Agile Guide for Major Information Resources Projects (MIRPs)

Process Guide

May 2024

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1.0 INTRODUCTION

1.1 PURPOSE

As Texas State agencies and organizations modernize and enhance their information technology (IT) profiles via various information resources projects in preparation for their Legislative Appropriations Requests (LARs) and Biennial Operating Plans (BOPs), many also seek to adapt and improve their IT project management methods.

Historically, IT projects primarily have leveraged a standard Waterfall project methodology, in which a project is defined using a linear, sequential process that follows a strict set of steps requiring deliverables for each stage. A Waterfall approach is well-suited to projects that must meet strict regulations and have a clear vision of the final product, ideal for state government IT projects. However, this approach can discourage change and evolution during a project, which can be extremely limiting and result in a final product that is less than optimal. Additionally, projects using a Waterfall methodology tend to take more time to complete than those following other methodologies, making this approach less appealing for agencies.

> **COMMON METHODOLOGIES FOR MIRPS**
>
> **AGILE METHODOLOGY**
>
> The agile methodology is a way to manage a project by breaking it up into several iterations. It involves constant collaboration with stakeholders and continuous improvement at every cycle. Once the development begins, various teams' cycle through a process of planning, executing, and evaluating.
>
> **WATERFALL METHODOLOGY**
>
> The Waterfall methodology is a traditional approach to project management through which tasks and phases are completed in a linear, sequential manner, and each stage of the project must be completed before the next begins.

Organizations are increasingly looking to adopt an Agile project methodology, which is a more flexible, iterative approach that emphasizes collaboration, adaptability, and customer satisfaction. An Agile approach involves a constant cycle of feedback from end users, allowing for changes in requirements and other pivots throughout the project lifecycle. An Agile methodology is suitable for projects that must deliver quick results while maintaining adaptability and focusing on the best outcomes for customers.

Constraints of an Agile approach include the complexity of the coordination and collaboration required of team members, stakeholders, and end users. Teams using an Agile methodology often find it challenging to communicate a project's status effectively to various stakeholders. While this approach encourages flexibility, an Agile methodology might also create an

environment for scope creep, leading to serious impacts to both project schedule and budget, which may alarm stakeholders.

While agencies have the flexibility to choose their preferred IT project methodology, Texas state agencies must adhere to statutory requirements governing IT projects and their management (see text box). Regardless of project methodology, statutory requirements must be accommodated and followed.

The State of Texas has several requirements for all IT projects, but there are very specific requirements associated with any IT project that is designated a Major Information Resources Project (MIRP). This guide is designed to assist agencies in adapting an Agile methodology to ensure compliance with all Texas statutory requirements for MIRPs.

The Digital Project Services team at the Texas Department of Information Resources (DIR), in consultation with the statewide Project Delivery Advisory Board and the Quality Assurance Team (QAT), created DIR's Texas Project Delivery Framework (TPDF) tools and templates for use with all MIRPs. These required tools and templates, in conjunction with the Agile guidelines for MIRPs outlined in this document, help enable state and local entities to achieve their core missions and objectives through successful project delivery. Further, using these guidelines—in addition to the required DIR TPDF tools and templates for MIRPs—can help organizations achieve project consistency and standardization, leading to successful outcomes.

STATUTORY REQUIREMENTS FOR IT PROJECT MANAGEMENT

The following rules and regulations provide directives for all information resources projects at Texas agencies:

TEXAS ADMINISTRATIVE CODE, CHAPTER 216

Provides statutory rules for all agencies to follow in regard to project management policy and practices.

TEXAS GOVERNMENT CODE, CHAPTER 2054

Outlines statutory requirements for agencies and institutions of higher education as they relate to the Quality Assurance Team. Includes a provision directing agencies to follow QAT-published policies and procedures.

QAT POLICIES AND PROCEDURES

A detailed "how to" guide consolidating all statutory requirements relating to the QAT and providing specifics on how agencies and organizations can ensure compliance.

GENERAL APPROPRIATIONS ACT, ARTICLE IX

Includes directives and requirements for state agencies using funding approved via the General Appropriations Act, including requirements for IT projects and contracts.

Texas Project Delivery Framework Stages

Figure 1 - DIR's Texas Project Delivery Framework Stages and Associated Documentation outlines the five stages (Initiate, Plan, Execute, Monitor & Control, and Close) of the TPDF lifecycle, including associated required documentation for MIRPs. Largely based on standard Project Management Book of Knowledge (PMBOK) concepts and terminology, the Texas Project Delivery Framework (TPDF) is designed to help ensure that all stakeholders are involved in the project and that the project is executed transparently and collaboratively. Additionally, the TPDF helps meet the Texas Legislature's goal for a comprehensive plan at the time a MIRP is initiated (Texas Government Code, Section 2054.003(b)). The structure of this guide aligns with the TPDF's stages, walking users through the process from start to finish in conjunction with the application of the Agile methodology.
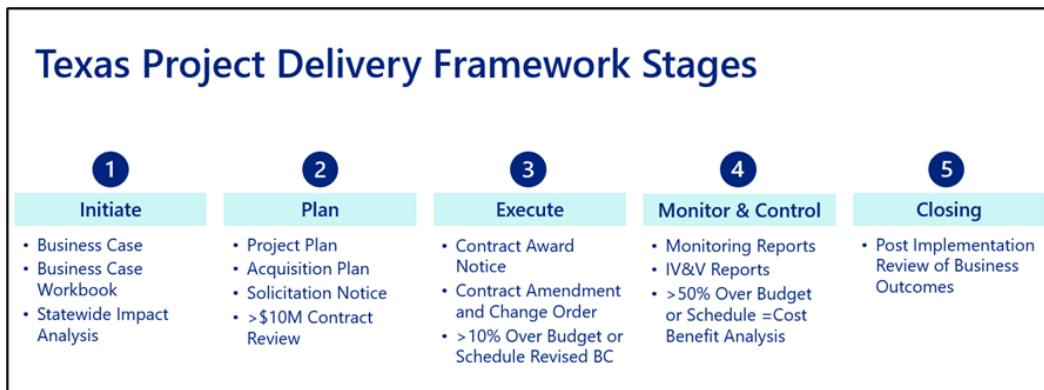

Texas Project Delivery Framework Stages

1 Initiate	**2** Plan	**3** Execute	**4** Monitor & Control	**5** Closing
• Business Case • Business Case Workbook • Statewide Impact Analysis	• Project Plan • Acquisition Plan • Solicitation Notice • >$10M Contract Review	• Contract Award Notice • Contract Amendment and Change Order • >10% Over Budget or Schedule Revised BC	• Monitoring Reports • IV&V Reports • >50% Over Budget or Schedule =Cost Benefit Analysis	• Post Implementation Review of Business Outcomes

Figure 1 - DIR's Texas Project Delivery Framework Stages and Associated Documentation

For any questions on project management practices, please contact the QAT at QAT@dir.texas.gov.

