New York Health Benefit Exchange

Detailed Design Review Summary for
9.4.4 Scope and Change Control Management Plan
October 9 and 10

Item Number	Topic
9.4.4	Scope and Change Control Management Plan

New York State Department of Health

New York Health Exchange

CSC

9.4.4 Scope Management and Change Control Management Plan

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1.0	D. Boland, S. Rubenstein	08/29/2012	S. Garner, C. Adams	08/29/2012	Initial Version
1.1	S. Rubenstein	09/12/2012			Incorporated QA Feedback

Document Distribution

Any delivered versions of the Scope and Change Control Management document will be stored in the deliverable tracker section of the NY-HX SharePoint repository, and will be available to all via this medium.

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1 INTRODUCTION

1.1 Purpose

The Scope Management Plan (SMP) and Change Control Management Plan (CCMP) provides a systematic approach to identify, organize, document, review and maintain changes to the scope and requirements of the New York Health Benefit Exchange (NY-HX) Project, while operating under the principals and guidelines of a firm, fixed price contract and an Agile-Scrum methodology.

Agile is an iterative and incremental approach to software development, and by nature invites change as a part of its iterative process. Typically, and in the specific case of NY-HX, project duration and resources are fixed with scope a variable. Driven by a Product owner and built on constructs that place value as the primary objective Agile has proven powerful in delivering complex systems in a short period of time.

The goal of the SMP and CCMP is to allow for the core values of the agile methodology, while simultaneously providing a framework for identifying those changes that have the potential to impact the overall project success, and to provide a means to assess the value and effectiveness of those changes through a review and approval process. The nature of a firm, fixed price contract is to keep the project within the originally defined constraints of scope, time, and budget. Although efforts will be made to solidify requirements early in the project lifecycle, both CSC and New York State Department of Health (NYS DOH) acknowledge that as new information is discovered, modifications to the scope of the original contractual requirements may be necessary. Simultaneously it is understood that although change is welcome and expected in an Agile methodology, CSC and NYS DOH require a process whereby scope changes are collaboratively monitored and managed to ensure contractual obligations and expectations are met.

1.2 Scope

This plan focuses on identification and handling of all Change System Requests (CSRs) for the NY-HX program. This includes functional and technical requirements changes. The SMP and CCMP document will address project scope modifications, including additions, trade-offs and removals by:

- Identifying the means to accurately document the baseline scope of work
- Providing a description of processes to manage and control scope changes during the project
- Identifying a processes to evaluate and prioritize proposed changes to the project scope
- Identifying a means to communicating requirement changes and any potential impact
- Identifying a process for analyzing the change implementation and determining potential risks
- Identifying a process for schedule the CSR, after comparison with other planned activity or events
- Providing a mechanism for DOH review and approval to implement CSRs
- Identifying a process for communicating changes documenting their successful implementation
- Identifying a process to monitor and report CSRs
- Providing a description of post-change records

Ensuring that test and back-out procedures are considered, and the handling of code changes and the associated management of the Configuration Items, is not included as part of this plan. These procedures are governed in the Configuration Management Plan.

1.3 Intended Audience

The identification of potential scope changes and the handling of identified changes is a shared

responsibility across the project team; therefore the intended audience for this plan is all project team members, including those from CSC, DOH and Cognosante leadership and management teams. Additionally, these processes and procedures apply to all external organizations, groups and companies that may impact the NY-HX project.

1.4   Document Maintenance

The NY-HX Project Management Office (PMO) is responsible for the maintenance of this document, and ensuring the document is reviewed and updated as necessary to reflect changes in the scope management policy. The processes and procedures outlined in this plan will be in effect throughout the project lifecycle. CSC will ensure the document is reviewed every six months and any updates or proposed changes will be discussed with DOH.

2   REFERENCED DOCUMENTS

The Project Management Plan (PMP), and associated governance plans, provides the overarching discipline and management guide that CSC will use to carefully balance quality, scope, time, and cost along with other best practices and Project Management Book of Knowledge (PMBOK) supported processes. By using this comprehensive management approach, the NY-HX project aims to reduce potential risks involved with the successful implementation and operation of the NY-HX contract. Our PMP employs industry best practices, as well as lessons learned from our team's collective experience. Our PMP applies comprehensive performance measurement and quality assurance components throughout the project life cycle, implements performance (cost, schedule, quality) monitoring and controls, incorporates a proactive Communications Management Plan supported by a quantitative risk management approach, and leverages disciplined and proactive scope and change measures throughout the life of the contract.

3   ASSUMPTIONS/CONSTRAINTS/RISKS

- Executing an FFP contract using an Agile SDLC can increase scope risk. One of the primary reasons is that in FFP, CSC is bound by scope and schedule. CSC is educating the team on Agile and incorporating experienced Agile resources within the contract. CSC has a documented SDLC, documented and confirmed Acceptance Criteria with DOH, trained the team and DOH in Agile SDLC, deployed Agile coaches in Sprints, is seeking additional Agile SDLC resources, and is monitoring progress tightly with metrics.
- All stakeholders are integral to the success of the SMP and CCMP and are responsible for understanding and assisting with managing project scope, identifying variations in scope and escalating items for review by CSC's Scope Change Review Board (SCRB). Stakeholder involvement may also be necessary to complete analysis and impact assessments on CSRs before they are brought to the DOH Scope Control Board (SCB) for disposition. Lack of stakeholder awareness and of the baseline scope and failure to adhere to the SMP and CCMP plans, may present unintended consequences to the project implementation and schedule.
- Some requirements for the NY-HX Solution were not finalized by CMS and NYS DOH at the time of CSC's NY-HX proposal submission. Furthermore, Federal rules and regulations governing the Design Development and Operation of Exchanges had not been finalized as of the award date of the NY-HX contract to CSC. CSC recognizes that scope, schedule, and/or budget for the project may be impacted as requirements become better defined, and that depending on the outcome of finalized requirements, this may present additional risk to the project. The responsibility to identify these variations is shared across the stakeholder community.
- CSC submitted a firm fixed price proposal for the development of an operational-ready solution, including the key staff and associated hardware and software defined in the FAS, with the understanding that as additional requirements become known and additional funding becomes

available, the Department will amend the contract for the additional work. Per FAS Section III, Scope of Work, changed requirements may impact the schedule or require additional funding. The project schedule has been baselined; therefore overall scope must stay the same, or even shrink, in order to maintain the schedule. CSC further understands the Department's intent to leverage the supplemental labor funding for Change System Requests (CSRs). Any changes that are created will have the requirements processed in accordance with the SMP and the CCMP.

