be followed by each group
2. Develop charters for relevant workgroups, and identify individuals to participate in each group
3. Work with agencies, DT and City Administrator's Office to identify membership of top level governance body and working groups

Primary Dependencies:

1. N/A

Assumptions:

1. Development of this Initiative must be coordinated with Initiative 20: Operating Model Establishment

GOV-3 Governance Deployment

Description:

Deploy the enhanced JUSTIS governance for a limited set of domains and/or stakeholders and refine the governance charter as required to be responsive to overall CCSF (stakeholder agencies, DT, ADM, etc.) needs. This initiative will be designed incrementally to build agency adoption of the enhanced JUSTIS governance.

Initial decision domains to be prioritized for implementation will include:

1. JUSTIS Hub and CABLE3/CMS Operational Management (e.g., current primary focus on CABLE3/CMS Steering Committee and JUSTIS Working Group)
2. Strategic and Operational Data Taxonomy and Sharing
3. Strategic and Tactical IT Systems Planning/Strategy

4. CABLE3/CMS Decommissioning
5. Coordination of Agency CMS Projects with JUSTIS
6. Management/Oversight of other 2019 Roadmap Initiatives

Future decision domains for later implementation will include enterprise criminal justice IT architecture, enterprise reporting/dashboards, criminal justice process optimization (e.g. booking, court scheduling, charging, expungement, etc.), IT disaster recovery/business continuity, social/policy outcome metrics/measurement, budget/project priorities, performance metrics, cross-department policy development, community collaboration and expanded membership (e.g. Office of Police Oversight, DPH, HSH, etc.)

Outcomes and Deliverables:

1. Create the governance Charter between the City Administrator's Office and the Justice Agencies to establish the Justice Executive Committee and address the Admin Code JUSTIS reference.
2. Create the Memorandum of Understanding between the Justice Agencies and the Department of Technology for technology services.
3. Conduct an Executive Committee meeting to:
 - a. Formally adopt the 5 Year Roadmap
 - b. Adopt the Governance Charter
 - c. Review 2019/2020 budget priorities
 - d. Review the CMS budget and schedule
4. Prepare and execute a Governance Charter between the City Administrator and the Stakeholder Agencies.
5. Evaluate distinct and appropriate membership (primary and alternate), meeting frequency/cadence and priorities established for each of the governance bodies/working groups
6. Organize and institute the recommended governance workgroups to begin work on the Roadmap initiatives, specifically CMS.
7. Create and fill of Program Officer position. Governance decision making body and working groups meeting regularly and productively actively supporting the implementation of the Roadmap through efficient and collaborative decision making

Key Activities:

1. Institute select governance workgroups, review charter and identify/confirm participants from agencies, DT and others stakeholder organizations
2. Establish a 12 week pilot for the governance model with defined outcomes to ensure adoption and allow for refinements of the governance charter as required
3. Conduct training and familiarization training with the top-level governance body and facilitate the first 2-4 meetings to ensure past governance challenges are not replicated
4. Conduct training and familiarization training with 2-3 of the most critical working groups (likely operations, strategy and planning and data initiatives) and facilitate the first 2-4 meetings of each to ensure past governance challenges are not replicated.

5. Update the workgroup charter based on lessons learned from the 12 week pilot, and execute proposed changes to the group including; attendees, voting decision rights, scope and meeting cadence

Primary Dependencies:

1. GOV-2 Governance Definitions

Assumptions:

1. Many of the planned initiatives outlined in this Roadmap cannot be effectively chartered or implemented until the revised and expanded governance process is implemented
2. External assistance from the Executive Sponsor or from an external party (academic institution, contracted expert, consulting partner, etc.) may be required to organize and facilitate the first few rounds of governance planning and meetings to ensure that participants embrace the new model and do not fall back into previous patterns of attendance and participation

GOV-4 Data Governance Establishment

Description:

Establish and deploy a process and structure for management of the consistency, accessibility and accuracy of criminal justice data, including creation of a community wide data taxonomy, identification of data elements to be included in the JUSTIS Common Data Repository, guidelines/rule for accessing data elements cross agency , reference codes/tables (e.g., gender, race, ethnicity, crime classification, charges, dispositions, etc.), data quality standards, data quality review/correction processes and agency data stewardship responsibilities.

This initiative will ensure the integrity of JUSTIS data and continuous alignment with the Data Taxonomy (See Initiative *RA-1 Taxonomy - Core Criminal Justice Lifecycle Data* and *RA-2 Taxonomy – Agency Specific Data*) and applicable CCSF, state and federal standards.

Outcomes and Deliverables:

1. Data governance quality metrics and standards to be used to monitor compliance with data governance; corresponding compliance monitoring processes
2. Creation and adoption of master data management policies and processes to encourage consistency of core data (e.g., person attributes) across the justice agencies
3. Agency level data stewards (separate and distinct from current agency JUSTIS liaison role) identified, assigned actively participating in formal and informal data governance activities
4. Operational data governance actively addressing data quality issues and providing feedback on the ongoing evolution of the JUSTIS data models and taxonomy

Key Activities:

1. Establish project governance and operating model
2. Confirm and document data governance objectives and expected outcomes
3. Determine and prioritize data domains to be governed

4. Establish data governance and master data management processes, methods and data quality thresholds
5. Create a RACI matrix to assign responsibilities between the agencies and JUSTIS
6. Assign agency data stewards
7. Work with the agencies to determine pilot data domains based on completed portions of the taxonomy, business priorities and currency of other roadmap initiatives (e.g., CABLE3/CMS Decommissioning)
8. Institute data governance processes for pilot data domains
9. Refine data governance domains and extend to all criminal justice data as defined in the Common Taxonomy

Primary Dependencies:

1. N/A

Assumptions:

1. The data governance process will exist as a subordinate working group to the overall Criminal Justice IT governance process defined in Initiative *GOV-1 Operating Model Establishment and GOV-2 Governance Definitions*
2. The data steward role should be viewed as a business rather than technology role. In general the data stewards should be assigned from the groups responsible for using agency and cross agency data to create management level reporting. Certain agencies may require multiple data stewards, or the agency may need to establish a data steward working group or hierarchy within the agency
3. External assistance from the Executive Sponsor or from an external party (academic institution, CDO's office, contracted expert, consulting partner, etc.) may be required to organize and facilitate the first few rounds of data governance planning and meetings to ensure that participant effectively embrace the new model

Roadmap Category: Reporting and Analytics

RA-1 Taxonomy - Core Criminal Justice Lifecycle Data

Description:

Create a shared vocabulary and definitions for describing criminal justice events, their triggers and outcomes, entities and data elements, including potential translation mechanisms across systems or agencies. The taxonomy will be developed incrementally, with this initiative focused on defining core or “essential” data elements which comprise and are necessary to the community-wide criminal justice lifecycle. A subsequent initiative will focus data elements specific to particular agencies and to juvenile matters.

The common taxonomy will support:

1. Consistent reporting of key criminal justice measures and information across the criminal justice system
2. Improved capabilities to discover correlations and insights from whole person care reviews, conduct risk assessments, measure recidivism and monitor the effectiveness of various programs (diversion, treatment, alternative sentencing, charging thresholds and other multi system and multi-agency queries)
3. Ability to comprehensively analyze the impact of policy or statutory changes on criminal justice system performance metrics or outcomes.
4. Inform and support development of the interfaces between JUSTIS HUB and agencies’ systems

Outcomes and Deliverables:

1. Data element level, community-wide criminal justice data model, including implementation of an appropriate data modeling tool to contain this information, criminal justice events and their triggers and outcomes
2. Basic data naming and definitions required to support creation of replacement reports and other components associated with the CABLE3/CMS Decommissioning
3. Definitions and common terms to describe the core criminal justice lifecycle data (from the call for service to disposition and post-disposition actions)
4. Reference values which define allowable data values used for specific data attributes

Key Activities:

Planning Activities:

1. Establish project governance and operating model
2. Confirm tool(s) and conventions (e.g., DataSF standards, if applicable) for documenting the taxonomy
3. Identify and document applicable municipal, state and federal standards

Initial Iteration Activities:

4. Prepare basic taxonomy entries (data names and definitions) for JUSTIS attributes used in the CABLE3/CMS Decommissioning initiatives

Subsequent Iteration Activities:

5. Identify data elements captured or referenced during each event described in the ADM/JUSTIS Working Group defined Process Workflows
6. Prepare the taxonomy for Process Workflow data by performing the following:
 - a. Identify and conform definitions for data entities and attributes
 - b. Identify agencies and core systems that originate, modify or reference the attribute
 - c. Map inter-agency naming and definitional variations for the attribute
 - d. Identify applicable data domains (e.g., code tables) for the data attribute, and including standards where applicable
 - e. Identify core access control considerations (e.g., Welfare & Institutions Code, CORI, HIPPA)
7. Review and approve the taxonomy using the Data Governance process

Primary Dependencies:

1. GOV-4 Data Governance Establishment

Assumptions:

1. Taxonomy initiatives will build on the initial versions of the Process Workflows which have already been documented by the Office of the City Administrator (ADM) and the JUSTIS working group
2. The taxonomy will be consistent with state and federal reporting frameworks such as CA-NIBRS, NIEM, etc. except where compelling local needs require a variance and that variance is approved through the Data Governance process
3. Change management and regular reviews and updates of the taxonomy will be provided by the Data Governance process

RA-2 Taxonomy – Agency Specific Data

Description:

Create a shared vocabulary and definitions for describing criminal justice events and their triggers and outcomes, entities and data elements specific to particular agencies. The initial focus will be on agency specific data elements or entities which stakeholder agencies have requested be included in the JUSTIS Common Data repository, including Juvenile

The common taxonomy will support:

1. Consistent reporting of key criminal justice measures and information across the criminal justice system

2. Improved capabilities to discover correlations and insights from whole person care reviews, conduct risk assessments, measure recidivism and monitor the effectiveness of various programs (diversion, treatment, alternative sentencing, charging thresholds and other multi system and multi-agency queries)
3. Ability to comprehensively analyze the impact of policy or statutory changes on criminal justice system performance metrics or outcomes.
4. Inform and support development of the interfaces between JUSTIS HUB and agencies' systems

Outcomes and Deliverables:

1. Expanded version of community-wide data model created in Initiative *RA-1 Taxonomy - Core Criminal Justice Lifecycle Data*
2. Expanded taxonomy which includes agency specific criminal justice and juvenile data elements, events and their triggers and outcomes
3. Reference values which define the data values used for these specific data attributes

Key Activities:

1. Establish project governance and operating model
2. Working with each of the JUSTIS stakeholder agencies, identify data elements captured or referenced managed in stakeholder agency systems (and not already included in the previous Core Lifecycle Taxonomy)
3. Identify additional data elements needed to capture juvenile justice workflows
4. Prepare the taxonomy for the agency specific data by performing the following:
 - a. Identify and conform definitions for data entities and attributes
 - b. Identify agencies and core systems that originate, modify or reference the attribute
 - c. Map inter-agency naming and definitional variations for the attribute
 - d. Identify applicable data domains (e.g., code tables) for the data attribute, and including standards where applicable
 - e. Identify core access control considerations (e.g., CORI, HIPPA)
5. Review and approve the taxonomy using the Data Governance process

Primary Dependencies:

1. RA-1 Taxonomy - Core Criminal Justice Lifecycle Data
2. GOV-4 Data Governance Establishment

Assumptions:

1. Tool(s) and conventions (e.g., DataSF, municipal, state and federal standards, if applicable) established in the previous Core Lifecycle Taxonomy initiative will continue to be used for this Agency Specific Taxonomy initiative
2. Shared and agency specific data will be categorized based on current business processes. Intra or inter agency business process redesign is outside the scope of this initiative

3. Taxonomy initiatives will build on the initial versions of the Process Workflows which have already been documented by Office of the City Administrator (ADM) and the JUSTIS working group
4. The taxonomy will be consistent with state and federal reporting frameworks such as CA-NIBRS, NIEM, etc. except where compelling local needs require a variance and that variance is approved through the Data Governance process

RA-3 Data Repository Establishment

Description:

Using the JUSTIS Conceptual Data Architecture and the data models developed in Initiatives *RA-1 Taxonomy - Core Criminal Justice Lifecycle Data* and *RA-2 Taxonomy – Agency Specific Data* as a foundation, elaborate the model to create and implement the technical data schema for a shared repository of JUSTIS managed data.

The data repository will provide:

1. Ability to report on inter-agency criminal justice data from a single source
2. Reduce the need for complex and slow federated queries or multi-step data consolidation routines to produce reports or visualizations
3. A potential tool for managing archived or legacy data as agency system replacement projects proceed.

Outcomes and Deliverables:

1. Elaborated data model for common data stored in the JUSTIS Data Repository
2. Completed and deployed schema for the JUSTIS Data Repository
3. Data dictionary aligned with the JUSTIS Data Repository and Taxonomy

Key Activities:

1. Using the data taxonomy and conceptual data model, iteratively prepare the JUSTIS Data Repository logical data model
2. Review and approve logical and physical iterative data models with stakeholders
3. Create the JUSTIS Data Repository schema including keys, constraints and initial indices
4. Create initial data load scripts to populate the JUSTIS Data Repository with data from the existing JUSTIS database and other sources (if required)
5. Confirm the hosting location and capacity requirements
6. Deploy the JUSTIS Data Repository
7. Prepare the JUSTIS Data Repository data dictionary referencing the JUSTIS Data Taxonomy

Primary Dependencies:

1. RA-1 Taxonomy - Core Criminal Justice Lifecycle Data RA-4 Data Repository Population

Assumptions:

1. The JUSTIS Data Repository will be defined and deployed iteratively as required to support other dependent Roadmap initiatives. The initial iteration(s) of the JUSTIS Data Repository will support CMS Decommissioning initiatives with subsequent iterations deploying remaining data defined in the Common Taxonomy initiatives. Further updates to the schema will occur as agency system rollouts proceed; such updates will be managed by the Data Governance process
2. The JUSTIS Data Repository will be implemented such that one or more separate semantic or reporting layers (e.g., Tableau, Power BI, Looker, etc.) can be applied to the database(s). Establishment of these semantic and reporting layers is included in Initiative RA-6 Enterprise Reporting and Analytics Platform
3. The data model will maintain conformance with applicable standards (e.g., CA-NIBRS, NIEM) and other data collection and reporting models adopted by the City
4. The JUSTIS Data Repository will be architected to separate reporting data structures from data structures required to support JUSTIS managed transactions (i.e., OLTP)

RA-4 Data Repository Population

Description:

Create and implement data acquisition methods (e.g., ETL, message based) to populate the JUSTIS Common Data Repository on an on-going basis and as defined in the Common Data Taxonomy.

This initiative will:

1. Enable consistent and timely access to up-to-date criminal justice data regardless of the originating system.
2. Extend JUSTIS to include Juvenile data and transactions with required access controls.

Outcomes and Deliverables:

1. Development of data acquisition specifications and methods for each source system
2. Development of data acquisition specifications and methods to add juvenile justice data to the JUSTIS Common Data Repository.
3. Identification of the appropriate source system for each element, including the possibility that multiple sources may exist which need to be coordinated
4. Orchestration of JUSTIS data exchanges to include population of the JUSTIS Common Data Repository
5. Creation of Extract, Transform and Load (ETL) scripts or other technical methods to populate the JUSTIS Common Data Repository
6. Validation of the data by key business users at each of the agencies in accordance with a documented validation plan

Key Activities:

1. Establish project governance and operating model; assign resources

2. Obtain agreements (e.g., MOU) with source system agencies for data to be shared (if not already in place)
3. Establish data acquisition exception and verification processes; update Data Governance process charters and procedures as required
4. Confirm availability/selection of data acquisition tooling consistent with CCSF standards, the data management platform and the JUSTIS Integration Platform
5. Prepare data acquisition models with patterns for transactional (i.e., message) and batch data acquisition processes
6. Prepare Data Acquisition Specifications including detailed data mappings, validations and triggering events/frequency
7. Develop, test and deploy data acquisition modules as per the Data Acquisition Specifications

Primary Dependencies:

1. RA-1 Taxonomy - Core Criminal Justice Lifecycle Data
2. RA-3 Data Repository Establishment
3. GOV-4 Data Governance Establishment

Assumptions:

1. Where possible (technically feasible and cost effective) data population and replication schemes should be as close to near real-time as possible and should not exceed 24 hour cycles
2. It may be necessary to coordinate this initiative with the new agency system rollouts 16: *Integration Platform Implementation - Data Exchanges – Agency System Replacements* and possibly with the JUSTIS Hub modernization initiative *EX-1 Integration Platform Acquisition*

RA-5 Security and Access Policy Development

Description:

Refine Identity Access Management (IAM) and data security policies aligned with evolved data sharing capabilities specified in the JUSTIS roadmap.

This initiative will provide assurance to agencies that access to agency data stored in the new JUSTIS Common Data Repository is properly secured, and that sustaining processes are in place to audit compliance and manage potential impacts on access control from on-going changes in JUSTIS and agency systems.

Outcomes and Deliverables:

1. IAM and Data Security roles and policies documented in sufficient detail to support security requirements for the reporting platform, integrated view portals, and community collaboration platforms. The policy should include overall access to the servers and environments hosting criminal justice data.

Key Activities:

1. Confirm and project governance with sufficient authority to make data security and privacy recommendations. As required, make adjustment to JUSTIS governance chartering documents (currently admin code) to enable these changes
2. Review applicable external access, security and privacy constraints and considerations including statutes and CCSF and agency level standards and policies
3. Review current MOUs and other agreements regarding data sharing; identify anticipated data sharing defined in the Data Taxonomy but not covered by existing agreements
4. In collaboration with agencies outline and gain approval for policies and procedures for agencies to authorize or restrict (collectively or individually) the inter-agency sharing of source data for which the agencies are the system of record
5. Prepare revised data access, security and privacy policies
6. Review updated access, security and privacy with legal counsel
7. Define security roles and privileges corresponding to the revised policies
8. Define processes for access and security compliance monitoring and auditing
9. Review and approve revised policies with JUSTIS stakeholders
10. Prepare technical requirements for supporting the implementation of access and security policies in the JUSTIS Integration and Reporting platforms

Primary Dependencies:

1. RA-1 Taxonomy - Core Criminal Justice Lifecycle Data
2. GOV-4 Data Governance Establishment

Assumptions:

1. N/A

RA-6 Enterprise Reporting and Analytics Platform

Description:

Adopt and implement a shared JUSTIS level reporting and data visualization platform. This tool would be used by JUSTIS Technical Support Team staff and be available to JUSTIS agencies for self-service report development. Based on tooling already in use and planned for use in the CABLE/CMS decommissioning, PowerBI will be one of the primary reporting and visualization platforms. Other platforms may be implemented based on agency needs and funding contributions.

The platform will provide:

1. Ability to report and prepare visualizations on shared information in the JUSTIS Data Model without the need to license or connect additional reporting tools
2. Improved efficiencies and consistency through the ability to share complete reports or report components among the agencies
3. Use of a familiar, mainstream reporting tool to encourage self-service report/query creations

4. Increased pool of available report development resources
5. Consistent usage and traceability of data elements across different reports/queries
6. Consistent application of agency and role specific report/query security and access controls

Outcomes and Deliverables:

1. Implemented reporting and analytics tooling configured to utilize the JUSTIS Common Data Repository and corresponding metadata and access control policies
2. **3-5** high priority cross-department dashboards designed, implemented and validated with agency stakeholders. These demonstration dashboards would serve as models for development of subsequent dashboards in collaboration with the JUSTIS Data Center of Excellence
3. **10-12** representative critical reports developed and validated with agency stakeholders, including several currently provided through CABLE3/CMS to demonstrate comparability of results. These demonstration reports would serve as models for development of subsequent reports as part of the CABLE3/CMS Decommissioning initiatives and in collaboration with the JUSTIS Data Center of Excellence

Key Activities:

1. Establish project governance and operating model
2. Confirm product licensing availability and restrictions
3. Establish data access and report development common patterns
4. Establish access protocols for JUSTIS Technical Support Team and agency users; update Data Governance process charters and procedures as required
5. Configure and establish PowerBI connections to the JUSTIS Common Data Repository, including user access controls
6. Define and implement initial semantic layer(s) to support reporting needs including demonstration dashboards and critical reports (e.g., MIR replacements associated with the CMS Decommission)
7. Define requirements for demonstration cross-department dashboards and critical reports
8. Develop demonstration dashboards and reports and validate with stakeholders for accuracy and usability

Primary Dependencies:

1. RA-1 Taxonomy - Core Criminal Justice Lifecycle Data
2. RA-3 Data Repository Establishment
3. GOV-4 Data Governance Establishment

Assumptions:

1. PowerBI will be the initial reporting and analytics platform implemented, given the familiarity agencies have with the software and a favorable licensing regime

RA-7 Reporting and Analytics CoE

Description:

Establish consultative capabilities within the current JUSTIS Technical Support Team to enhance users' understanding of shared criminal justice data, provide support for connecting agency reporting and analytics tools to the JUSTIS Common Data Repository, and support agencies in the use of the Enterprise Reporting and Analytics Platform.