1.2   SCOPE

This guide is intended for state agencies and institutions of higher education (IHEs) using an Agile project methodology in conjunction with the TPDF for projects that meet MIRP criteria. Figure 2 - Examples of MIRP Solution Types shows some, but not all, of the possible solutions that are applicable for MIRPs; if any uncertainty arises about a project's status as a MIRP, contact the QAT for assistance.

Custom Development	SaaS + Integration	COTS + Customization
Legacy / Data Migration	Enhancement or Follow-up	When in Doubt Contact QAT!!

Figure 2 - Examples of MIRP Solution Types

For projects that meet the Government Code, Chapter 2054, definition of a MIRP, the following [DIR TPDF Templates](#) in Table 1 are required to be submitted to the QAT, regardless of project management methodology. Click the Template Name to access the template.

Table 1 – DIR TPDF Templates				
Stage	**Template Name**	**File Format**	**Description/Purpose**	**Submittal Circumstances**
Initiate (Government Code, Section 2054.303)	**Business Case**	.docx	The Business Case defines the business need along with the necessary information from a business standpoint to determine whether the project is worth the required investment. It demonstrates alignment to business and strategic objectives and is used to prioritize the project.	Submit as part of an LAR for a BOP during a legislative cycle; outside of the legislative cycle, submit it with a BOP amendment. Must be submitted before any solicitation or expenditure of 10% or more of project funds. Submit revisions when costs and/or the schedule increase 10% or more, or if there is significant scope change.
Initiate (Government Code, Section 2054.118)	**Business Case Workbook**	.xlsx	The Business Case Workbook provides quantified estimates of business solution costs, project benefits, and return on investment.	Submit with the Business Case. Submit revisions when costs and/or the schedule increase 10% or more, or if there is significant scope change. Must be submitted before any solicitation or expenditure of 10% or more of project funds.
Initiate (Government Code, Section 2054.303 (a)(2)(A))	**Statewide Impact Analysis**	.docx	The Statewide Impact Analysis provides information necessary for assessment of the project's impact on the use of IT resources across the state.	Submit with the Business Case (once). Must be submitted before any solicitation or expenditure of 10% or more of project funds.
Initiate (Government Code, Section 2054.303 (a)(2)(B))	**Technical Architecture Assessment***	.docx	The Technical Architecture Assessment describes the project's proposed technical architecture to ensure that industry-accepted architecture standards are used in planning for	Submit with the Business Case if requested by the QAT (once). Must be submitted before any solicitation or expenditure of 10% or more of project funds.

Table 1 – DIR TPDF Templates				
Stage	**Template Name**	**File Format**	**Description/Purpose**	**Submittal Circumstances**
			implementation. Note: This is only required if requested by the QAT.	
Plan (Government Code, Section 2054.304 (b))	**Project Plan**	.docx	The Project Plan defines how the project is executed, monitored & controlled, and closed.	Submit initially before any solicitation is awarded and/or expenditure of 10% or more of project funds. Submit revisions if there are major changes to the project scope, cost, or schedule.
Plan (Government Code, Section 2054.305)	**Acquisition Plan***	.docx	The Acquisition Plan includes procurement planning information for acquiring goods and services outside of the organization through the management of solicitations, contracts, and other agreements. Note: The Acquisition Plan is required only for a project issuing a vendor solicitation valued at $10 million or greater and for agencies assigned additional monitoring under Texas Administrative Code Chapter 216.	Submit initially before any solicitation is awarded and/or expenditure of 10% or more of project funds. Submit revisions if there are major changes to the procurement or project scope, cost, or schedule.
Execute and Monitor & Control (Government Code, Sections 2054.160 (d) and 2054.307 (b); General Appropriations Act (GAA), Section 9.01(e))	**Contract Amendment and Change Order Approval (CACOA)**	.docx	The CACOA is used to document any changes in scope or cost. The form must be submitted to the QAT if an amendment/change is needed. If an overage causes a particular contract to exceed the contract amount by 10% or more, a CACOA must be submitted.	Submit for each contract amendment or change order over 10%.

Table 1 – DIR TPDF Templates				
Stage	**Template Name**	**File Format**	**Description/Purpose**	**Submittal Circumstances**
Monitor & Control (Government Code, Sections 2054.1181 (g) and 2054.159)	**Monitoring Report**	.docx	The Monitoring Report is utilized for communicating the overall project cost, schedule, scope, and quality health and project progress. The Legislative Budget Board sets the reporting frequency (monthly or quarterly).	Submit according to the directed frequency (quarterly or monthly) after the MIRP is approved by the QAT.
Close (Government Code, Section 2054.306)	**Post-Implementation Review of Business Outcomes (PIRBO)**	.docx	The PIRBO compares project results to stated goals and objectives, and it formalizes the completion of the project.	Submit six months after project completion (once).

2.0   INITIATE

2.1   PROJECT INITIATION

The Initiation stage involves reviewing the business idea and turning it into a formal project request. This work typically begins as part of the Legislative Appropriations Request (LAR) process as required by Government Code, Section 2054.303(b). All agencies are subject to the LAR process.

Prior to a legislative cycle (which occurs every biennium), agencies are required to submit their TPDF Business Case, Workbook, and Statewide Impact Analysis for each planned MIRP into the Legislative Budget Board's (LBB) Automated Budget and Evaluation System of Texas (ABEST) as part of their Biennial Operating Plan (BOP) for consideration by the Legislature (Government Code, Section 2054.303). If a MIRP is not already included in an agency's biennial operating plan (BOP), the agency must submit a BOP amendment to the Legislative Budget Board prior to the expenditure of any funds (Government Code, Section 2054.100(c)). Once the Legislative Budget Board approves the BOP amendment, Government Code, Section 2054.303(b), requires the agency to submit a Business Case for the project to the QAT. The QAT then reviews the Business Case documentation to determine project viability and risk, provides feedback, and approves the project start date and budget (Government Code, Section 2054.158). Therefore, in addition to functioning as a monitoring body, the QAT serves as an agency partner in facilitating MIRP legislative funding.

In the initiation phase of the project, the minimum viable product must be defined for the project scope, in addition to a project delivery methodology (Waterfall, Agile, or Hybrid).

KEY ACTIVITIES
- Identify the business issue or business needs to be addressed.
- Identify the constituent quantitative and qualitative benefits of completing the project, including financial impacts such as return on investment (ROI).
- Refine and formalize the project scope statement.
- Determine a project delivery methodology (Waterfall, Agile, or a Hybrid approach).
- Define expected outcomes and key project and IT milestones (such as requirements gathering, design, procurement, development, and testing), including an estimate of the number of sprints, or project increments, that may be required and/or the overall duration of the engagement, rather than specific detailed requirements.
- Develop a high-level schedule (sprint plan and/or release schedule).
- Identify project risks and constraints.
- Identify key stakeholders.

TOOLS AND TEMPLATES

Business Case (Government Code, Section 2054.303) and Business Case Workbook (Government Code, Section 2054.118)

The Project/Program Sponsor or Business Owner (or their teams) prepares the TPDF Business Case Template and Business Case Workbook Template. These artifacts address the business issue, proposed approach, and expected business outcomes, as well as the key resources necessary for the project. The documents define how the project will align with the goals of the agency and/or state.