4 SCOPE AND CHANGE CONTROL MANAGEMENT APPROACH

The lack of proper scope management and timely handling of CSRs may introduce risks to the project's execution and delivery schedule. CSC's scope and change control management approach takes into consideration that in an Agile environment, the delineation between progressive elaboration and scope increase, needs to be firmly understood by the Sprint Teams, including the Scrum Masters and Product Owners. Once the baseline requirements are approved, any variations to project scope need to be quickly escalated and addressed via the change control process. Table 4-1 outlines the considerations and CSC's associated SMP approaches pertaining to scope management.

Consideration	Scope Management Plan Approach
Requirements are not always obvious and have many sources.	Well-orchestrated Enterprise Level and Process Area blueprint sessions are designed to "flush out" details through an iterative process of discovery and capture.
Requirements are not always easy to express clearly in words.	Process flow models help to clarify requirements by representing complex concepts visually.
There are many different types of requirements at different levels of detail.	Careful classification by type and proper assignment of attributes will assist in defining the various levels of requirements.
The number of requirements can become unmanageable if not controlled.	Proper use of requirements management tools, and maintaining a disciplined Change Management process, will ensure that requirements changes are controlled by the NY-HX Program management.
Requirements for a given process, may be related to one another, as well as to other deliverables in a variety of ways.	Must have a complete traceability strategy that is comprehensive for all components, and sophisticated enough to facilitate forward and backward referential integrity (vertical) between requirements, system components, as well as facilitate same level referential integrity (horizontal) between objects.
Requirements have unique properties or property values. For example, they are neither equally important, nor equally implementable.	A meaningful, comprehensive classification and attributing scheme can provide team members with the ability to assign value to a requirement. This will be accomplished by assigning a release number and a priority to the requirement once the release strategy has been finalized.
There are many interested and responsible parties, which means requirements need to be managed by cross functional groups of people.	The Scope Management Plan must be inclusive of cross-functional stakeholders and must specify checkpoints and procedures for ensuring proper review.
Requirements change.	Must have an effective Scope Management Plan and Change Management Plan that establishes a defined process for assessing and approving requirement change requests.
Requirements can be time-sensitive.	Proper classification and characterization should recognize release-sensitivity as an attribute.

Figure 4-1 Scope Management Consideration

4.1 Overall Strategy for Scope and Change Control Management

The SMP and CCMP for the NY-HX project, while allowing for progressive elaboration of baseline requirements to occur during the Agile Scrum methodology, are designed to prevent "scope creep" without acknowledgement, assessment, and authorization. CSC has implemented a comprehensive scope and change control management approach that includes a standardized process for early identification, assessment, and tracking of CSRs. The CSC Business Architect and Scope and Change Manager will provide oversight, guidance and governance on the following steps of the SMP and CCMP:

- Establish Program Scope Management Strategy
- Define and Document Scope Baseline
- Identify and Submit CSRs
- Analyze CSRs
- Review by Scope Change Board ("SCB")
- Provide Recommendation on CSRs to Scope Change Review Board ("SCRB")
- SCRB CSR Disposition
- Change Notification and Release

Figure 4-2 illustrates the change management process that is the control mechanism for all variations to project scope; whether additional requirements, removal of requirements, or a requirements swap out identified via requirements prioritization by the Product Owner within the Sprint Team. The objective for following this strict process to manage scope and change is to produce a system that contains only approved requirements.
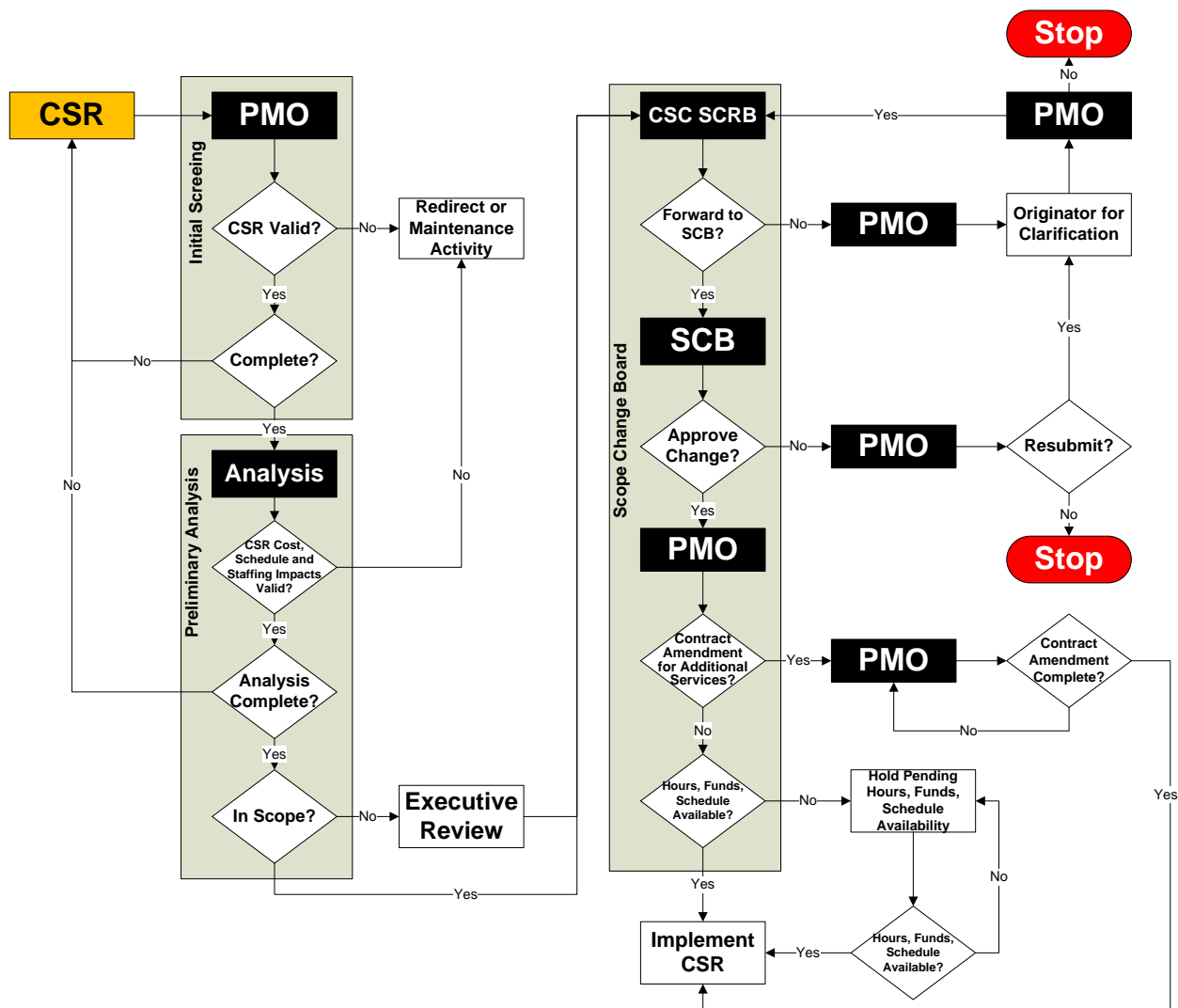
Figure 4-2 CSC Scope and Change Control Process