The Center of Excellence will:

1. Provide consistent interpretation of criminal justice data and associated data relationships across stakeholder agencies
2. Improve the success of agency self-service reporting and help maintain data access controls, by providing training to the agencies SME(s) and on-going support
3. Ensure the accuracy of agency self-service reporting
4. Create complex queries and reports which may be beyond the capabilities of operations/business focused agency staff
5. Reduce the potential for performance degradation resulting from improperly formed queries. Build and maintain reports and queries separate from production Enterprise Reporting and Analytics Platform infrastructure as required

Outcomes and Deliverables:

1. Operational charter, including defined service levels, for the Data Center of Excellence
2. Creation of role, skills and job descriptions for CoE analyst
3. Recruiting or assignment of resources to the Center consistent with the role descriptions and the defined service levels

Key Activities:

1. Establish project governance and operating model and engage the Data Initiatives Working Group to serve as the steering committee for this effort
2. Prepare the CoE operational charter which defines the responsibilities for providing reporting and analytics, general data usage and integration services and associated service levels
3. Develop a RACI which defines the roles of CoE resources vs. agency report/dashboard developers and users; as necessary, define a chargeback model for some or all COE services
4. Develop a CoE organizational design including: key capabilities, organizational structure, operations model, role descriptions and resource requirements
5. Assign JUSTIS Technology Support Team, other DT resources and agency level resources to CoE positions
6. Launch the CoE, conduct semi-annual assessments of CoE effectiveness and update the operational charter as required

Primary Dependencies:

1. RA-6 Enterprise Reporting and Analytics Platform
2. Establishment of the Data Initiatives Working group to serve as steering committee for this initiative (GOV-2 Governance Definitions)

Assumptions:

1. Support areas and capacity of the CoE will scale up incrementally to correspond to the introduction of additional capabilities specified in the Roadmap and new agency systems
2. CoE will initially be staffed by DT resources who possess an aptitude and interest in data analytics, data science and performance metric management. Existing JUSTIS Technical Support Team members will provide criminal justice and system level subject matter expertise to these resources
3. Agencies may choose to assign resources from grant funded programs or academic partners to the CoE on a temporary basis
4. Agencies may choose to “loan” some of their FTE resources to the CoE on a temporary assignment basis to gain knowledge of the data and tools as an active member of the CoE
5. Additional funding for long term and domain specific staffing/skills required to support CoE will need to be incorporated into appropriate JUSTIS budgets
6. The Data COE may be integrated or federated with the DataSF team or other DT teams with data analytics skills. Regardless of organization structure, a specific JUSTIS team with deep knowledge of the JUSTIS data assets and JUSTIS Agency culture/process will be maintained

Roadmap Category: Agency Data Integration

DATA-1 Integration CoE

Description:

This initiative establishes consultative capabilities to support agencies (and their vendors) in the development of interfaces between criminal justice systems using the Criminal Justice Integration hub (currently called the JUSTIS Hub).

The Center of Excellence will provide:

1. More consistent integration implementations reducing risks and costs for long term sustainment of integrations
2. The CoE in collaboration with the agencies' IT/SME staff and upon approval of JUSTIS governance will define specific architecture, patterns, tools and standards (e.g., API, XML schemas) for exchanging data using the JUSTIS Integration Platform.
 - a. One of the goals of these standards is to enable stakeholder agencies to incorporate these standards and practices as requirements to be fulfilled by vendors as part of agency system implementations.
 - b. A second goal is to establish standard methods of integrating system such that the JUSTIS Technical Support Team can acquire additional "staff augmentation" technical resources during spikes in demand for integration services. Currently in the absence of such standards and architecture, each integration is a complex custom effort which requires the direct participation of the limited pool of JUSTIS Technical SMEs.

Outcomes and Deliverables:

1. Expanded charter outlining roles and responsibilities of the CoE team
2. Estimated resource levels and skills required to support to JUSTIS agencies and their 3rd party vendors responsible for developing data interfaces to the JUSTIS hub in 2019-20 and updating and supporting the existing interfaces
3. Published data hub integration standards, architecture patterns, API/XML templates and associated software development kits (SDK's) to be used by agencies and their vendors for development and testing
4. Initial COE resources on boarded and available to work on Reporting requests from Agency and City Stakeholders.

Key Activities:

1. Establish project governance and operating model; engage the Working Group to serve as the steering committee for this effort (See Initiative GOV-3 Governance Deployment)
2. In collaboration with JUSTIS agencies expand the charter to include the integration services the CoE is expected to provide and the associated service levels
3. Develop a RACI which defines the roles of COE resources vs. agency application staff; as necessary, define a chargeback model for some or all CoE services

4. Modify the CoE organizational design including: key capabilities, organizational structure and hierarchy, operations model, role descriptions, and FTE necessary for integration support
5. Conduct a skills assessment of the JUSTIS Technology Support Team and other DT resources to assess the ability to fill key roles from the current staff
6. Recruit resources (internally and/or externally) and staff CoE
7. Define and document architecture patterns, tools and standards for exchanging data using the JUSTIS integration platform

Primary Dependencies:

1. Establishment Working groups to serve as steering committee for this initiative, See Initiative GOV-3 Governance Deployment RA-7 Reporting and Analytics CoE

Assumptions:

1. The Integration CoE will be integrated with other CCSF data and systems management teams and included in on-going JUSTIS program governance
2. A single CoE structure will provide both integration and data support

DATA-2 Implement Agency System Data Exchanges

Description:

Utilizing the JUSTIS Integration Platform, design, develop and deploy data exchanges to interface new agency systems. The implementation schedule of these exchanges will need to be synchronized with implementation timelines of each of agency system replacement projects. Also, depending on the CABLE3/CMS Decommissioning plan and activities, existing interfaces with agency systems may need to be retrofitted or rebuilt.

This initiative will:

1. Improve data accuracy and operational efficiencies by eliminating duplicate data entry as cases move through the criminal justice lifecycle
2. Sustain current levels of data sharing as current shared systems (e.g., CABLE3/CMS) are replaced by the collection of new or extended agency level systems
3. Provide loose coupling of agency level system replacement projects thereby reducing dependencies across project schedules
4. Expand data sharing, improve data accuracy and operational efficiencies by integrating juvenile justice systems (juvenile probation, juvenile/ family court)

Outcomes and Deliverables:

1. Master Integration Development Schedule
2. Specifications, development, testing, deployment and on-going support and enhancements of event driven data exchanges, facilitated by the JUSTIS Integration Platform, which share information between new or extended agency systems

3. Required data exchanges and orchestrations to populate JUSTIS Common Data Repository

Key Activities:

1. Architect and design each new interface taking note that it is desirable for additional data elements to be made available to JUSTIS for potential sharing with agencies in the future.
2. Use the Process Workflows included in the Common Taxonomy and work with the stakeholder agencies to develop a master inventory and schedule of data exchanges required for planned system replacements and enhancements; prepare corresponding integration iteration/release plans
3. Confirm resource capacity and availability for integration development and support needs; acquire additional resources as required
4. Confirm Interface Control Document template to define each data exchange inclusive of:
 - a. integration partner responsibilities
 - b. payload (i.e., data to be exchanged)
 - c. integration method (including utilization of the new JUSTIS Integration Platform as applicable)
 - d. security requirements
 - e. triggering events
 - f. testing procedure
5. Prepare and approve Interface Control Documents for each exchange to be developed
6. Develop, test, and deploy data exchanges (JUSTIS hub and agency system API development)
7. Provide documentation and input to JUSTIS Operating Model to support sustainment of data exchanges

Primary Dependencies:

1. RA-1 Taxonomy - Core Criminal Justice Lifecycle Data
2. EX-1 Integration Platform Acquisition (for Agency systems being deployed after completion of this initiative)
3. GOV-3 Governance Deployment

Assumptions:

1. Some amount of JUSTIS resources will be required to assist the agencies with the integration of their systems with JUSTIS. Depending on timing and resource capacity, this may impact the implementation timelines for new agency systems

Roadmap Category: Extended Capabilities

EX-1 Integration Platform Acquisition

Description:

Consistent with the Hybrid Information Platform architecture, prepare requirements and select integration tooling.

The initiative will:

1. Provide lighter weight, more agile integration tooling that promotes information sharing and reduces barriers to integration
2. Facilitate the incremental introduction of new integration tools and capabilities and minimize the need for immediate retrofits of existing integrations to the new architecture

Outcomes and Deliverables:

1. High level 'to be' architecture and functional/technical requirements to drive a structured Proof of Concept (PoC) design and needs elaboration process for integration platform component options
2. Updated/detailed 'to be' architecture and detailed functional and technical requirements arising from the PoC to be used in a solution procurement (e.g., RFP), along with appropriate evaluation criteria
3. Selection and contracting for modernized integration platform components as needed to execute the vision described in the JUSTIS 5 year roadmap
4. Implementation of the platform including at least one pilot integration deployed in production (note: this will require the development of more than one interface)

Key Activities:

1. Establish project governance and operational model
2. Confirm current state integration approaches including both automated (e.g., Oracle Fusion, point-to-point) and paper based information exchanges
3. Document pain points, gaps and constraints with the current platform and integrations
4. Confirm future state integration principles and high-level requirements
5. Conduct a structured Proof of Concept of available commercial and open-source integration platforms and architectures
6. Create future state integration architecture and identify and design pilot use case and related interfaces/components and other requirements
7. As necessary, incorporate requirements into an RFP and procure required integration platform components (if required)
8. Deploy the new integration platform and integrate with CCSF supporting infrastructure (e.g., security, DR, etc.)
9. Design, develop and implement a pilot integration(s) on the new integration platform to serve as a model for subsequent integrations

Primary Dependencies:

1. RA-1 Taxonomy - Core Criminal Justice Lifecycle Data
2. RA-5 Security and Access Policy Development

Assumptions:

1. The JUSTIS Technical Support Team, with external support as required, is able to conduct a platform PoC process to research and understand platform capabilities available from the market without compromising applicable procurement processes

EX-2 Master Data Management (MDM)

Description:

Establish data management practices and the supporting platform for managing core data elements and supporting attributes across JUSTIS agencies. Initial MDM will be focused on managing person master data with subsequent iterations for cases and locations.