The Business Case and Workbook define the project scope, estimate a timeline, and establish a project budget. The Business Case and Workbook should establish and prioritize high-level requirements (such as functions or features of the product being developed) instead of detailed plans. When initiating sprints during the project execution, these requirements will be developed and released in an incremental fashion, based on priority. These priorities may, and often do, shift throughout the life of the project, so each sprint should begin with a kickoff/sprint planning ceremony and end with a retrospective and lessons learned exercise.

Statewide Impact Analysis (Government Code, Section 2054.303(a)(2)(A))

The TPDF Statewide Impact Analysis Template provides information necessary for the QAT's assessment of the project's impact on the use of IT resources across the state. DIR assesses the impact based on the information provided.

Backlog

The Backlog Template (from DIR's PM Essentials) is an optional template that provides a mechanism to track project deliverables against requirements to ensure business and product requirements are met. When using an Agile approach, these requirements may take the form of higher-level functions of the product being developed. The detailed requirements defined early in the project are refined during sprints through collaboration between product managers, users, and developers.

When developing requirements, consider using pictorial representations of business processes and user interactions with the system being developed. Story boards, process diagrams, and user stories are common techniques for documenting requirements in Agile projects.

The Agile methodology typically defines epics as large bodies of work comprising functionality and features that represent the overall scope for a capability in a given release. These epics are then broken down into specific tasks, or user stories. A user story is a tool used in Agile software development to capture a description of a software feature or function from an end-user perspective, and it

helps to create a simplified description of a requirement. The user story usually describes who the user is (including the type of user), what they want, and why they want it. User stories are then evaluated for inclusion as part of a project scope.

2.2 APPROACHES TO DETERMINING PROJECT CLASSIFICATION AS A MAJOR INFORMATION RESOURCES PROJECT (MIRP)

Agencies often struggle with determining whether a project is subject to reporting as a MIRP. To support agencies when planning new IT projects, the QAT has developed guidelines to help agencies ensure compliance with statutory requirements.

Government Code, Section 2054.003(12), defines a **project** as "an initiative that provides information resources technologies and creates products, services, or results within or among elements of a state agency," and it "is characterized by well-defined parameters, specific objectives, common benefits, planned activities, a scheduled completion date, and an established budget with a specified source of funding."

Government Code, Section 2054.003(10), defines a **MIRP** as:

- Any information resources technology project identified in a state agency's biennial operating plan whose development costs exceed $5 million and that:
    - Requires one year or longer to reach operations status;
    - Involves more than one state agency; or
    - Substantially alters work methods of state agency personnel or the delivery of services to clients;
- Any information resources technology project designated by the Legislature in the General Appropriations Act as a major information resources project; and
- Any information resources technology project of a state agency designated for additional monitoring under Section 2261.258(a)(1) if the development costs for the project exceed $5 million.

A MIRP is typically identified in an agency's Biennial Operating Plan (BOP) during the Legislative Appropriations Request (LAR) process, including application development costs with a total project cost of $5.0 million or greater (Government Code, Section 2054.303(b)). A state agency may not spend appropriated funds for a MIRP unless the MIRP has been approved by the LBB in the agency's BOP and the Quality Assurance Team (Government Code, Section 2054.118). A MIRP can include (but is not limited to) projects with any of the following components:

- Custom development of a new or replacement application;
- A Software-as-a-Service (SaaS)/Platform-as-a-Service (PaaS) solution that must be customized to accommodate agency requirements;
- Legacy data migration; or

- Enhancements to an existing and operating application.

MIRPs can include both the implementation of new solutions and large enhancements of an existing system. Additionally, a MIRP may involve multiple vendors and purchase orders/demands as part of its implementation; essentially, the separation of work does not determine MIRP status. Sometimes, agencies find it more efficient to combine multiple enhancements into one big project, developed by a maintenance team. Any enhancement effort over 80 hours that is also over $5 million in total project costs must be reported as a MIRP. Whether a project meets MIRP qualifications is determined largely by reviewing the project's scope/schedule/budget as requested in an agency's LAR. All efforts associated with LAR funding must be evaluated by the agency and QAT for consideration as a MIRP.

Furthermore, total project costs for a MIRP are calculated using all costs (not just contract and/or software and hardware costs) associated with project implementation including:

- Planning costs;
- Staffing costs (staff augmentation and full-time equivalent positions);
- Informational costs;
- Hardware purchases;
- Software purchases (including new licenses);
- Contingency costs; and
- Ancillary costs.

2.3 PROJECT CHARACTERISTICS

Many varieties of Agile methodology are in use throughout Texas organizations. Texas state agencies and institutions of higher education (IHEs) have increasingly expressed interest in implementing an Agile approach to IT project management to enable better product outcomes.

Adapting the Agile approach for use by agencies and IHEs requires adherence to specific statutory requirements, as outlined in Texas Administrative Code (TAC), Chapter 216; Government Code, Chapter 2054; and the General Appropriations Act (GAA), Article IX. While the Agile Manifesto outlines the tenets of this methodology, any Agile methodology proposed for IT projects that are implemented by Texas agencies and IHEs must adhere to all rules and regulations. Texas' legislative funding process is not Agile, as it is very prescriptive to ensure proper use of public funds. The Legislature mandates a clear outline of the MIRP plan and objectives for funding expenditures, which should include expected results. Statutory requirements always take precedence over any Agile best practice, and agencies must ensure that their Agile implementation is scaled and adapted to address all of those requirements.