4.1.1 Tools, Techniques and Processes

CSC is leveraging industry and company best practices for scope and change control management, including proven tools, techniques, and processes being utilized from its New York eMedNY program. Examples include infrastructure, project management tools, as well as long-term working knowledge from many of our experienced staff. The tools used for NY-HX scope and change management include, but are not limited to:

- CSR Tracker in SharePoint
- IBM Rational Suite
- MS Project Server 2010
- eMedNY and CSC processes and procedures

4.1.1.1 Scope Tracking and Change Control Management Tool

The core requirements for the NY-HX project, as outlined in the contract between CSC and DOH, are captured and tracked using the Rational tools suite (described in the Configuration Management Plan).

Each high level requirement will be documented in the Rational Requirement Composer (RRC), and further defined by creating a set of "user stories," which are tracked in Rational Team Concert (RTC). Defining requirements via user stories, is an Agile approach to eliciting necessary system functions and features from a user perspective. The majority of user stories will be created by the individual Sprint Teams, via scope guidance from the Business Architect and in conjunction with their Product Owners and SME's (subject matter experts represented by NY DOH) during the initial Sprint 0 planning phase of the individual tracks. The Change Control Management System (CCMS) is comprised of the SharePoint Scope Tracker, Rational Requirements Composer and Rational Team Concert.

4.1.1.2 *SharePoint Scope Tracker*

Located on the NY-HX SharePoint portal, Scope Tracker is the initial entry point of the CCMS. This tool is used by the project team to document identified variations in the baseline scope. Scope Tracker is available to all team members, with the appropriate security roles as defined by CSC and DOH management, and is the initial point of entry for any potential scope changes. This could include functional requirement (User Story) changes, infrastructure changes, documentation changes, etc. Scope Tracker is used by the SCRB to document the scope change triage and to track the disposition through the CCMP. All reporting for CSRs prior to SCB approval will be generated via Scope Tracker.

4.1.1.3 *Rational Requirement Composer (RRC)*

The Sprint Team uses RRC to organize, prioritize, track, and control changing requirements of the NY-HX application. Also part of the CCMS, RRC is the system of record for all requirements details and also a status medium for the Sprint Team project resources throughout the project. Specifically, RRC is used for the following:

- The baseline requirements are entered into RRC and subsequently traced through the SDLC
- Tracking requirements attributes as the requirements definition evolves through the project life cycle.
- Progressive elaboration of high level User Stories into more granular workable User Stories.
- Aligning requirements with the project sprint schedule in accordance with the Agile methodology.

The NY-HX project utilizes the IBM Rational suite of software for managing the design, development and testing, including tracking approved changes to the product inventory. NY-HX SharePoint will be used for tracking proposed changes, along with their final dispositions. Approved changes will be added to the Requirements Traceability Matrix for tracking and reporting.

4.1.1.4 *Rational Team Concert (RTC)*

RTC, the final component of the CCMS, provides a collaborative change management solution that is essential to the SMP and CCMP. RTC has features such as change tracking, process automation, planning, reporting, and testing and lifecycle traceability. All of which enable better insight, predictability, and control of software and systems development, along with their associated changes. RTC's collaborative change management capabilities and benefits are used to:
- Customize work item attributes and capabilities to track and coordinate tasks and workflows for any purpose, governed by the team's selected processes
- Extend the traditional notion of change management from just work items, to include planning and tracking, by linking work items to actionable plans to support Agile project planning capabilities
- Automate dashboards and reporting for transparency and monitoring
- Provide requirements change management and traceability to the project team
- Provide a collaboration hub for a distributed, decentralized enterprise change management view

4.1.2 Scope and Change Control Management Methodology Standards

The Scope Management methodology and standards utilized by the NY-HX project are based on proven Project Management Institute (PMI) assessed scope management methodology and standards developed and used by CSC, and integrated with Agile development practices. The key ingredients of this methodology are:

- Once CSC and NYS DOH establish an agreed upon a set of baseline user stories in Sprint 0 that will comprise the product inventory, changes to the baseline will only be allowed through a formal change control process.
- Proposed changes to project scope must follow the scope change control process, which is monitored by the (SCRB).
- Only when CSRs are reviewed and approved by the SCB, is the scope of the project changed.
- The Scope and Change Manager is responsible for the overall execution of the SMP and CCMP, with a reporting line directly to the Project Management Office (PMO).
- All program stakeholders are involved in CSRs. Stakeholders include program staff, customers and users, supporting organizations, and representatives of systems that interface with NY-HX.