The initiative will:

1. Provide for management of common attributes, including common key identifiers for a master record across participating agency systems
2. Facilitate the update of (or common access to) master record attributes (e.g., person demographics) across JUSTIS and agency level systems
3. Ensure the existence of a single data instance for a single person wherever possible

Outcomes and Deliverables:

1. JUSTIS Master Data Design and Architecture
2. Augmentation to the JUSTIS Data Governance charter to include the MDM domain for both implementation and sustainment of MDM
3. Implemented MDM platform (if separate platform/tool is specified in the MDM architecture)
4. Implemented APIs or other integration methods for integrating MDM capabilities with JUSTIS and agency level systems

Key Activities:

1. Establish project governance and operational model
2. Consistent with the common taxonomy, elicit MDM requirements
3. Prepare the MDM Design and Architecture document and supporting Data Governance charter updates
4. As necessary, conduct a procurement process to acquire needed components and resources for the MDM platform not already included in the Integration Platform or existing CCSF data management assets
5. Establish protocols (e.g., APIs, direct reads, etc.) for integrating MDM data with agency or JUSTIS systems

6. Configure MDM capabilities based on the MDM design for defined elements of the common taxonomy
7. Identify and prioritize agency systems for integration with MDM capabilities
8. Retrofit existing or integrate new agency systems with MDM capabilities
9. Establish change management processes as part of Data Governance for ongoing updates of MDM capabilities

Primary Dependencies:

1. RA-1 Taxonomy - Core Criminal Justice Lifecycle Data
2. RA-5 Security and Access Policy Development
3. EX-1 Integration Platform Acquisition

Assumptions:

1. The JUSTIS Master Data Management initiative should be synchronized with any other related initiatives planned for the SFPD Identification Bureau

EX-3 Person Based Integrated Views

Description:

Utilizing the JUSTIS Integration Platform and data structure/indices in the JUSTIS Common Data Repository, create a user interface which aggregates all available information about a single person (including relationships to other persons or entities) in a single view. Drilldown information to data currently provided in agency specific systems would also be provided if appropriate based on the agency access level and inter-agency MOUs.

The specific architecture and requirements for this capability would be determined based on the final capabilities provided by the JUSTIS Common Data Repository and JUSTIS Integration initiatives. This initiative could consist of a data aggregation capability which collects required information from agency systems and stores it in the JUSTIS Common Data Repository and/or it could be a federated query which and retrieves the data from agency systems in real time.

The scope of this capability will initially be limited to key data contained in key criminal justice stakeholder systems and databases. Longer term it could be integrated with DPH's whole person care initiative which provides a similar 360 degree view of residents, except through a social services, housing, treatment program, mental health and health care prism. This would align with the City's long term goals of promoting both social and criminal justice and better addressing the underlying causes of many quality of life issues, and both property and violent crimes through improved coordination and situational awareness between criminal justice stakeholders and other CCSF agencies such as HSA, HSH and DPH. Significant access control and compliance issues, along with technical barriers would need to be addressed.

This view would improve efficiency and accuracy by reducing the need for multiple separate logons and searches and reduce the need for custom developed reports.

Outcomes and Deliverables:

1. Integrated person view data access and user interface design
2. Configured and deployed data access modules and portal for the integrated person view

Key Activities:

1. Establish project governance and operating model; confirm sourcing for portal design and implementation resources for the solution
2. Elicit general and person view specific requirements
3. Define access control requirements and revise data sharing agreements as required
4. Define the short term and long term (including HSA, HSH, DPH) portal architecture considering person view and future needs
5. Procure architectural components not already included in the JUSTIS Integration Platform (if required)
6. Prepare integrated person view design and interface control documents, leveraging existing data exchanges where possible
7. Configure, develop, test and deploy required integrations, presentation layer and access controls
8. Provide on-going enhancements, support and maintenance

Primary Dependencies:

1. RA-1 Taxonomy - Core Criminal Justice Lifecycle Data
2. RA-2 Taxonomy – Agency Specific Data
3. RA-3 Data Repository Establishment
4. EX-1 Integration Platform Acquisition
5. EX-2 Master Data Management (MDM)
6. RA-5 Security and Access Policy Development
7. GOV-4 Data Governance Establishment

Assumptions:

1. Portal and supporting capabilities will be included in the requirements for the JUSTIS Integrated Platform
2. The Integrated Person View could mitigate some lost data access resulting from the Superior Court's C-Track implementation and the CABLE3/CMS decommission
3. Once established this portal could be made available to non CCSF agencies (FBI, DHS, etc.) at the discretion of the JUSTIS Council, and with appropriate security control in place. It could also be made available to other CSSF agencies with an interest in the individual's holistic social and justice outcomes (e.g., DPH, HSH, HSA, etc.)

EX-4 Location and Event Integrated Views

Description:

Utilizing the JUSTIS Integration Platform and indices in the JUSTIS Common Data Repository, create a user interface which aggregates all available information about a single geo-location and/or case. Drilldown information to agency systems would also be provided.

These views would improve situational awareness, development of holistic intervention and treatment plans and create additional relationships linking persons, locations and cases to analyze potential risks and causation.

Outcomes and Deliverables:

1. Extended integrated view data access and user interface design
2. Configured and deployed data access modules and portal to support additional data domains

Key Activities:

1. Confirm sourcing for portal design and implementation services
2. Elicit location and case based view specific requirements
3. Define access control requirements and revise data sharing agreements as required
4. Prepare location and case integrated view design and interface control documents, leveraging existing data exchanges where possible
5. Configure, develop, test and deploy required integrations, presentation layer and access controls

Primary Dependencies:

1. RA-1 Taxonomy - Core Criminal Justice Lifecycle Data
2. RA-3 Data Repository Establishment
3. EX-1 Integration Platform Acquisition
4. EX-2 Master Data Management (MDM)

EX-5 Community Collaboration Platform

Description:

Establish JUSTIS capabilities to share information with community based organizations and, where applicable, manage shared workflows.

This collaboration platform will enhance the effectiveness of community based programs, especially in critical areas such as re-entry and programs for youth (juveniles and transitional age youth), by providing them with access to critical information about their assigned cases/individuals, which today may be provided haphazardly or not at all. It could also be used to increase the City's ability to engage with and manage Community Based Organizations (CBOs) in the future. The collection of participation, disposition and outcome data from CBOs for later analysis of program effectiveness would be of particular value.

Outcomes and Deliverables:

1. Requirements and design specifications for the collaboration platform
2. Developed and deployed collaboration platform initially piloted to serve collaboration between the Sheriff and re-entry program providers
3. Recruiting resources for facilitating and development of the requirements and design specifications; implementation of the pilot and extending the platform to other agencies; provide on-going enhancements, support and maintenance.

Key Activities:

1. Establish Project governance and mobilize team, including engaging external resources as required
2. Establish project governance and operating model; confirm sourcing for portal design and implementation services
3. In collaboration with Pre-Trial Services and Re-Entry CBOs develop uses cases, including high level workflows describing future state collaboration through the integration platform
4. Define requirements for each use case, and prioritize use case implementation based on business value
5. Define access control requirements and revise data sharing agreements as required
6. Define the collaboration platform architecture including data sharing, case management and workflow requirements as required; confirm platform deployment options (e.g., on premise
7. Procure architectural components not already included in the JUSTIS Integration Platform (if required)
8. Prepare collaboration platform design and interface control documents, leveraging existing data exchanges where possible
9. Configure, develop, test and deploy required integrations, presentation layer and access controls
10. Work with the participating agencies to further design 2-3 pilot use case for collaboration
11. Configure collaboration platform to provide functionality described in the pilot uses cases
12. Refine collaboration platform capabilities based on pilot use case results and outcomes

Primary Dependencies:

1. RA-1 Taxonomy - Core Criminal Justice Lifecycle Data
2. RA-3 Data Repository Establishment
3. EX-1 Integration Platform Acquisition

EX-6 Content Management

Description:

Establish requirements, procure and implement a platform for the sharing of non-structured content (e.g., digital documents, scanned documents, images, videos, digital evidence, body worn camera video, etc.) among criminal justice agencies.

This initiative will reduce the need for paper based processes, reduce the need for storage of redundant copies of electronic documents and facilitate the sharing of digital evidence (in particular pervasive video) and increase efficiency and accuracy. The initiative will facilitate easier compliance with retention, expungement and related policies.

Outcomes and Deliverables:

1. Design specification agreed among all stakeholder agencies for a common content management system
2. Content management system implemented and integrated with agency case management system and other systems, as required
3. Shared infrastructure for management of digital content
4. Recruiting appropriate resources to facilitate and develop specifications; build common infrastructure; develop and deploy the content management; provide on-going support and enhancements.

Key Activities:

1. Establish project governance and operational model
2. Develop the JUSTIS content management strategy by analyzing unstructured content that is shared among agencies, associated workflows, required capabilities (e.g., redaction, searching, chain-of-custody management, etc.) and agency system integration requirements
3. Develop JUSTIS content management functional and technical requirements
4. Procure a content management platform aligned with the JUSTIS content management strategy and requirements
5. Work with the agencies to identify 2-3 use cases for the document management capability (e.g., exchange or access to specific shared documents)
6. Configure and deploy the content management platform
7. Design, plan and implement a pilot supporting the demonstration use cases, including integration with agency level case management or content management systems as applicable
1. Use lessons learned from the pilot to develop the full rollout plan for JUSTIS content management
2. Extend Data Governance domains and processes to include non-structured content

Primary Dependencies:

1. EX-1 Integration Platform Acquisition
2. GOV-4 Data Governance Establishment

Assumptions:

1. The content management system will initially hold *shared* unstructured content, but could also be extended in the future to be a single repository for all such unstructured content (i.e., inclusive of agency specific unstructured content)

2. The content management system will use the JUSTIS Integration Platform to facilitate the exchange of content where practical

EX-7 Implement Reference Code Management Platform

Description:

Deploy and implement meta data management capabilities of the JUSTIS Integration Platform aligned with the Common Data Taxonomy to support the use of consistent sets of reference codes across criminal justice agencies.