Figure 3 - Agile MIRP Process Using DIR TPDF Templates provides a process model for using DIR's TPDF tools to deliver MIRPs.
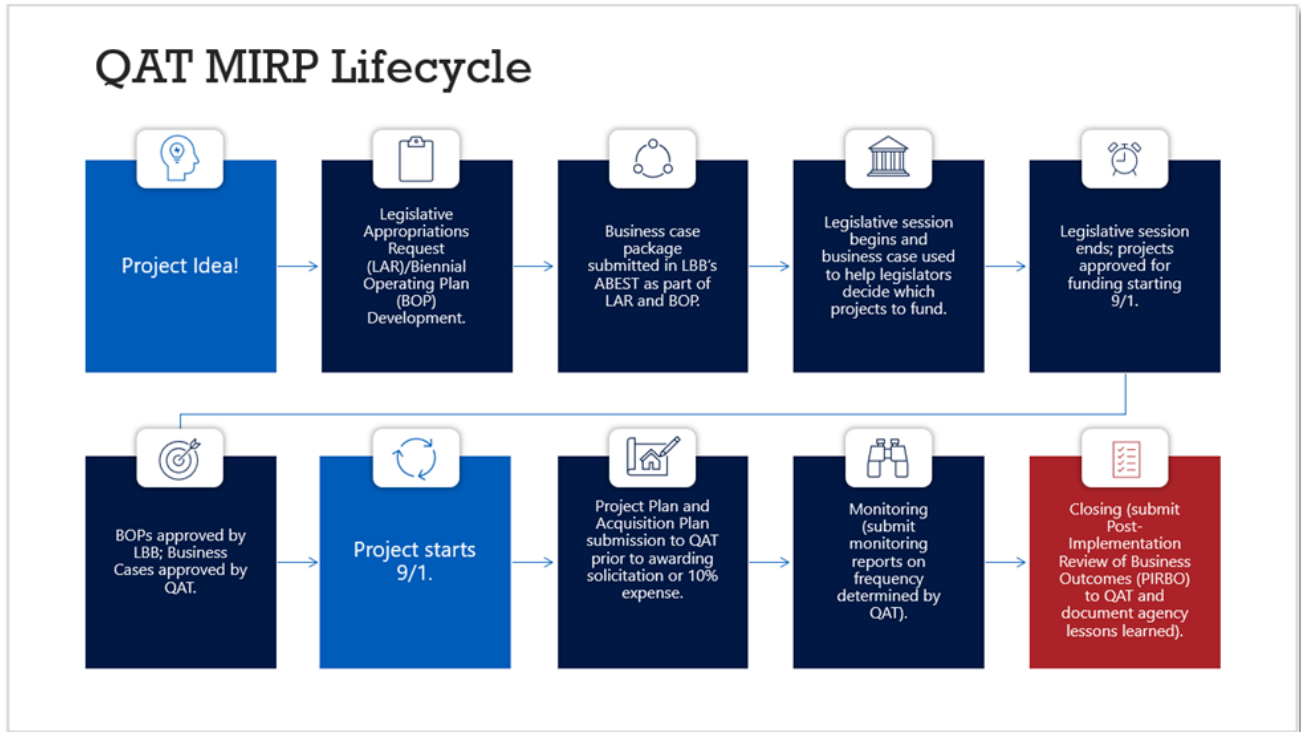

QAT MIRP Lifecycle

Project Idea!

Legislative Appropriations Request (LAR)/Biennial Operating Plan (BOP) Development.

Business case package submitted in LBB's ABEST as part of LAR and BOP.

Legislative session begins and business case used to help legislators decide which projects to fund.

Legislative session ends; projects approved for funding starting 9/1.

BOPs approved by LBB; Business Cases approved by QAT.

Project starts 9/1.

Project Plan and Acquisition Plan submission to QAT prior to awarding solicitation or 10% expense.

Monitoring (submit monitoring reports on frequency determined by QAT).

Closing (submit Post-Implementation Review of Business Outcomes (PIRBO) to QAT and document agency lessons learned).

Figure 3 - Agile MIRP Process Using DIR TPDF Templates

Regardless of methodology, a project's lifecycle typically includes the following stages: initiation, planning, execution, monitor and control, and closure. Each stage comprises various components, such as a well-defined scope, a prioritized backlog of tasks, a cross-functional team, frequent iterations, feedback loops, reporting to stakeholders, and delivery of value to end users. For projects managed using an Agile methodology, the project stages do not adhere to sequential phases the same way a traditional Waterfall approach does. Unlike a Waterfall approach, an Agile methodology focuses on developing and deploying solutions as quickly as possible, adjusting as the project progresses. This focus usually means releases of smaller increments of work at shorter intervals.

Figure 4 - Agile Process Example shows an example of a typical increment, or sprint, in the Agile process.
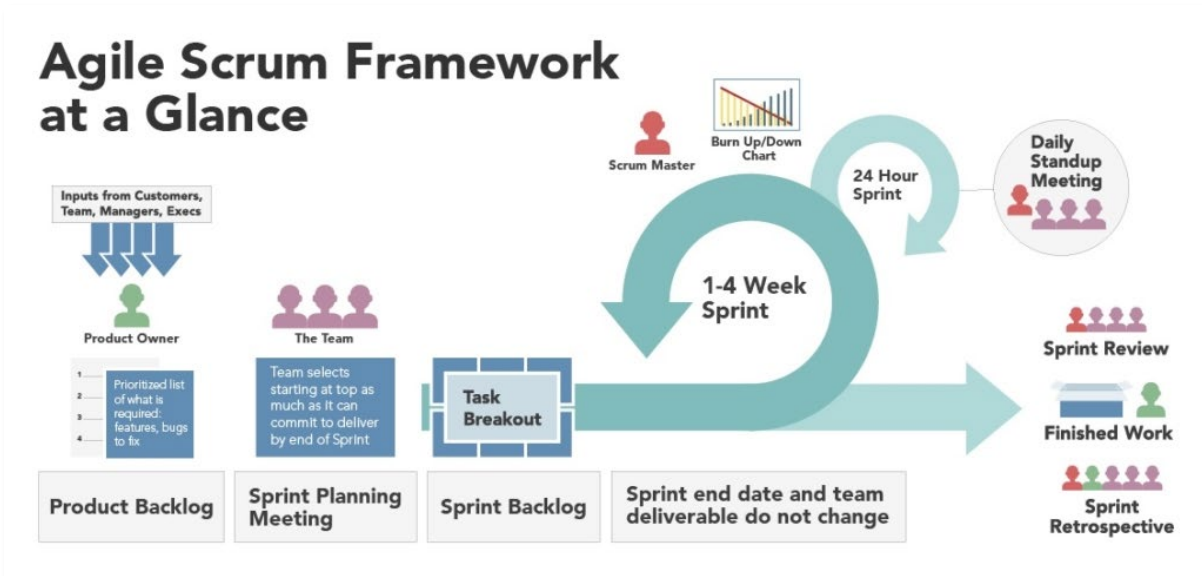

Figure 4 - Agile Process Example (Source: https://www.planview.com/resources/guide/agile-methodologies-a-beginners-guide/basics-benefits-agile-method/)

Additionally, while this guide refers to Agile roles, Texas agencies/organizations may have slightly varying definitions or role titles (see 3.2 Roles and Responsibilities for more information). For example, the roles of Product Manager and Product Owner are used interchangeably within this document to allow agencies flexibility in how these roles may be defined at their agency. Further, it is important to note that there are many different styles/applications of Agile that may be used as guidance to agencies. At times, role definitions may vary according to the particular style of Agile an agency adopts. All agencies have the flexibility to adopt the Agile approach that works best with their organization, as long as all statutory requirements are met. Lastly, agencies should understand that roles in an Agile approach may differ from a staff member's actual job title. It is more important to ensure all role functions are covered by the team, rather than adhere to a strict definition of individual roles. Agencies/organizations are encouraged to adapt terminology for roles in a way that aligns to their individual business operations.