4.1.3 Technical Performance Metrics

CSC's approach to performance management includes detailed technical program metrics that provide transparency on the performance of the project teams throughout the complete project lifecycle. The PMO, as the governing body, collects metrics on the number of CSRs and their disposition on a weekly basis, and uses this data to quantify changes and impacts to the SCB during the Weekly PMO Project Status Meeting. The PMO will also use the burn metrics and weekly and biweekly variations in user story points as a mechanism to escalate potential changes in scope versus the standard process of progressive elaboration associated with the Agile methodology. In the weekly Scope Management reporting process, frequent changes in a specific functional area will flag the PMO to escalate to the Project Director and Requirements Manager for additional root cause analysis.

To track progress, the PMO is planning to report as follows:

Metric	Collection Method	Use(s)
Number of Baseline Requirements	Captured in the CSC Requirements Traceability Matrix (RTM)	Measures the volatility of the overall Requirements as it relates to the initially defined requirements for the NY-HX Program
Number of Decomposed User Stories	Captured by requirement cycles in Metric report	Measure overall NY-HX Program risk status as well as status in each key area of impact
Number of requirements fielded	Captured in the Metric report	Measure the actual number of user stories and story points that NY-HX has completed through the Sprint cycles
Number of CSRs	Captured in the Metric report	Measure the number of requested changes that the SCB has approved as a request to change the baseline

Figure 4-3 Planned Technical Performance Metrics

4.1.4 Detailed Integrated Master Schedule

The detailed Integrated Master Schedule (IMS) maintained in Project Server 2010, including the WBS, is progressively defined at increasing levels of details, and may therefore incorporate additional work

products and dependencies throughout the program. Status updates are incorporated and tracked on a weekly basis. The PMO uses the IMS to assess the impacts of an CSR during the SCRB process. This includes additional activities in the WBS along with associated dependencies, level of effort, resource assignments and the start and finish dates for the additional work packages. CSC will use this information in managing the project schedule and to determine what, if any, impacts to the implementation schedule will result during the analysis process. This information will be captured by the SCRB and included with the Change Control Checklist (Appendix C) provided to the SCB. Once a CSR is approved, the details for the CSR will be memorialized and baselined within the IMS to be tracked and measured as part of the project's implementation.

4.2 Roles and Responsibilities

Scope and change control management is a shared responsibility across the entire NY-HX project team, and includes stakeholders in either management or supporting roles. This section outlines the roles and details the responsibilities of positions involved in the SMP. In some cases, team members may be responsible for several roles.

4.2.1 CSC Scope Change Review Board

The SCRB, facilitated by the CSC Scope and Change Manager, is comprised of several key CSC subject matter experts and stakeholders, including the CSC Business Architect, the Scope Change Owner, Quality Assurance Manager, Configuration Manager, Enterprise Architect and other SMEs as appropriate. This Board assesses any potential changes to scope, completes technical analysis, populates the Change Request Checklist and makes recommendations on priority, schedule and budget based on the assessment.

4.2.2 DOH Scope Control Board

The SCB, a DOH managed board, is the ultimate arbiter and decision maker for proposed CSRs. The SCB will evaluate, approve, and prioritize changes based on CSC's impact assessment on scope, cost, schedule, risks, and other impacts of a proposed change. The SCB is the only mechanism for adding to or removing inventory from the project baseline.

4.2.3 CSC Project Director

The CSC Project Director is the facilitator of the SCRB and represents CSCs position and recommendation on the handling of CSRs.

4.2.4 CSC Business Architect

The CSC Business Architect will participate in the Sprint 0 planning session for each release and will ensure that Sprint Team is educated on the scope of the functionality associated with the release. Prior to the end of Sprint 0, the Business Architect will ensure that the Scrum Masters, Requirements Team and Architecture Team have a detailed understanding of the baseline scope to remove potential variations in scope that occur during the progressive elaboration of the User Stories during the execution of the remaining Sprints.

The Business Architect leads the decision making process of the SCRB and is key to the success of the SMP and CCMP. The Business Architect, reporting directly to the Project Director, is responsible for a complete understanding of the global program requirements and is the final CSC decision-maker as to whether a CSR is deemed to be a scope change and requires further action by the SCRB.

4.2.5 CSC Scope and Change Manager

The Scope and Change Manager, as part of the PMO organization, report to the PMO Director. This ensures the Scope and Change Manager adheres to the overall project governance and reporting requirements, and will provide the necessary transparency to the overall project team.

The Scope and Change Manager, is the facilitator of the SCRB, and is responsible for ensuring the CSR details are properly and completely entered into the tools. The Scope and Change Manager also works with the SCRB and appropriate Project Stakeholders to validate the CSR as a scope change, assess its impacts and ensure outcome is provided to the Project Director for discussion at the SCB. The Scope and Change Manager maintains overall responsibility to ensure identified scope changes flow through the process in a timely manner, and with minimal impact on the project execution.

4.2.6 Scope Change Owner

The Scope Change Owner is the stakeholder from the CSC or DOH team who represents and entered the CSR in the Scope Tracker tool in SharePoint. The Scope Change Owner may be available at the SCRB to represent the proposed scope change or transfer knowledge and relevant information to a standing SCRB member.

4.2.7 Product Owner

The Product Owner is a DOH representative who represents the interests of the customer by setting the requirements and priorities of the product in the Sprint Teams. The Product Owner is a member of the SCB.

4.2.8 Scrum Masters and Requirements Team

The role of the Scrum Master is to ensure the team remains focused and committed to the goals of the sprint as negotiated with the Product Owner. The Scrum Master is part of the Requirements Team.