This initiative will: facilitate consistent classification and reporting of criminal justice data; provide automation support to encourage or require compliance for usage of common reference code values; and consistently manage definitions (i.e., descriptions) corresponding to specific reference code values.

Outcomes and Deliverables:

1. Specification and deployment of meta data management capabilities configured specifically for the management of criminal justice reference codes
2. Provisioning of APIs to be used for integration of reference code management capabilities into agency systems

Key Activities:

1. Establish architecture and tooling for reference code management
2. As necessary, create requirements and conduct a procurement process to acquire needed components and resources
3. Establish protocols (e.g., APIs, direct reads, etc.) for integrating centrally managed reference codes with agency or JUSTIS systems
4. Configure reference code management capabilities included in the JUSTIS integration platform based on defined elements of the common taxonomy
5. Identify and prioritize agency systems for integration with the reference code platform
6. Retrofit existing or integrate new agency systems with the reference code platform
7. Establish change management processes as part of Data Governance for ongoing updates of centrally managed reference codes

Primary Dependencies:

1. RA-1 Taxonomy - Core Criminal Justice Lifecycle Data
2. RA-3 Data Repository Establishment
3. EX-1 Integration Platform Acquisition
4. GOV-4 Data Governance Establishment

Assumptions:

1. Master Data Management capabilities of the JUSTIS Integrated Platform could be used as tooling for this initiative
2. Conformance with applicable federal, state and local standards will be required

EX-8 Implement Security and Access Control

Description:

Using integrated security capabilities of the JUSTIS Integration Platform, implement the Identity Access Management and Data Security Policy and integrate such capabilities as necessary with agency systems.

Outcomes and Deliverables:

1. Security capabilities limiting user access to data as described in the security roles and permissions initiative

Key Activities:

1. Establish project governance and operational model
2. Prepare the architectural design for implementation of the Identity Access Management and Data Security Policy
3. Prepare the security and access control implementation plan synchronized with JUSTIS capabilities introduced in other Roadmap initiatives
4. Implement security and access control capabilities at the integration platform, database and reporting layers
5. Prepare and establish initial role and privilege assignments
6. Develop security and access control administration, compliance and monitoring processes as input to the JUSTIS Operating Model

Primary Dependencies:

1. RA-1 Taxonomy - Core Criminal Justice Lifecycle Data
2. RA-5 Security and Access Policy Development
3. EX-1 Integration Platform Acquisition

Assumptions:

1. JUSTIS security and access control will conform with CCSF standards where possible, including use of existing authentication policies platforms

Roadmap Investment Summary

Cost Calculation Methodology

Rough Order of Magnitude (ROM) cost was calculated using the following key drivers:

1. **Hardware Costs:** anticipated cost of any computers, server, or other hardware associated with an initiative; costs are applied to in the first scheduled month of the initiative.
2. **Software Costs:** estimated software licensing costs; costs are applied in the first scheduled month of the initiative.
3. **Resources:** resources contracted to deliver an entire initiative or a portion of thereof. The cost was estimated by multiplying the total work hours to complete and initiative by the industry rates for the required resource type. Resource costs are allocated monthly equally over the length of the initiative.

Cost Assumptions:

1. Internal CCSF resources are not included in the cost model.
2. Costs represent the total of estimated ongoing monthly costs over an assumed period of time defined in the Initiative charter. The cost model does not include ongoing maintenance or support costs.
3. Costs will vary based on decisions made during the associated planning activities.
4. This cost model does not include a contingency; best practice is to include a 20-25% contingency for technology projects similar to the Roadmap initiatives.

Table 1: Rough Order of Magnitude Investment Summary

		Investment	Sub Total
Risk Mitigation	RM-1 CABLE/CMS to JUSTIS Initial Migration	\$ 6,327,000	
	RM-2 CABLE/CMS Migration Planning	\$ 671,000	
	RM-3 CABLE3/CMS Migration and Decommissioning	\$ 2,298,000	
	RM-4 JUSTIS Infrastructure Migration	\$ 244,000	
	RM-5 JUSTIS HUB Disaster Recovery	\$ 416,000	
	RM-6 Agency System Disaster Recovery	\$ 192,000	
			\$10,149,000
Operating Model and Governance	GOV-1 Operating Model Establishment	\$ 612,000	
	GOV-2 Governance Definition	\$ 156,000	
	GOV-3 Governance Deployment	\$ 271,000	
	GOV-4 Data Governance Establishment	\$ 271,000	
			\$1,311,000
Reporting and Analytics	RA-1 Taxonomy - Lifecycle Data	\$ 403,000	
	RA-2 Taxonomy – Agency Specific Data	\$ 146,000	
	RA-3 Data Repository Establishment	\$ 359,000	
	RA-4 Data Repository Population	\$ 718,000	
	RA-5 Security and Access Policy Development	\$ 156,000	
	RA-6 Enterprise Reporting and Analytics Platform	\$ 654,000	
	RA-7 Reporting and Analytics CoE	\$ 584,000	
			\$3,019,000
Implement Agency System Data Exchanges	DATA-1 Integration CoE	\$ 419,000	
	DATA-2 Implement Agency System Data Exchanges	\$ 3,641,000	
			\$4,060,000
Extended Capabilities	EX-1 Integration Platform Acquisition	\$ 2,647,000	
	EX-2 Master Data Management	\$ 830,000	
	EX-3 Person Based Portal	\$ 1,511,000	
	EX-4 Location and Event Integrated View	\$ 756,000	
	EX-5 Community Collaboration Integrated View	\$ 1,268,000	
	EX-6 Content Management	\$ 4,007,000	
	EX-7 Implement Reference Code Management Platform	\$ 295,000	
	EX-8 Implement Security and Access Control	\$ 335,000	
			\$11,649,000
Grand Total			\$30,187,000

Implementation Plan

The Implementation plan provides a recommended approach to successfully delivering the Roadmap and is comprised of the following sections:

1. Program and Project Team Structure
2. Staffing Plan
3. Governance
4. Change Control
5. Project Management Planning
6. Key Performance Metrics
7. Risk Assessment

Program and Project Team Structure

Gartner recommends building out the program team using both internal and external resources. Key roles to include in the program team structure include:

Role	Description
Project Manager	Includes project managers and related supporting administrative project analysts
Functional Analyst	Includes business analysis, quality assurance, change management, etc.
Architect / Specialist	Includes solution technical and data architects as well as OEM technical SMEs, external oversight, and other specialized resources
Application Engineer	Includes developers, DBA, etc.
Infra-structure Engineer	Includes network, server/storage, security, DevOps, etc.
JUSTIS Agency Liaison	Identifies appropriate resources within their respective agencies to answer specific questions or attend ad-hoc project meetings or working sessions
Agency Functional SME	Includes leadership, management, IT, and line staff from the JUSTIS Agencies
Agency Application Engineer	Includes internal and contracted developers, DBA, and other related SMEs employed by the JUSTIS Agencies
Program Officer	Develops and maintains business capabilities of the JUSTIS enterprise in line with the roadmap as well as contributing to the business strategy and plans
Roadmap Project Manager	Manager responsible for coordinating PMs responsible for delivering the Roadmap initiatives
JUSTIS Application Engineer	Provides JUSTIS subject matter expertise, application development, and support for additional development staff

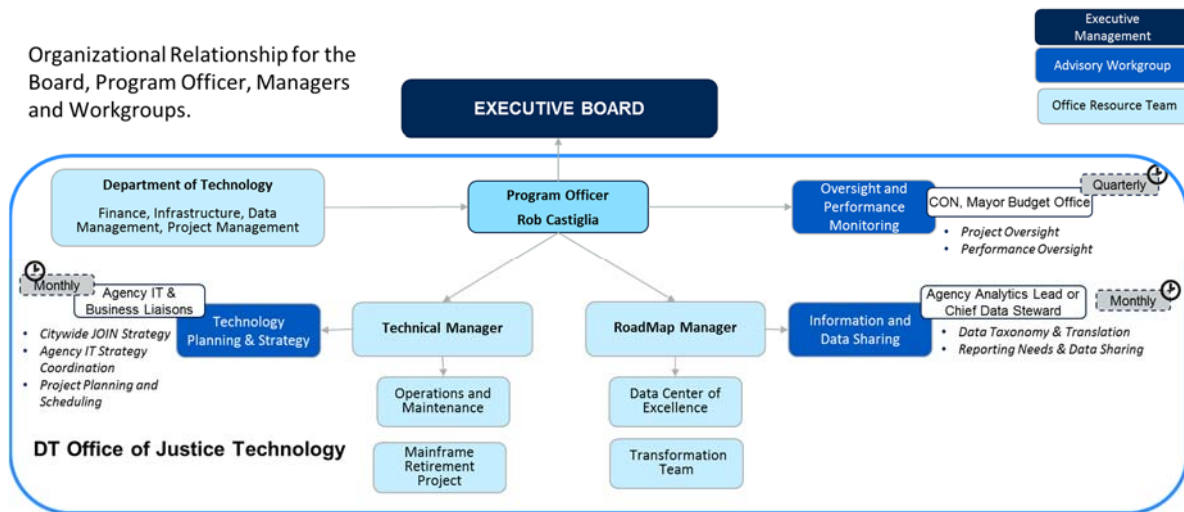
Each project team may consist of a Project Manager, Functional Analysts, Technical Resources, and both Operational and Technical JUSTIS Agency SMEs. The Project Manager for each initiative will report to the Roadmap Project Manager assigned by the Department of Technology PMO, who is responsible for

overseeing the individual initiatives, serving as the first point of escalation, reporting to Program Officer, Executive Sponsors, and administrative management of program.

The Roadmap Project Manager will receive support from the Program Officer who has significant knowledge of the current state technical and operational landscape and can help the Roadmap Project Manager manage risks and issues, identify cross project dependencies, assess operation processes which will be impacted, and provide overall guidance.

Project teams for each initiative would operate within the broader Roadmap program structure depicted below.

Figure 5: Program Team Structure Diagram



Key Performance Metrics

Prior to beginning each initiative, the project manager should create a full project charter and a project plan for each initiative including identifying the specific benefits the initiative will deliver.