A common misperception of the Agile methodology is that the methodology requires minimal upfront planning and documentation. However, the Legislature's funding process requires that an IT project's initiation follows a process that is somewhat similar to a Waterfall methodology, in which high-level, detailed information regarding the business case for investing effort and money into a project is compiled and analyzed for consideration of approval. Typically, projects derive from an agency's strategic themes, which are portfolio-level business objectives that provide differentiation and strategic advantage. Themes provide business context for portfolio strategy and decision-making, representing aspects of the agency's strategic intent. The agency

should enter the project in its LAR/BOP as required, usually after the agency establishes the vision for a project based on themes and objectives, defines the desired end result, performs a cost-benefit analysis, and determines that the investment is worthwhile. During legislative session, the Legislature decides whether to appropriate funds for the project and directs when the actual execution (including any necessary procurement) of the project can begin (usually September 1 of every odd-numbered year). As the approved project moves into planning, the project's team or lead role determines the highest priority features.

After the initial increment of project work initial increment, each iterative cycle undergoes feedback, requirements refinement, and lessons learned reviews. The iteration is then developed, tested, and finally incrementally released. An Agile approach, as shown in Figure 5 - Agile Iterative Development Process, allows for an indefinite number of incremented releases before the overall development effort is deemed completed.
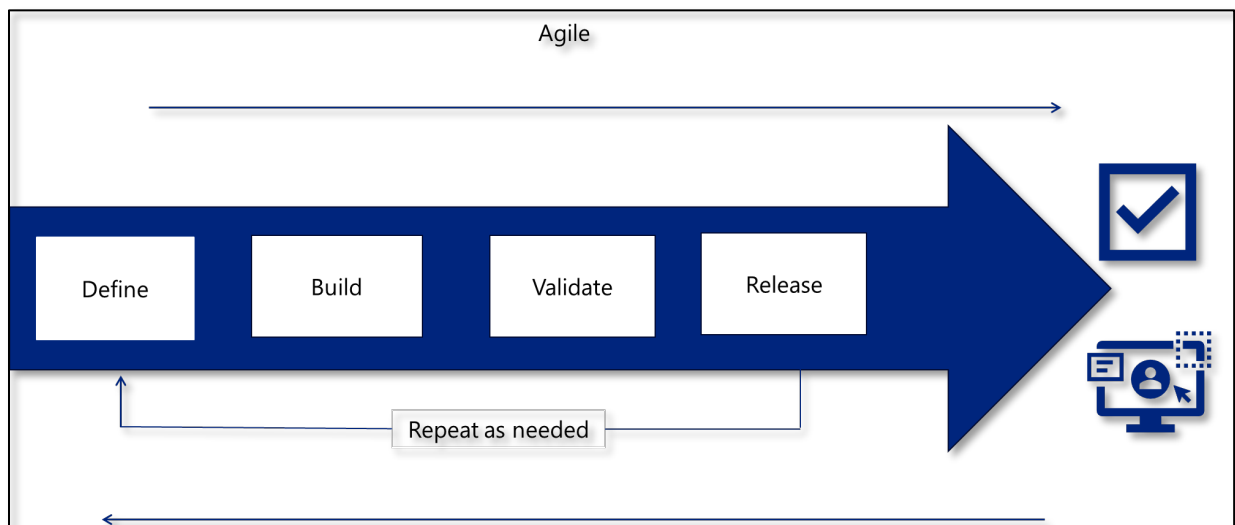

Figure 5 - Agile Iterative Development Process

Agile methodologies often use different tracking mechanisms, such as milestones, story points, features, or performance indicator (PI) objectives. To ensure appropriate use of taxpayer money, the Legislature seeks easily defined MIRP outcomes that can also easily be tracked such as completion rates of user stories, milestones, sprints, iterations, tasks, epics, backlog items, story points, and features. The key to tracking these metrics is to define these measurements and respective tracking methods at the beginning of the project (see Agile MIRP Schedule in this document for additional information).

If a project is planning to use a vendor solution, milestone targets identified in the Business Case and refined in the Project Plan may change once a vendor is selected and their work plan is

further defined. While a vendor service or solution procurement can result in some milestone changes, each agency is required to provide a change management plan and a high-level project approach, procurement strategy, and expected outcomes and benefits. It is recommended to plan project milestones based on what is known at the time that the TPDF Templates are initially completed, in addition to determining dates by which key goals and targets must be accomplished to ensure a successful project implementation. Identifying and then weighting—or measuring—the importance of each individual work component or milestone to the overall project completion rate is key to ensuring accurate metrics and reporting, as various steps may have different durations and importance to the project. For example, if a vendor procurement is all that is planned for in the milestones for the first year of a MIRP, the schedule metric may be "skewed" and appear as if the project is behind schedule (or Red), when in actuality, there may be many project elements being worked on and progressing as part of the overall project completion rate.

3.0 PLAN

3.1 PROJECT PLANNING

Once the initial MIRP information is determined and the QAT approves the project, the MIRP moves into the Planning stage. In Planning, the project team refines the project schedule and completes a Project Plan for how the work will be performed. If required, an Acquisition Plan for obtaining vendor services and solutions also is completed.

Government Code, Section 2054.304(b), requires agencies to submit the Project Plan to the QAT before spending more than 10 percent of allocated funds for the project. In addition, agencies must submit to the QAT an Acquisition Plan for a MIRP before issuing a vendor solicitation for a contract valued at $10 million or greater (Government Code, Sections 2054.158 and 2054.305). Agencies designated as requiring additional monitoring according to the State Auditor's Office are required to submit an Acquisition Plan for all MIRPs (TAC, Chapter 216). Furthermore, for MIRP *contracts* valued at $10 million or greater, agencies must submit both a pre-negotiation draft (before a potential vendor is engaged in negotiations) and a final, unsigned draft for QAT review (Government Code, Section 2054.160).

KEY ACTIVITIES
- Refine the business issue or business needs from the Business Case.
- Refine and formalize the project scope.
- Refine the IT milestones (such as requirements gathering, design, procurement, development, and testing) and estimated number of sprints that may be required and/or the overall duration of the engagement.
- Finalize a schedule (sprint plan and/or release schedule).
- Create registers to track and address project quality, communication, configuration items, performance, and risks.
- Identify key stakeholders and required resources.
- Identify project team members.
- Define roles and responsibilities.
- Formalize a development plan and Project Plan, including a determination of:
  o Vendor needs.
  o Environments to be used.
  o Change migration/promotion plan.
- Complete an Acquisition Plan for acquiring vendor services/solutions, if required.

TOOLS AND TEMPLATES

Project Plan (Government Code, Section 2054.304 (b))

The TPDF Project Plan Template is used to provide general planning information and monitoring, in addition to control methods, quality, communication, configuration, performance, and risk management.

Acquisition Plan (Government Code, Section 2054.305)

The TPDF Acquisition Plan Template is used to provide procurement planning information for acquiring goods and services outside of the organization through management of solicitations and contracts.

Requirements

The optional Requirements Template (from DIR's PM Essentials) details specific project and product requirements required to satisfy business objectives.

Backlog

The Backlog Template (from DIR's PM Essentials) is an optional template that provides a mechanism to track project deliverables against requirements to ensure business and product requirements are met. When using an Agile approach, these requirements may take the form of higher-level functions of the product being developed. The detailed requirements defined early in the project are refined during sprints through collaboration between product managers, users, and developers.