4.2.9 Quality Assurance Manager

The Quality Assurance Manager is a member of the SCRB and will audit the scope and change control management process to ensure adherence to program processes.

4.2.10 Configuration Manager

The Configuration Manager ensures the project output adheres to the organization's configuration standards. The Configuration Manager is a member of the SCRB.

4.2.11 Enterprise Architect

The Enterprise Architect provides guidance and expertise for the technical members of the project team. If the change spans several technical areas (data, software, hardware, network), the Enterprise Architect may request other technical project members be present to discuss the CSR.

4.2.12 Project Stakeholders

For scope and change control management to be successful all Project Stakeholders are responsible for ensuring an understanding of the agreed to project scope, and for documenting and escalating where potential variations exist. As needed, Project Stakeholders will participate in the SCRB to assess the level of effort and impacts of a CSR.

4.3 Project Scheduler

The Project Scheduler will work with the SCRB to determine the best approach for scheduling the CSR, accounting for priority, level of effort, resource assignments and dependencies. Once approved, the Project Scheduler will ensure that the CSR becomes part of the baseline IMS and will communicate the schedule for completion to the project team.

4.4 Responsible Accountable Consulted Informed (RACI) Chart

Figure 4-4 outlines the high-level Responsible-Accountable-Consulted-Informed (RACI) chart showing the roles involved in the implementation of the SMP and their level of participation in each activity.

Key: R = Responsible; performs the task A = Accountable; ultimately answerable for completion of task C = Consulted; provides information or assistance I = Informed; kept apprised of the activity	DOH SCB	Project Director	CSC Business Architect	CSC Scope and Change Manager	Scope Change Owner	Product Owner	Scrum Master and Requirements Team	Quality Manager	Configuration Manager	Enterprise Architect	Project Stakeholders	Project Scheduler
Identify addition or removal of project scope					A	I	I				R	
Submit Scope Change Request into Scope Tracker (Daily)		I	I	A	R	I	I	I	I	I	I	
Perform initial scope assessment			R	C			C			C		
Schedule new SCR for SCRB review		I		RAC	I		C	I	I	C	I	
Conducts CSC SCRB to determine if SCR proceeds to DOH SCB			A	R	C		C	C	C	C	C	
Schedules item for SCB review		I		RA	I	I	C	I	I	I	I	
CSR Approval Disposition	RA		C	C	C	I	C	I	C	I	I	
Determine LOE and potential impact assessment		I	RAC	C	I	I	R	C	C	C	C	C
Approve LOE and impact assessment	RA	C	C	C	C	I	C	C	C	C	C	
Update Scope Tracker and Add to RTC		I		C	I	CI	RA	I	I	I	I	
Add to IMS, baseline and track	I	I	I	I	I	I	I	I	I	I	I	R

Figure 4-4 Scope Management RACI

4.5 Define and Document Scope Baseline

CSCs proposal and defined scope was based on the FAS requirements, which included the CMS Draft Blueprints, and is outlined extensively in Tab 5 of CSC's proposal. The CSC proposal was built upon the initial understanding of these requirements, which were used to provide the basis of effort, costing and pricing based on the widgets defined and outlined in Appendix B: Scope Analysis of DOH Proposed NY-HX Project.

CSC conducted a requirements Gap Analysis phase at the beginning of the project to align the current understanding of the project scope with what CSC had originally proposed. The results of this Gap Analysis, along with CSC and DOH concurrence of project scope, set the baseline for the project's scope. CSC and DOH are in agreement on the baseline scope of the program and share the responsibility of scope management. Any variations are managed through the SMP and CCMP process.

The User Stories are assigned to each core business area, with either a CSC Senior Business Analyst or CSC Senior Policy Analyst to oversee the facilitation and capture of the detailed User Stories for that functional area. The CSC Analyst works directly with the Department Policy SMEs to document the detailed User Stories, which are also based on the scope guidelines identified through working with the

Business Architect. The Business Architect has the responsibility to ensure the team remains aligned with the scope baseline. This expert involvement ensures the team fully understands the committed scope and focuses User Story development, through the remaining Sprint cycles to be in accordance with the agreed upon project baseline defined in Sprint 0.

Should the CSC Business Analyst or Policy Analyst identify gray areas of scope functionality, they will escalate to the Business Architect for guidance, and to clarify whether the functionality is a result of refining the definition of an existing requirement or is deemed a CSR.

4.6 Process for Scope Management and Control

4.6.1 Requirement Elicitation and Prioritization

Re-prioritization of the Product Inventory is typically driven by discovery of new requirements (user stories) for functions and features, and/or imposition of new requirements from Federal changes. The latter is a likely occurrence for the NY-HX requirements, given evolving regulatory understanding of the Affordable Care Act legislation, and the features and functions to be included in Health Benefit Exchanges.

Throughout the Sprint cycles, the Product Owners are responsible for grooming the product inventory (prioritizing, adding or removing requirements, and providing further details as needed), as well as ensuring the teams are working on user stories that are deemed high priority and high value for DOH. While reprioritization of requirements occurs during the Sprint Cycles within each release, any variation to the scope baseline (addition, removal or requirements swap out) will be escalated through the scope and change control management processes. This exchange or swap of requirements results in deferral of requirements until after the implementation of the baseline. The deferred or swapped requirement therefore becomes additional scope during the Operations phase of the project.