These benefits should be considered the key performance indicators for the individual initiatives, as well as the overall roadmap and should be included in regular status reports that align with current DT PMO practices and standards, accordingly.

Figure 6: Project Management Planning



Project Communication

Communication is a critical component to project success, especially for a Roadmap with such a diverse group of stakeholders. Project managers should provide a Bi-Weekly status report to the Roadmap Project Manager, focused on key reporting metrics such as;

1. Schedule
2. Scope
3. Quality
4. Budget, Risks and Issues
5. Project Benefit realization

The Roadmap Project Manager will provide a monthly status report to the Program Officer and each member of the Executive Steering Committee. In addition to providing a project rollup, the program monthly report will highlight

1. Cross-program risk and issues
2. Key dependencies between initiatives
3. Program level Benefit realization

Staffing Plan

In addition to the costs previously identified, successful implementation of the Roadmap will require resources be assigned from both JUSTIS Agencies and DT.

Costs associated with these internal resources were not factored into the overall Roadmap investment summary.

The tables below show the average number full time equivalent (FTE) resources needed from each JUSTIS agency and from the Department of Technology to execute the Roadmap.

Table 2: Estimated resource allocation for each JUSTIS Agency

	FY18	FY18/19	FY19/20	FY20/21	FY21/22	FY22/23	FY23/24	FY24/25
JUSTIS Agency Resources	0.6	2.7	3.1	5.4	4.7	3.3	0.3	
Agency Application Engineer	0.1	0.8	1.3	2.1	1.8	1.2	0.1	
Agency Functional SME	0.5	1.9	1.8	3.3	2.9	2.2	0.2	

Table 3: Estimated resource allocation for Department of Technology

	FY18/19	FY19/20	FY20/21	FY21/22	FY22/23	FY23/24	FY24/25
JUSTIS ISD Staff	1.9	5.8	6.5	6.3	5.0	4.2	0.2
Architect / Specialist	0.1	0.2	1.5	1.1	0.5	0.3	0.1
Infra-structure Engineer	0.5	0.5	0.6	0.8	0.4	0.3	0.1
JUSTIS Application Engineer	1.3	3.1	2.4	2.4	2.2	1.5	0.0
JUSTIS Roadmap Project Manager	0.0	1.0	1.0	1.0	1.0	1.0	0.0
JUSTIS Program Manager	0.0	1.0	1.0	1.0	1.0	1.0	0.0

These staff counts are rough order of magnitude estimates, which should be further refined during the initiation planning stage of each initiatives.

The full staffing and cost model is included in the “JUSTIS Roadmap Cost and Staffing Model – Final.xlsx” deliverable submitted with this document.

Governance and Change Control

To improve operational efficiency, each initiative should follow a consistent change control process and have key project decisions made in accordance with project decision making plan. During the project planning phase these plans should be reviewed and updated as necessary.

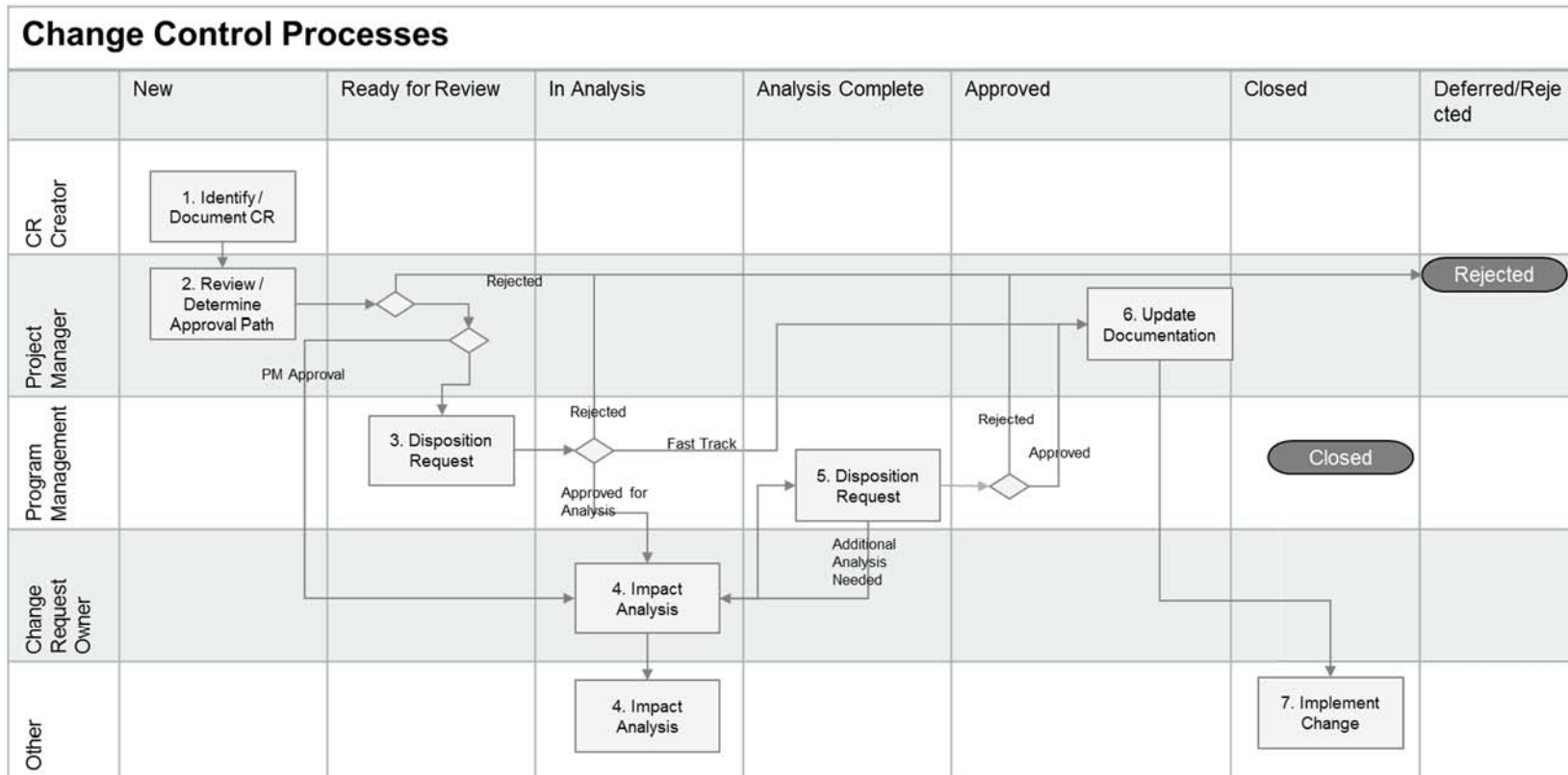
The project decision making plan identifies who is responsible for making key project execution decisions. For the JUSTIS Roadmap it is recommended that a Program Management Group consisting of the Program Officer and Roadmap Project Manager be established and act as the primary decision makers for project related decisions and escalating to the Executive Steering Committee for issues they are not able to resolve.

Table 4: Draft Project Decision Making Plan (final version to be approved by Executive Committee)

	Executive Committee	Program Management		Project Management Group		Technical Group		Security
Decision Type	Executive Committee	Program Manager	Roadmap Project Manager	Project Manager	Functional Analysts	Agency SME's	JUSTIS SMEs	CISO
Risk / Issue Resolution	EL	I	I	DM	I	I	I	I
Scope Changes	EL	DM	DM	DR	I	I	I	I
Schedule Changes (Exceeding 2 Weeks)	EL	DM	DM	DR	I	I	I	I
Staff Change Recommendations	EL	I	DM	DR	I	I	I	I
Budget Change Recommendations	EL	DM	DM	DR	I	I	I	I
Vendor Contractual Obligations / Invoice Approvals	EL	DM	DM	DR	I	I	I	I

- **Input:** This body provides input that is used when making the decision.
- **Decision Maker(s):** This body is responsible for making the decision.
- **Decision Recommendation:** The role or group responsible for making decision recommendations to the Decision Maker(s).
- **Escalation Level:** This body provides an escalation point when the decision maker determines a higher authority needs to make the decision or when decisions need to be revisited.

Table 5: Sample Change Control Processes



Step	Status	Role	Action
1 – Identify / Document Change Request	New	Change Request Creator	<ul style="list-style-type: none"> Any member of the project team can identify the need for a change to project scope, resourcing, budget by creating a new Change Request via the Change Control Template (CCT). Team members should not assess a potential change request prior to logging it and receiving approval by Program Management to proceed for further analysis.
2 – Review Request and Determine Approval Path	New	Project Manager	<ul style="list-style-type: none"> A preliminary assessment of the change request is performed by the project managers who will involve the person requesting the change and others as required. Such assessment should only be performed when the amount of effort required to complete the assessment is not material (less than 4 hours). If the assessment of the change is material (4 or more hours), then an impact assessment needs to first be approved. The PMs will then determine which approval process will be applicable for the change, based upon the Change Control Thresholds. If the change can be approved by the PM, the PM will coordinate the impact assessment and complete the review. If the change cannot be approved by the PM, the PM will coordinate a review with Program Management.
3 – Disposition Request	Ready for Program Management	Program Management	<ul style="list-style-type: none"> Program Management will review the change request and determine the next step – defer/reject, assign for investigation (impact analysis), or fast-path to disposition. Only change requests that have sufficient analysis to support the disposition and implementation should be considered for fast-track. Most change requests will require impact analysis prior to final disposition. Statuses on Change Requests can be: New, Ready for CCT Review, In Analysis, Analysis Complete, Rejected, Approved, Deferred, Closed Change requests can be ‘fast tracked’ if the CCT determines that Impact Analysis is not required
4 – Perform Impact Analysis	In Analysis	Change Request Owner	<ul style="list-style-type: none"> The team member assigned to perform the detailed impact analysis will complete the investigation required to support the Program Management decision process. She/he will work with others as required to coordinate proper assessment of the change request (e.g. estimation of workdays, etc). Once impact analysis is completed, the change request status is set to “Analysis Complete”

5 – Disposition Request	Analysis Complete	Program Management	<ul style="list-style-type: none"> ▪ Prior to Program Management meeting, the lead for the assigned team will review the change request analysis to determine that the necessary analysis has been completed. Only those that have been listed as Analysis Complete will be reviewed for Approval Program Management. ▪ Program Management will review and determine status – Approve and assign for implementation, Defer/Reject, Assign for additional investigation Depending on the nature of the change request, approval may need to be escalated to Steering committee for approval, in which case the status will remain as “Analysis Complete” until approval is obtained.
6 – Coordinate Documentation Update	Approved	Project Manager	<ul style="list-style-type: none"> ▪ If approved, the Project Manager will coordinate with the teams so they update the appropriate documentation. Depending on the nature of the change request, this could be work plans, staffing plans, etc. ▪ Once confirmation that the updates have taken place, status is set to “Closed”.
7 – Close Change Request	Closed	Project Manager	<ul style="list-style-type: none"> ▪ At this point, the change request has been incorporated into the normal project lifecycle. Implementation status will be tracked as part of the standard project status report process.