When developing requirements, consider using pictorial representations of business processes and user interactions with the system being developed. Story boards, process diagrams, and user stories are common techniques for documenting requirements in Agile projects.

The Agile methodology typically defines epics as large bodies of work comprising functionality and features that represent the overall scope for a capability in a given release. These epics are then broken down into specific tasks, or user stories. A user story is a tool used in Agile software development to capture a description of a software feature or function from an end-user perspective, and it helps to create a simplified description of a requirement. The user story usually describes who the user is (including the type of user), what they want, and why they want it. User stories are then evaluated for inclusion as part of a project scope.

3.2 ROLES AND RESPONSIBILITIES

Agile projects not only follow a slightly different process than a traditional Waterfall project, but some of the roles within the project team also differ. In some Agile methodologies, there is no specified "Project Manager" role. Instead, role titles often include Product Manager, Product Owner, Program Manager, Scrum Master (as is the case in the Scrum methodology), or Team Lead, in other Agile project team structures.

Texas agencies may have slightly varying definitions or role titles. For example, the roles of Product Manager and Product Owner are used interchangeably within this document, which demonstrates the flexibility that agencies have in determining how their roles and titles are defined. Furthermore, many different styles or applications of Agile may be used as guidance to agencies. At times, role definitions may vary according to the particular style of Agile an agency adopts. All agencies have the flexibility to adopt the Agile approach that works best within their organization, as long as all statutory requirements are met. Lastly, agencies should understand that roles in an Agile approach may differ from a staff member's actual job title. Ensuring that all role functions are covered by the team is more important than adhering to a strict definition of individual roles. Agencies are encouraged to adapt terminology for roles in ways that align to their individual business operations.

In Agile projects using a Scrum approach, schedules are more fluid. With the initiation of each new sprint, the goal and expected output of the sprint is determined by analyzing a combination of the backlog, feedback from the customer regarding the current state of production, and any reprioritization of project objectives, needs, requirements, or other elements. Project teams must be flexible and able to adjust to changing requirements and reprioritization of requirements. To facilitate this approach, project leads must themselves be flexible and ready to adjust quickly rather than rigidly adhering to a predefined plan. Removing project obstacles, reorganizing efforts, and keeping team members moving forward with any changes are the expected activities of an Agile lead. The lead must also ensure the project is on track for each iteration by monitoring the team's progress and productivity.

While the lead is making sure that the project is on course for each iteration, the team members must produce for each sprint. One key team member is the Product Manager, who is typically a project's key stakeholder. One part of the Product Manager's responsibilities is to have and convey to the team a vision of what they wish to build, as this is key to successfully starting any Agile project. This person is ultimately responsible for prioritizing requirements and deliverables as well as reprioritizing requirements and deliverables throughout the life of the project, specifically at the kickoff of each new sprint. In addition, the Product Manager is the individual who is ultimately responsible for acting as the official representative for the agency in communicating with the QAT, providing status updates, and responding to all requests for information.

The Product Manager's *primary responsibility* is to manage the resources and keep the project on track within the set timeline and budget. In addition, they ensure that any internal and external required reporting, such as QAT Monitoring Reports, is completed and distributed as necessary. On the other hand, the Product Manager's *primary focus* is to ensure that the product provides the desired business benefits as envisioned by the agency. They should clearly understand the product's intricacies and how the product will add value to end users. In the public sector, the Product Manager is the most knowledgeable person regarding the product's functionality and benefits.

Other team members have additional responsibilities to fulfill and can also appear in the Waterfall model. Some common roles are Business Analysts, Modelers, Programmers, Testers, and Release Managers. These roles are the hands-on subject matter experts who design, build, verify, and deploy what the project stakeholders, especially the Product Manager or Owner, have been expecting or needing from each sprint. Team member responsibilities include understanding and implementing the goals of a sprint or iteration, reporting on progress daily, communicating with the Product Manager to clarify business needs, and collaborating closely with fellow team members as sprint components are built.

Figure 6 compares the typical organizational structures of both a traditional Waterfall project and an Agile project.
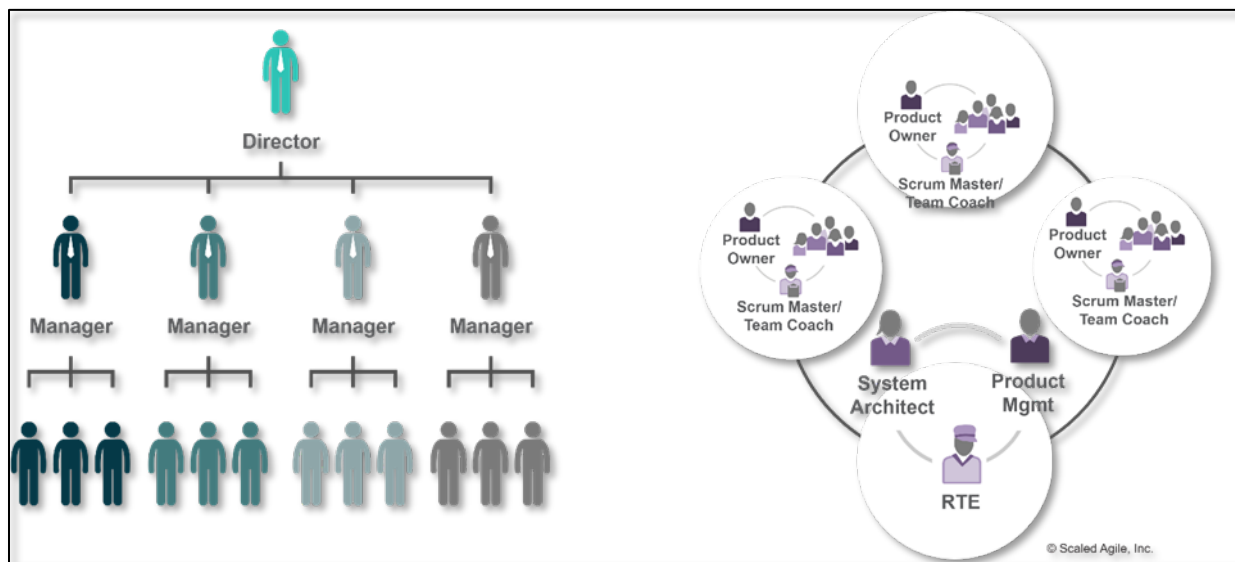

Figure 6 - Comparison of Traditional/Waterfall Project Management to Agile Project Management Structures.

Table 2 - Typical Agile Roles lists some typical roles found in an Agile development effort. As previously stated, Agile roles may vary by organization and do not always align to job titles.