In a standard Agile environment, the requirements described as the Product Inventory are regularly assessed and re-prioritized by the Product Owner. Functions, features, and/or capabilities that are below the budget line (not to be done) may get re-prioritized to work that will get done. Any variations to what is prioritized higher and subsequently added "above the line" or "below the line" is typically at the discretion of the Product Owner. On the FFP NY-HX contract, the team is educated and focused on the scope baseline established for the project. Any requirements that are added or removed from the inventory will be documented as CSRs and managed through the CCMP, making them visible to both CSC and DOH management. These trade-offs are crucial to staying on the project schedule and meeting the highest priority requirements. Figure 4-5 illustrates reprioritizing requirements (user stories) that are either added or removed from the project scope and handled as CSRs.
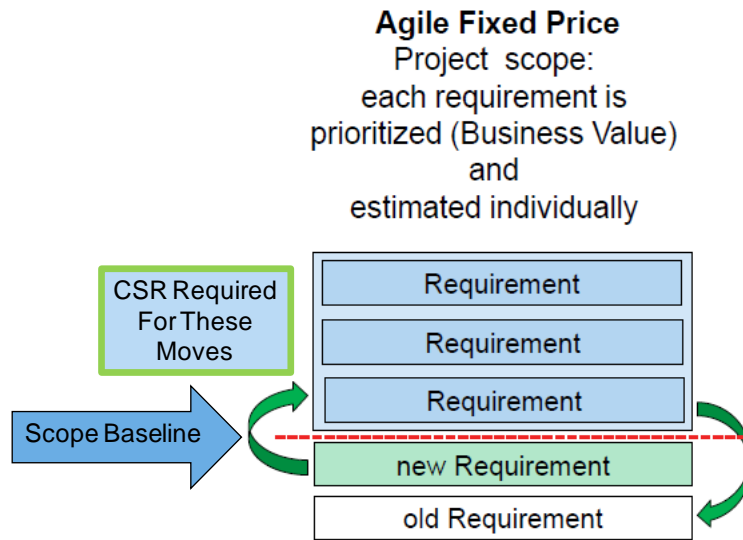
Agile Fixed Price
Project scope:
each requirement is
prioritized (Business Value)
and
estimated individually

Figure 4-5 Standard Agile Product Inventory Reprioritization

As noted in the FAS, changes in scope that involve new or enhanced requirements (user stories) will drive the need for schedule impact analysis. The additional resources will be provided wherever possible through the addition of Supplemental labor funding. Examples of changes which may require the addition of supplemental labor funding include:

- Additional scope identified in the Gap Analysis
- New or enhanced requirements identified in the course of the releases
- Department request of supplemental staff resources
- Delays in schedule due to Department requested changes

4.6.2 Identify and Submit CSR

The Business Analyst or Policy Analyst, through education by the Business Architect, is responsible for having a detailed understanding of the scope baseline for their respective subject area. The Business Analyst or Policy Analyst will document and track the users stories in RTC, using the RTM in the tool to trace the detailed user stories back to the baseline scope. Throughout the execution of Sprints, they will serve as the driver to ensure the Sprint Teams remain focused the project schedule and identify departures from the agreed to scope baseline. Since scope management is a shared responsibility across the CSC and DOH project teams; all team members will have the ability to enter perceived CSRs into the Scope Tracker tool (Figure 4-6) in SharePoint. Due to the tight schedule and collaborative agile development methodology, it is expected that variations in scope are raised in a timely manner. The Sprint Teams will execute under the guidance that if questions on scope arise and there is uncertainty among the team, they will be escalate for evaluation by the Business Architect.
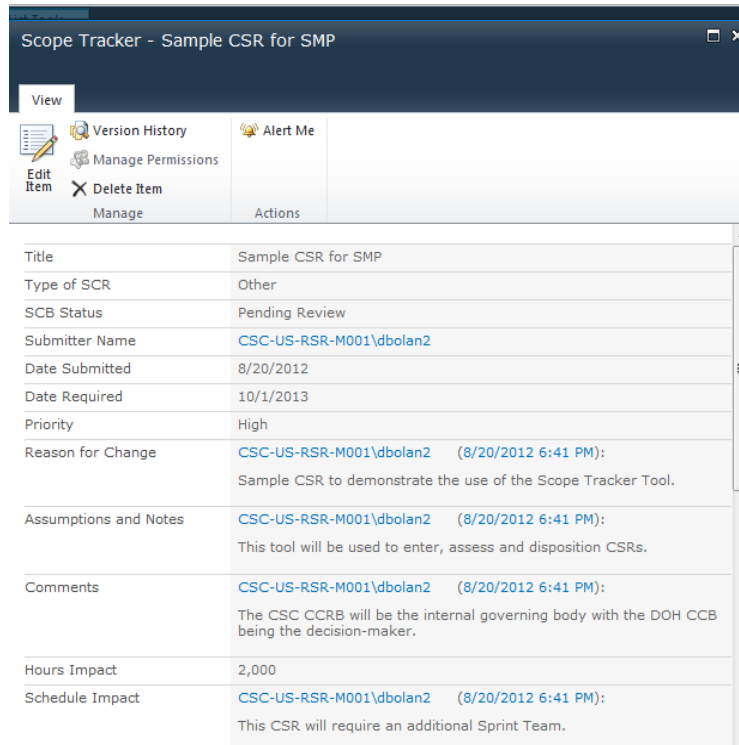
Figure 4-6 Snapshot of CSR Entered into Scope Tracker

4.6.3 Analyze CSR

The process for analyzing a CSR, includes an evaluation and prioritization of proposed changes to the project scope by determining if the CSR can first be mapped back to a baseline requirement via the RTM in RTC. An initial screening is completed by a subset of SMEs prior to the inclusion of the SCRB for additional analysis.

4.6.3.1 *Initial Screening*

Upon entry of CSRs into Scope Tracker, the Scope and Change Manager reviews the CSR for validity and completeness. If the CSR is deemed invalid either during this screening, or during any point in the analysis process, it is redirected back to the Scope Change Owner for additional information. If this screening or any point in the analysis process yields pertinent information is missing, the Scope and Change Manager will follow up with the Scope Change Owner to secure any additional details needed to ensure a complete understanding of the CSR.

4.6.3.2 *Preliminary Analysis*

Each week, the Scope and Change Manager, Business Architect, and Requirements Manager will jointly complete a preliminary analysis of the CSRs entered into Scope Tracker for the week's period. This team will review the CSRs for completeness and determine based on the RTM in RTC and their expert judgment whether or not the CSR is deemed out of scope and should be handled via the SCRB.