Risk Assessment

The table below provides a summary risk assessment for the implementation of the JUSTIS 5 Year Roadmap. This assessment includes the following:

- **Category.** Gartner’s standard set of categories of quality standards used to organize the risk assessment
- **Quality Standard.** Gartner’s quality standards used to assess risk in information technology programs
- **Risk Measure.** A summary measure of risk associated with the specified Category:
 - **Low Risk.** The aggregate of potential impact to the project and probability of risk items occurring in the noted category is low
 - **Medium Risk.** The aggregate of potential impact to the project and probability of risk items occurring in the noted category is medium. Recommendations for risk areas assigned this rating are important to ensure project success
 - **High Risk.** The aggregate of potential impact to the project and probability of risk items occurring in the noted category is high. Recommendations for risk areas assigned this rating are essential
- **Comments.** Observations supporting assignment of the risk measure to the respective quality standard Category
- **Recommendations.** Actions recommended to retire noted risks and/or minimize potential impacts

Immediately following the assessment are Gartner’s standard definition of risk measures for each Quality Standard.

Category	Quality Standard		Comments	Recommendations	Initiatives Affected
Business Mission and Goals	Project Fit to Customer Operational Imperatives	L	<ul style="list-style-type: none"> • The Roadmap strategic objectives were created in alignment with policy, regulatory and efficiency objectives of the agencies 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • N/A
	Business Impact		<ul style="list-style-type: none"> • Roadmap initiatives were selected to provide direct impact for both agency staff and the public served 		

Category	Quality Standard		Comments	Recommendations	Initiatives Affected
Decision Drivers	Decision Process	M	<ul style="list-style-type: none"> Dates related to the CABLE3/CMS decommissioning have dependencies on the Superior Court C-Track program with dates not directly under the County's control Prioritizing CABLE3/CMS Decommissioning before some other Roadmap initiatives may cause limited retrofitting as those future initiatives are fully specified and implemented 	<ul style="list-style-type: none"> Conduct detailed CABLE3/CMS Decommissioning Planning to prioritize incremental removal of dependencies on the C-Track project Design interfaces to leverage the JUSTIS Hub where practical to minimize direct system to system dependencies 	<ul style="list-style-type: none"> RM-1 RM-2 RM-3 RA-3 RA-4 RA-6 DATA-1 DATA-2 EX-1
	Imposed Date				
	Short Term Solution				
Project Management	Definition of the Project	M	<ul style="list-style-type: none"> The Roadmap, as developed with the agency stakeholders, includes a defined scope and strategic objectives Modified governance structures and additional program planning controls will need to be implemented to support Roadmap implementation Program sponsorship is complex due to the inter-agency definition of JUSTIS 	<ul style="list-style-type: none"> Supplement internal project manner resources with external sourced staff Ensure DT PMO standards and practices are consistently applied to all Roadmap initiatives Continually assess risks at the project and program level with direct reporting to project sponsors and all program governance levels Implement the new governance structures provided in the Roadmap within the first 6 months of the Roadmap 	<ul style="list-style-type: none"> All Initiatives, in particular: <ul style="list-style-type: none"> GOV-1 GOV-2 GOV-3 GOV-4
	Project Objectives				
	Leadership				
	Project Management Approach				
	Project Communication				
	Risks and Issues Management				
	Vendor Management				
	Documentation Management				
Project Parameters	Budget Sufficiency	M	<ul style="list-style-type: none"> The Roadmap will require significant investment beyond current budget 	<ul style="list-style-type: none"> Develop and submit budget requests aligned with Roadmap 	<ul style="list-style-type: none"> All Initiatives
	Budget Management				

Category	Quality Standard		Comments	Recommendations	Initiatives Affected
	Project Schedule		<p>levels to implement the initiatives in the specified timeline</p> <ul style="list-style-type: none"> Budgets for agency level projects are not centrally managed making it difficult to manage overall budget sufficiency for implementation of the Roadmap 	<ul style="list-style-type: none"> Task the JUSTIS Executive Sponsor with advocating for program budget and for coordinating support across stakeholder agencies Task the program office with exploring external funding options including grants and public-private partnerships 	
Project Team	Team Member Availability (Agency, DT, Vendors, Other)	H	<ul style="list-style-type: none"> The current core JUSTIS team is responsive to agency demands but requires additional capacity to meet the demands inherent in the Roadmap implementation, including interface development required to support the implementation of new or enhanced agency systems Lengthy processes to add new internal capacity and the need for specialized skills will require the use of external resources to execute many of the Roadmap initiatives as specified in the Execution Plan and per the Roadmap timeline 	<ul style="list-style-type: none"> Utilize existing and/or create additional sourcing agreements for externally contracted resources, emphasizing continuity over the Roadmap duration Focus hiring and sourcing on critical roles identified across Roadmap initiatives including data and integration specialists Supplement the existing JUSTIS support team with staff providing commodity skills thereby leveraging the team’s unique knowledge of CCSF specific systems and operational practices 	<ul style="list-style-type: none"> All Initiatives
	Mix of Team Skills (Agency, DT, Vendors, Other)				
	Program Team Productivity (Agency, DT, Vendors, Other)				
Organization Management	Organizational Stability (Agencies, DT, Vendors)	M	<ul style="list-style-type: none"> The Roadmap prescribes changes to JUSTIS governance and operational structures. This disruption to current established stability will require 	<ul style="list-style-type: none"> Ensure program management and project management staff are trained in formal organizational 	<ul style="list-style-type: none"> GOV-1 GOV-2 GOV-3 GOV-4

Category	Quality Standard		Comments	Recommendations	Initiatives Affected
	Project Organizational Roles and Responsibilities (Agencies, DT, Vendors)		diligent change management and executive sponsor support <ul style="list-style-type: none"> The current JUSTIS operational structure will require significant change to evolve from a software maintenance function to significantly elevated levels of activity and introduction of new capabilities specified in the Roadmap 	change management (OCM) methods <ul style="list-style-type: none"> Prioritize implementation of the GOV-1 Operating Model initiative Organize IT functions and teams by Mode 1 (sustainment) and Mode 2 (innovation) leveraging current JUSTIS support team expertise for the most critical Roadmap initiatives 	
Customer /User	User Involvement	L	<ul style="list-style-type: none"> JUSTIS agencies at the operational level were actively engaged in the development of the Roadmap Active operational participation in the development of the Roadmap established a high degree of ownership with the agencies which will improve user acceptance during implementation of the Roadmap initiatives 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
	User Acceptance				
Specification and Design	Requirements Management (Requirements Complete and Clear)	H	<ul style="list-style-type: none"> The Roadmap includes numerous dependencies, between architectural components and across agencies. Management of these dependencies is essential to successful implementation of the Roadmap Current requirements management and documentation practices are 	<ul style="list-style-type: none"> Deploy program management capabilities as prescribed in the Roadmap using best practices and supported by PM domain specialists Adopt formal but agile requirements development and documentation standards and 	<ul style="list-style-type: none"> All Initiatives
	Infrastructure Requirements				
	Solution Dependencies				

Category	Quality Standard		Comments	Recommendations	Initiatives Affected
	Security Requirements		informal and will improved capabilities to manage the level of change included in the Roadmap	task the program office with monitoring compliance with such standards • Build training time for new project teams into each Roadmap initiative for requirements management and related processes	
Development Process	Delivery Methodology (Solution Development / Configuration)	M	<ul style="list-style-type: none"> The current JUSTIS team has diligent development methods, including regression testing, that assure quality releases. These methods will require formalization and some change to support expanded levels of configuration and development activities specified in the Roadmap The Roadmap Implementation Plan envisions participation of vendor provided resources. Development processes will need to evolve to support a multi-organization engineering program The Roadmap anticipates acquisition of several new tools related to integration and data management 	<ul style="list-style-type: none"> Establish best practice-based software development (e.g., test based development) and quality assurance practices during the initial CABLE3/CMS Decommissioning activities; refine such practices based on early lessons learned Require compliance with program standards in vendor agreements for externally sourced resources Establish an independent quality assurance function within the program team to assure continuity and overall quality Include vendor-provided model implementations for new software platforms (e.g., integration platform, reporting and analytics tools) in acquisition agreements for such platforms 	<ul style="list-style-type: none"> All Initiatives
	Quality Assurance Approach (Agencies, DT, Vendors)				
	Project Documentation				
	External Interfaces				
	Test Planning				
	Configuration Management				
	Defect Management				
	Lessons Learned				
Tools Availability					

Category	Quality Standard		Comments	Recommendations	Initiatives Affected
Technology	Technical Architecture Fitness	L	<ul style="list-style-type: none"> The Roadmap includes initiatives to acquire and implement multiple integration and data components within a proven architecture framework to achieve program objectives. These components are broadly available from established providers in the technology market The Roadmap includes an initiative to replace the current integration platform with an alternative platform fit for the integrated justice purpose 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
Deployment	Deployment Approach	M	<ul style="list-style-type: none"> The Roadmap prioritizes replacement of the legacy CABLE3/CMS to reduce overall sustainment risk Many of the Roadmap initiatives require phased implementations with complex dependencies. Dependencies cross agency boundaries including with the Superior Court The Roadmap includes specific provision for improved BCM/DR both for centralized JUSTIS components and across agency systems 	<ul style="list-style-type: none"> Using the Roadmap baseline, task the program office with development of the detailed program schedule with dependencies captured Require monthly updates of the program schedule reported to the Executive Sponsor and other program leadership Develop and execute regular recovery tests of BCM/DR capabilities including participation of agency level systems 	<ul style="list-style-type: none"> RM-1 RM-2 RM-3 RA-1 RA-3 RA-4 RA-6
	Capacity				
	Performance Factors				
	Data Migration Requirement				
	Legacy System Disposition Approach				
	Phasing Strategy				
	Business Continuity Plan / Disaster Recovery Plan				
Maintenance	Solution Complexity	M	<ul style="list-style-type: none"> The agencies require continuation of current levels of support received from the JUSTIS team even as the 	<ul style="list-style-type: none"> Include sustainment strategies in the full project charters for each Roadmap initiative with 	<ul style="list-style-type: none"> All Initiatives
	Support Personnel (Agencies, DT, Vendors)				