Table 2 – Typical Agile Roles	
Role	**Responsibility/Defining Details**
Product Manager	• Assures that business needs and requirements are clear to developers who are delivering the solution. • Owns the backlog. • Develops and relays a vision of the product(s) to build. • Prioritizes requirements and deliverables as well as reprioritizing requirements and deliverables throughout the life of the project, specifically at the kickoff of each new sprint. • Serves as the official representative for the agency in communicating with the QAT, providing status updates, and responding to all requests for information.
Product Owner	• Assures that business needs and requirements are clear to developers who are delivering the solution. • Organizes the backlog.
Product Team (consisting of multiple roles)	• Led by the Functional Lead. • Works with stakeholders and subject matter experts to define process flows and business rules. • Develops features and user stories needed to deliver product capabilities. • Prioritizes and manages the program backlog.
Architect	• Assures that the technical solution aligns with the goals, standards, and existing functionalities of the system. • Also known as Technical Architect, System Architect, Technical Designer, or similar.
Lead, Scrum Master (usually filled by Project Manager)	• Assures that sprint tasks are understood and completed by the team. • Removes obstacles and keeps channels of communication open with stakeholders.
Functional Lead	• Develops, communicates, and manages the program/product vision, roadmap, and backlog. • Understands business needs to determine how and why software functionality is needed. • May serve as a Product Manager. • Understands customer needs and validates solutions. • Prioritizes, refines, and manages the product backlog.

Table 2 – Typical Agile Roles	
Role	**Responsibility/Defining Details**
	• Enables the Development Team to maximize delivery of value to stakeholders. • Open to feedback from the Development Team and willing to give feedback in return.
Web Designer	Develops the look and feel for browser-based applications.
Programmer	Writes the code that the solution executes to solve the business problem.
Database Administrator	Provides database support for the solution being developed.
Business Analyst	• Serves as liaison between the business and technical sections to help identify solutions. • May be involved with tool, testing, and requirements support. • Gathers and refines requirements. • Creates user stories and maps out dependencies. • Supports delivery by helping the development and testing team during implementation with tasks such as process mapping, data sheet development, and bug triage.
Tester (unit, system, performance, accessibility, UAT)	• Validates that the solution works for the business. • May be a Product Manager, Business Analyst, End User, Developer, or Project Lead. • Different testers are likely involved at different stages of the sprint/iterations.
Release Manager	Provides the technical planning and coordination needed to deploy the solution.

QAT's Role and Responsibilities in Monitoring Agile MIRPs

The QAT, authorized under Government Code, Chapter 2054, implements a consistent and repeatable approach for quality assurance review of technology implementation projects in the state of Texas. Agencies are required to regularly (monthly or quarterly, as designated) report MIRP cost, schedule, scope, and quality health in addition to risks, issues, and changes to the QAT (Government Code, Sections 2054.1181(g) and 2054.159). In turn, the QAT continually assesses MIRPs to help reduce the likelihood that a project will not deliver a quality solution based on the schedule, budget, and scope commitments made to State leadership.

3.3   AGILE MIRP SCOPE

Scope is a critical concept in the Agile process. Accurately defining scope helps ensure that the team works efficiently toward a common goal while delivering value to customers. However,

because state projects require advance legislative appropriations for funding, a project's scope may be determined three or more years before actually starting project work.

The Agile project methodology requires dividing the project scope into distinct phases and using the work breakdown structure (WBS) process to further decompose the scope into smaller and more manageable components of work—or milestones. These tasks are assigned to team members based on their skills and expertise, and each task is accompanied by a clear definition of when the task is "done," which outlines the criteria that must be met before the task can be considered complete. Throughout the project, the team tracks the completion rates for the story points, releases, features, and other mechanisms that were set at the beginning of the project to indicate progress; after compiling this information, the team reports their progress to stakeholders, including the QAT, via Monitoring Reports.

Having a well-defined scope is crucial to help avoid scope creep, which refers to the tendency for projects to expand beyond their original scope and results in delays, increased costs, and reduced customer satisfaction. Scope creep typically manifests when a decision is made that adds scope to a scrum team in motion without going through proper sprint governance processes, including change management. By ensuring a clear understanding of the project's objectives and goals, the team can focus on the most critical tasks and avoid unnecessary distractions.

Story points are estimation techniques typically used in Agile project management methodologies to help a team scope the effort required to complete a task. Story points account for factors like task complexity and uncertainty, which makes them more accurate than other estimation techniques such as time-based estimation.

Some agencies might be planning an extensive effort, such as replacing a major outdated legacy system, which may take multiple biennia to complete. In such an instance, breaking the bigger effort and scope into smaller-phased projects with scopes that are achievable during a biennium (for example, a procurement and design phase 1; a data migration and implementation phase 2; and a backlog/defects phase 3) and requesting funding with both the total effort and the smaller efforts in mind may work best.

Agencies must report on MIRP scope health (Green, Yellow, or Red) based on the formula and results shown in Figure 7 - MIRP Scope Formula and Associated Health Colors for QAT Monitoring Reports.

Scope: Cumulative dollar ($) amount of scope changes divided by $ amount of original total project cost
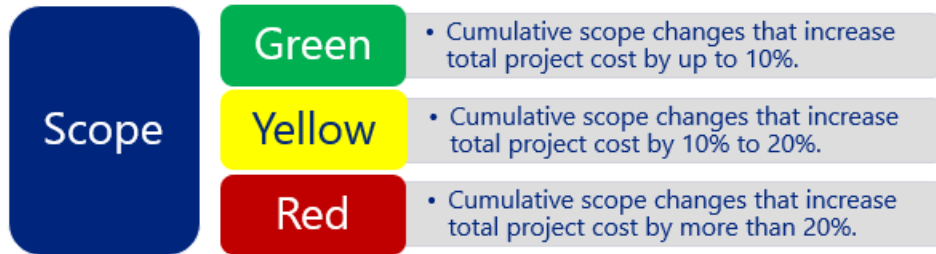
Scope

Green	Cumulative scope changes that increase total project cost by up to 10%.
Yellow	Cumulative scope changes that increase total project cost by 10% to 20%.
Red	Cumulative scope changes that increase total project cost by more than 20%.

Figure 7 – MIRP Scope Formula and Associated Health Colors for QAT Monitoring Reports

3.4   AGILE MIRP SCHEDULE

Once a MIRP's scope has been determined, estimating the time to completion in the Agile methodology can be challenging; however, following the below principles can improve timeline accuracy.

Because MIRPs typically are funded through time-limited appropriations (usually for a biennium, or two years), working backward from the expected end date of the appropriated funding is recommended to begin Agile estimations. For example, if project funding is expected to begin September 1 following a legislative session, the typical end date would be August 31 in two years (such as September 1, 2025, to August 31, 2027). Essentially, the schedule—particularly the project end date—should follow the funding that is appropriated and budgeted. Typically, larger efforts extending over multiple biennia should be split into two-year phases to support successful outcomes aligned with the state's appropriations cycle.

In addition, one best practice is to rely on past success to estimate a particular effort. For example, teams may reference historical data from their or other agencies' projects and rely on past feature delivery time actuals to plan future estimates. Further, if the team has delivered a particular number of, for example, features in a previous iteration, they may plan to deliver the same number of features in a cycle.