4.7 Review by SCRB

The SCRB is comprised of CSC SMEs who will research the CSR against the baseline scope via the RTM, and document the lineage that supports that the CSR is out-of-scope. The SCRB process is two-fold consisting of an initial and final analysis based on SCB direction.

4.7.1.1 *SCRB Initial Analysis*

The goal of the initial review is to provide the SCB with a CSR priority, any potential infrastructure impacts, and a high-level rough of magnitude (ROM) with the SCRB's confidence level for the ROM. This is reflective of the effort to implement the CSR and the expected level of effort needed to complete the final analysis of the CSR, using the following approximate parameters classifications to develop the detailed estimate:

- Up to 8 hours
- Up to 24 hours
- Up to and Greater than 40 hours

This information is used by the SCB to determine whether or not CSC is to proceed with a more detailed level of effort (LOE) determination and impact assessment.

4.7.1.2 *SCRB Final Analysis*

CSC will target the assessment to be completed within five business days of SCB approval to proceed with further analysis. The SCRB will complete a deep dive, using the Change Control Checklist (Appendix B) to define the detailed estimate for the work that needs to be completed for the CSR. In addition to the Supplemental Staff effort required, this effort estimate will include any addition infrastructure or support items needed to support the CSR. The Scope and Change Manager, using the estimate provided by the SMEs on the SCRB, works with the Project Scheduler to incorporate the CSR into the Work Breakdown Structure (WBS) in the IMS and determines impacts to resources, schedule and specifically the critical path.

4.8 **Provide Recommendation on CSRs to the DOH SCB**

Each week the SCRB will provide details on the recommended CSRs, to the SCB for approval, rejection or deferment to a later time. Consistent with the SCRB process, the SCB process is two-fold consisting of an initial and final analysis based on SCB direction.

4.8.1.1 *SCB Initial Analysis*

The SCB will review the proposed priority, ROM and any potential infrastructure impacts as part of its initial review. This initial review yields a priority change, a deferment or rejection of the CSR or a direction for CSC to proceed with a more detailed impact assessment using supplemental staff resources.

4.8.1.2 *SCB Final Analysis*

At completion of the impact assessment, the SCRB will provide to the SCB the detailed Change Control Checklist (Appendix B) including the LOE, estimated infrastructure costs and the results of the schedule impact assessment. As additional requirements become known and additional funding becomes available the Department will amend the contract for the additional work based upon the labor rates supplied in the contractor's proposal for the labor categories identified in Attachment 2, Section 12, Staffing.

4.9 **SCB CSR Disposition**

The Scope Tracker will be updated with the status of the SCB disposition weekly. Deferred or rejected CSRs will be updated to reflect the reason for deferment or rejection, and if appropriate, when the SCB would like to review or revisit the CSR in the future.

Approved changes will be recorded in Scope Tracker and will be added to RRC and into the RTM to be implemented. CSC will send a formal transmittal to DOH summarizing the approved changes and will expect DOH approval of the transmittal within five business days of submission. To execute the approved

CSR, the supplemental labor funding will be exercised as outlined in the FAS Section III – Scope of Work, and the pending effort will be solidified and baselined in the IMS.

4.10 Change Notification and Release

The approved CSRs will be incorporated as part of a Sprint for an appropriate release and track of work to be implemented by the project team. The Sprint Team responsible for implementing the CSR will be notified of the SCB decision by the Scope and Change Manager, and will be responsible for implementing the CSR in accordance with the plan provided by the SCRB to the SCB.

4.11 Monitor, Track and Report

All approved CSRs will be managed throughout the implementation via the RTM, in order to ensure development and testing occur according to the implementation methodology. All approved CSRs are added to the RTM in RTC and are solidified in the IMS for monitoring, tracking and reporting. This process will provide traceability of the CSR, as well as a mechanism for tracking the effort to complete the scope change. The PMO will track and monitor all approved CSRs and will report on their respective status until satisfied via the project schedule.

Appendix A   GLOSSARY/ACRONYMS

Please refer to the Master Project Management Deliverables Glossary and Acronym List posted on the Deliverables Section of the NY-HX SharePoint site.

Appendix B   Scope Analysis of DOH Proposed NY-HX Project

Per CSC's proposal response to the FAS (page 5-4), CSC's fixed price for the DDO phase of this project is predicated on and bound by CSC's understanding of the size of the project and the number of components needed to create an operationally ready NY-HX Solution, as expressed by the data given below, and further detailed in the referenced exhibits available in CSC's proposal.

Work Area	Source(s) of Requirements	Details of work area requirements	CSC Quantification of Scope (Basis of Estimate)	Estimating Method used by Team CSC
Requirements	NY State FAS, CMS Blueprint Exchange Reference Architecture	Tab 5 Business Requirements Exhibits 5.2-2, 5.3-2, 5.4-2, 5.5-1	47 Business Processes, requiring 47 JAD sessions at a pace of approximate 2 JAD sessions per week; Requirements Definition Document produced and reviewed	CSC SOASure model; prior experience via eMedNY SDLC and MA Commonwealth Connector
Design	NY State FAS, CMS Blueprint Exchange Reference Architecture, CMS MITA Guidance	Tab 5 Business Requirements Exhibits 5.2-2, 5.3-2, 5.4-2, 5.5-1	199 Core business services and 183 supporting business services supporting 47 business processes; System Design Document produced and reviewed	CSC SOASure model; prior experience via eMedNY SDLC, MA Commonwealth Connector, CMS projects
Coding and Architecture	NY State FAS, CMS Blueprint Exchange Reference Architecture, CMS MITA Guidance, eMedNY SDLC prior experience	Tab 5 Business Requirements Exhibits 5.2-2, 5.3-2, 5.4-2, 5.5-1	710 components identified to be developed, including SOA Web services, portlets, business rules, workflows and interfaces	QSM© SLIM Estimate tool, eMedNY SDLC Prior experience, MA Commonwealth Connector
Testing	NY State FAS	Tab 5 Business Requirements Exhibits 5.2-2, 5.3-2, 5.4-2, 5.5-1; Sections 6.7.4.2 System Testing, 6.7.5 User Acceptance Testing	710 components identified to be tested; SIT test cases are the basis for SIT and UAT tests; maximum of two cycles per test in SIT and UAT, after which Severity 1 defects are repaired and remainder are prioritized	Prior experience with eMedNY SDLC
Training and Documentation	NY State FAS	Tab 7 Staffing Requirements	Included content management for 1500 pages of content; 10 EBT learning modules produced; one train-the-trainer session per learning module conducted	Prior experience with eMedNY SDLC
Management	NY State FAS	Tab 7 Staffing Requirements	FAS requirements for Key Staff, plus CSC's prior experience with eMedNY SLDC	FAS requirements for Key Staff, plus CSC's prior experience with eMedNY SLDC
Operations	NY State FAS	Tab 6 Technical Requirements	Attachment 2 Technical Requirements	eMedNY operations prior experience