Category	Quality Standard		Comments	Recommendations	Initiatives Affected
	Vendor Support		architecture and support structures become more complex and distributed <ul style="list-style-type: none"> Adoption of rigorous vendor management practices for sustainment SLAs will become more critical as more COTS components are adopted and as increasingly integrated inter-agency operational practices are more widely utilized for core criminal and juvenile justice processes 	specification of vendor provided support (with contractual SLAs) and/or verified knowledge transfer to CCSF staff <ul style="list-style-type: none"> Follow the Roadmap staffing plan which places a limit on the deployment level of the JUSTIS team for new initiatives thereby also preserving resource capacity for maintenance Include formal vendor management practices as part of the program office standard operating procedures 	

Risk Assessment Measure Standard Definitions

Quality Standard	Low Risk Cue	Medium Risk Cue	High Risk Cues
Project Fit to Customer Operational Imperatives	Directly aligns with customer operational imperatives	Somewhat aligns with customer operational imperatives	Does not align with customer operational imperatives
Business Impact	Little or unplanned business process impact	Some unplanned business process impact	Significant unplanned impact to business processes
Decision Process	Decision Process is documented, followed, and decisions are made in an open forum.	Decision Process is somewhat followed, with most decisions made in an open forum.	Decision Process is not documented and most decisions are made behind closed doors without supporting documentation.
Imposed Date	Date for delivery has been set by reasonable project commitment process	Date is being partially driven by need to meet technical deadline, legislative	Date is being totally driven by need to meet technical deadline, legislative

Quality Standard	Low Risk Cue	Medium Risk Cue	High Risk Cues
		mandate, or other mandate not related to realistic estimate	mandate, or other mandate not related to realistic estimate
Short Term Solution	Project meets short term need without serious compromise to long term outlook	Project is focused on short-term solution to a problem, with little understanding of what is needed in the long term	Project team has been explicitly directly to ignore the long term outlook and focus on completing the short term deliverable
Definition of the Project	Project is well defined with a scope that is manageable by this organization	Project is well defined but unlikely to be handled by this organization	Project is not well defined or carries conflicting objectives in the scope
Project Objectives	Verifiable project objectives, reasonable objectives	Some project objectives, measures may be questionable	No established project objectives or objectives are not measurable
Leadership	Project has a sponsor and full-time project manager	Project has a sponsor reasonable for project but unable to spend enough time to direct effectively. Project manager in engaged full-time.	Project has no sponsor or project manager concept is not in use
Project Management Approach	Product and process planning controls in place	Planning and controls need enhancement	Weak or nonexistent planning and controls
Project Communication	Clearly communicated goals and status between the team and rest of organization	Communications some of the information some of the time	Rarely communicates clearly to the team or to others who need to be informed of team status
Risks and Issues Management	Approach, processes and tool(s) established and followed.	Approach, processes and tool(s) established but not followed.	No approach, processes or tool(s) are in place.
Vendor Management	Approach, processes and tool(s) established and followed.	Approach, processes and tool(s) established but not followed consistently.	No approach, processes or tool(s) are in place.
Documentation Management	Approach, processes and tool(s) established and followed.	Approach, processes and tool(s) established but not followed.	No approach, processes or tool(s) are in place.

Quality Standard	Low Risk Cue	Medium Risk Cue	High Risk Cues
Budget Sufficiency	Sufficient budget allocated and aligned with project needs	Questionable budget allocated	Doubtful budget
Budget Management	Well established process / controls, in place	Process / controls in place, weak in areas	Process / controls lacking or nonexistent
Project Schedule	Detailed schedule exists, and project team and vendor(s) agree that schedule is acceptable and can be met	Schedule exists but lacks detail, project team and vendor(s) agree one phase of the plan to have a schedule that is too aggressive	No schedule exists, project team and vendor(s) agree that two or more phases of are unlikely to be met target dates.
Team Member Availability (Agency, DT, Vendors, Other)	Detailed resource plan in place, little turnover expected, few interruptions to resolve tactical issues	Resource plan available but lacking some details, some turnover expected, some resolving of tactical issues	No resource plan, high turnover, not available, team spends significant time resolving tactical issues
Mix of Team Skills (Agency, DT, Vendors, Other)	Good mix of disciplines	Some disciplines inadequately represented	Disciplines not represented
Program Team Productivity (Agency, DT, Vendors, Other)	All milestones met, deliverables on time, productivity high	Milestones met, some delays in deliverables, productivity acceptable	Productivity low, milestones not met, delays in deliverables
Organizational Stability (Agencies, DT, Vendors)	Little or no change in management or structure expected	Some management change or reorganizational expected	Management or organization structure is continually or rapidly changing
Project Organizational Roles and Responsibilities (Agencies, DT, Vendors)	Individuals throughout the program organization understand their own roles and responsibilities and those of others	Individuals understand their own roles and responsibilities, but are unsure who is responsible for work outside their immediate group	Many in the program organization are unsure or unaware of who is responsible for many of the activities of the program organization
User Involvement	Users highly involved with project team, provide significant input	Users play minor roles, moderate impact on system / solution	Minimal or no user involvement, little user input

Quality Standard	Low Risk Cue	Medium Risk Cue	High Risk Cues
User Acceptance	Users accept concepts and details of system / solution, process is in place for user approvals	Users accept of most of concepts and details of system / solution, process in place for user approvals	Users do not accept any concepts or design details of system / solution
Requirements Management (Requirements Complete and Clear)	Requirements are documented, clearly written and understood by customer, project team and vendor(s)	Some requirements incomplete or unclear and/or not understood by customer, project team or vendor(s)	Requirements are not documented and/or only understood by the customer
Infrastructure Requirements	Requirements are documented, clearly written and understood by customer, project team and vendor(s)	Some requirements incomplete or unclear and/or not understood by customer, project team or vendor(s)	Requirements are not documented and/or only understood by the customer
Solution Dependencies	Clearly defined dependencies of the solution effort and component systems	Some elements of the solution are well understood and planned; others are not yet comprehended	No clear plan or schedule for how the whole solution will come together
Security Requirements	Clearly defined and well understood security requirements	Some security requirements are incomplete or unclear	Security requirements are undefined or still in the conceptual phase
Delivery Methodology (Solution Development / Configuration)	Methodology well established, in place and being followed by the team	Methodology in place, but not followed or it is ineffective	Methodology nonexistent
Quality Assurance Approach (Agencies, DT, Vendors)	QA system established, followed, effective	Procedures established but not consistently followed or effective	QA processes are not evident nor documented
Project Documentation	Correct and available	Some deficiencies but available	None existent
External Interfaces	Little or no external integration or interfaces needed	Some external integration or interfaces needed	Extensive external interfaces required

Quality Standard	Low Risk Cue	Medium Risk Cue	High Risk Cues
Test Planning	Solution requirements easy to test, plans underway	Parts of solution hard to test, or minimal planning being done	Most of solution hard to test, or no test plans being made
Configuration Management	Configuration management process is defined, consistent and effective	Configuration management process is defined, but inconsistently used	No process in place to manage updated configurations.
Defect Management	Issues tracking defined, consistent, effective	Issues tracking process defined, but inconsistently used	No process in place to track issues
Lessons Learned	Lessons learned and improvements made at milestones or phases	Lessons learned conducted, improvements not incorporated	No lessons learned processes conducted, improvements not documented nor incorporated
Tools Availability	In place, documented, validated	Available, validated, some development needed (or minimal documentation)	Not validated, proprietary or major development needed, no documentation
Technical Architecture Fitness	Aligns with objectives, standards, and is proven in other similar solutions.	Somewhat aligns with objectives, standards, and is proven in other solutions providing somewhat similar functionality.	Does not align with objectives, standards, and is unproven.
Deployment Approach	Clearly defined approach with agreed to timeline, roles and responsibilities	Ambiguities exist, approach is not fully defined and/or roles and responsibilities unclear	No approach defined, or defined approach not being followed
Capacity	Growth capacity in the solution, flexible	Some growth capacity	No growth capacity, inflexible
Performance Factors	Readily fits boundaries needed	Operates occasionally at boundary levels	Operates continuously at boundary levels

Quality Standard	Low Risk Cue	Medium Risk Cue	High Risk Cues
Data Migration Requirement	Little or no data to migrate; data migration strategy is well-defined	Much data to migrate, but good descriptions available of structure and use; data migration strategy is weak	Much data to migrate; several types of databases or no good descriptions of what is where; no data migration strategy exists
Legacy System Disposition Approach	Clearly defined approach with agreed to timeline, roles and responsibilities	Ambiguities exist, approach is not fully defined and/or roles and responsibilities unclear	No approach defined, or defined approach not being followed
Phasing Strategy	Phasing strategy and associated milestones are clearly defined and understood.	Phasing strategy and associated milestones are somewhat defined and understood.	Phasing strategy and associated milestones are not clearly defined or understood.
Business Continuity Plan / Disaster Recovery Plan	Full system is backed up, a DR plan has been tested and is in place and a comprehensive BCP is available	BCP / DRP are being developed, or existing BCP / DRP is incomplete or inconsistent	No BCP or DRP are in place or DRP has not been successfully tested
Solution Complexity	Structurally maintainable (low complexity measured or projected)	Certain aspects difficult to maintain (medium complexity); interfaces have moderate complexity	Extreme difficulty to maintain (high complexity); interfaces have significant complexity; system will be brought down frequently for maintenance needs
Support Personnel (Agencies, DT, Vendors)	In place, experienced, sufficient in number	Missing some areas of expertise	Significant discipline or expertise missing
Vendor Support	Complete support at price that has been accounted for in the budget and in needed time frame	Adequate support at contracted price, reasonable response time	Little or no support, high cost, and/or poor response time