Work Area	Source(s) of Requirements	Details of work area requirements	CSC Quantification of Scope (Basis of Estimate)	Estimating Method used by Team CSC
Supplemental Hours	NY State FAS Attachment 16	N/A	Level of Effort (LOE) as specified in the FAS	N/A

Appendix C   Change Control Checklist

Change Control Checklist

Implications of the Proposed Change	
o	Identify any existing requirements in the baseline that conflict with the proposed change.
o	Identify any other pending requirement changes that conflict with the proposed change.
o	Identify any conflict with known NY-HX initiatives.
o	What are the consequences of not making the change?
o	What are possible adverse side effects or other risks of making the proposed change?
o	Will the proposed change adversely affect performance requirements or other quality attributes?
o	Will the change affect any system component that affects critical properties such as safety and security, or involve a product change that triggers recertification of any kind?
o	Is the proposed change feasible within known technical constraints and current staff skills?
o	Will the proposed change place unacceptable demands on any computer resources required for the development, test, or operating environments?
o	Must any tools be acquired to implement, test and/or monitor the change?
o	What is the impact to the NY-HX Testing Team and test plans?
o	How will the proposed change affect the sequence, dependencies, effort, or duration of any tasks currently in the Project plan?
o	Does this change impact schedule, cost or functionality of planned NY-HX Roadmap initiatives?
o	Will prototyping or other user input be required to verify the proposed change?
o	How much effort that has already been invested in the Project will be lost if this change is accepted?
o	Will the proposed change cause an increase in product unit cost, such as by increasing third-party product licensing fees?
o	Will the change affect any marketing, manufacturing, training, or customer support plans?

System Elements Affected by the Proposed Change	
o	Identify any user interface changes, additions, or deletions required.
o	Identify any changes, additions, or deletions required in reports, databases, or data files.
o	Identify the design components that must be created, modified, or deleted.
o	Identify hardware components that must be added, altered, or deleted.
o	Identify the source code files that must be created, modified, or deleted.
o	Identify any changes required in build files.
o	Identify existing unit, integration, system, and acceptance test cases that must be modified or deleted.
o	Estimate the number of new unit, integration, system, and acceptance test cases that will be required.
o	Identify any help screens, user manuals, training materials, or other documentation that must be created or modified.
o	Identify any other systems, applications, libraries, or hardware components affected by the change.
o	Identify any third party software that must be purchased.
o	Identify any impact the proposed change will have on the Project's software Project management plan, software quality assurance plan, software configuration management plan, or other plans.
o	Quantify any effects the proposed change will have on budgets of scarce resources, such as memory, processing power, network bandwidth, real-time schedule.
o	Identify any impact the proposed change will have on fielded systems if the affected component is not perfectly backward compatible.

Effort Estimation for the Proposed Change	
(Labor Hours)	**Task**
0.00	Update the requirements database with the new requirement
	Develop and evaluate prototype
	Create new design components
	Modify existing design components
	Develop new user interface components
	Modify existing user interface components
	Develop new user publications and help screens
	Modify existing user publications and help screens
	Develop new source code
	Modify existing source code
	Purchase and integrate third party software
	Identify, purchase, and integrate hardware components; qualify vendor
	Modify build files
	Develop new unit and integration tests
	Modify existing unit and integration tests
	Perform unit and integration testing after implementation
	Write new system and acceptance test cases
	Modify existing system and acceptance test cases
	Modify automated test drivers
	Perform regression testing at unit, integration, and system levels
	Develop new reports
	Modify existing reports
	Develop new database elements
	Modify existing database elements
	Develop new data files
	Modify existing data files
	Modify various Project plans
	Update other documentation
	Update requirements traceability matrix
	Review modified work products
	Perform rework following reviews and testing
	Recertify product as being safe, secure, and compliant with standards
	Other additional tasks
0.00	**TOTAL ESTIMATED EFFORT**

Procedure:

1	Identify the subset of the above tasks that will have to be done.
2	Allocate resources to tasks.
3	Estimate effort required for pertinent tasks listed above, based on assigned resources.
4	Total the effort estimates.
5	Sequence tasks and identify predecessors.
6	Determine whether change is on the Project's critical path.
7	Estimate schedule and cost impact.

Appendix D   Sample CSR Timeline

Task	Day	Number of days (d) in Process
Identify addition or removal of project scope	Daily, as identified	
Submit Scope Change Request into Scope Tracker	Daily, as identified	
Perform initial scope assessment	Weekly, Friday	D
Schedule new CSR for SCRB review	Weekly, Friday	D
Conducts CSC SCRB to determine if CSR proceeds to DOH SCB	Weekly, Monday	D+1
Schedules item for SCB review	Weekly, Wednesday	D+3
CSR Approval Disposition	Weekly, Wednesday	D+3
Determine LOE and potential impact assessment	Weekly, Monday	D+6
Approve LOE and impact assessment	Weekly, Wednesday	D+8
Updated Scope Tracker and Add to RTC	Weekly, Wednesday	D+8