Also, being realistic in schedule estimating and allowing for contingency is essential (the QAT recommends planning for a minimum 10 percent contingency). Being accurate is better than being optimistic and underestimating the time required for a task. Completing detailed task

breakdowns and identifying interdependencies (among tasks, systems/applications, stakeholders, etc.) early in the project is integral in determining the time needed to complete project work. Overestimating the time can result in delays, but underestimating can lead to rushed work and low-quality outcomes.

4.0 EXECUTE

4.1 PROJECT EXECUTION

When executing an Agile project, the development and release of a product or service is conducted in an incremental—or iterative—approach. This means that portions of the overall product are developed and deployed, until all increments are complete. In practice, this incremental approach should reduce the need for significant project changes that might occur in a Waterfall approach. Such changes typically occur due to poor testing results at the end of development and attempting to keep the initial scope or increase the scope to complete an element (such as a feature).

During this phase, vendors (if needed) are onboarded after appropriate contract reviews (Government Code, Section 2054.130). Vendors work with the project team and stakeholders to finalize the work plan. The release plan outlines what each increment (for example, a sprint) will deliver. Throughout the life of the project, the release plan and output of various sprints are continuously re-evaluated and possibly reprioritized, based on business and customer needs. Significant project changes to cost, schedule, and scope should be documented, and the Business Case should be revised accordingly (required for changes of 10 percent or greater in cost and schedule). Additionally, if significant changes to the project approach or scope arise, the Project Plan should be revised accordingly.

KEY ACTIVITIES
- Execute any vendor contracts and onboard vendor team members.
- Hold sprint kickoff meetings.
- Hold daily check-in meetings (sometimes called Scrum meetings, daily stand-up meetings, iteration/sprint planning meetings, etc.).
- Collect and document requirements and deliverables not identified in earlier stages of the project so that they can be incorporated into upcoming sprints.
- Complete and submit required Monitoring Reports detailing the MIRP cost, schedule, scope, and quality statuses.
- Perform testing, validation, and resolution of defects prior to any release.
- Review any independent verification and validation (IV&V) reports and recommendations, and address as applicable.
- Collect and document Lessons Learned so that future sprints can be adjusted accordingly.

TOOLS AND TEMPLATES

Backlog

During execution, the optional Backlog Template (from DIR's PM Essentials) may be used to manage the detailed features and functionalities to be considered, committed to, and developed.

Meeting Notes

The Meeting Notes Template (from DIR's PM Essentials) may be used at all project meetings to document the meeting agenda, action items, decisions made, meeting attendance, and meeting scheduling.

Monitoring Report (Government Code, Sections 2054.1181(g) and 2054.159)

To ensure the success of the project, regularly tracking, reviewing, and regulating its progress is crucial. Monitoring the project's status is essential to keeping everyone informed and aligned toward achieving project goals. To achieve this, the TPDF Monitoring Report Template serves as a communication tool that outlines key performance indicators (for QAT: cost, schedule, scope, and quality), project milestones, current and upcoming accomplishments, and project risks and issues, and summarizes the project's progress and performance against predefined targets.

Testing

The Test Planning Template (from DIR's PM Essentials) is an optional template that may be used to identify participants, environments, schedules, access, and support resources needed for testing. In addition, the optional Test Scripts Template (from DIR's PM Essentials) may be used to document to what extent products and systems meet the requirements and provide a means for developers to remedy any flaws.

Project Change Request (PCR)

Following the project's identified change management plan, a PCR Template (from DIR's PM Essentials) should be used to document major project changes that impact scope, schedule, costs, quality, or key project performance and health. This form should *not* be used to manage daily operational project management, and project monitoring and control activities, as doing so will add significant overhead to the project management activities. Changes to iteration and sprint plans and priorities are common in the Agile approach, and they should be embraced. Changes that do not impact cost or schedule do not require a formal PCR.

Contract and Change Order Amendment (CACOA) (Government Code, Sections 2054.160(d) and 2054.307(b); GAA, Section 9.01(c))

Use the TPDF CACOA Template to document an overage that causes a MIRP-related contract to exceed the contract amount by 10 percent or more. If an amendment or change is required, this form must be submitted to the QAT for review. This form is essential to recording any contract changes that may significantly impact the project and its outcomes, including any changes that may modify the project's objectives, requirements, or deliverables or require additional resources, time, or budget.

Lessons Learned

Document the project Lessons Learned (from DIR's PM Essentials) by the project team and stakeholders continuously throughout the project lifecycle using any pertinent project artifacts, as well as project team feedback obtained from any lessons learned brainstorming or meetings. This document summarizes the key learnings and recommendations about the project objectives, scope, performance, risks, issues, successes, failures, and best practices. It also identifies the actions and improvements that need to be taken for future projects and should be stored in a central repository or knowledge base.

Retrospective

Similar to Lessons Learned, a retrospective is typically a less formal method to reflect on what went well, what went wrong, and what can be improved in the project at the end of a release, project, or project phase. It involves the project team and sometimes the stakeholders and is facilitated by the Project Manager. The purpose of a retrospective is to generate concrete and actionable ideas for improvement and to celebrate team achievements. A retrospective is usually documented by taking notes or using visual tools, such as sticky notes, flip charts, or online boards. Retrospectives can help enable the Agile feedback loop and support continuous improvement and learning.

4.2 CHANGE MANAGEMENT

An Agile methodology process emphasizes the early and continuous delivery of IT products, providing value in achieving business objectives and addressing customer needs. The process embraces change in the business environment and technology landscape, with a focus on swiftly delivering value to business areas by producing high-quality, working software. For example, with the Agile approach, multiple concurrent sprint sets may occur, each completing certain application features. If a sprint for one feature must be reprioritized during execution to occur earlier than originally planned (for instance, if it has an interdependency that must be addressed before another feature can be completed), the Agile methodology enables moving the sprints around. The same features and scope will be completed as planned, just in a different order,

which contrasts with the more rigid Waterfall approach. Iterations should not move around, but the iteration backlog may change. In an Agile methodology, the project schedule and budget can remain fixed, while the scope can be adjusted as needed based on prioritization. This approach—when adhered to—should meet most state and federal requirements. Transparency is critical to enabling collaboration by making work visible to all stakeholders (including the public). In addition, transparency is key to supporting effective governance.

For MIRPs, use the TPDF Templates to create the plan (including milestones, deliverables, and acceptance criteria) for the project, and adapt the plan as it progresses through the project lifecycle. While official project documentation is not the most important part of any project, it is integral in demonstrating that the agency has delivered what was planned in the original request to the Legislature. One key component of significant project changes is capturing the details and impacts of the proposed change via documentation, which typically takes the form of a project change request (PCR). To facilitate project changes, organizations should have and comply with a robust change management process that describes how a PCR is implemented and reported. Furthermore, project changes to cost, schedule, and scope for MIRPs are reported to the QAT in the required DIR TPDF Monitoring Report Template (Government Code, Sections 2054.158-159). The QAT evaluates those changes with the understanding that change can and will happen, and change can have a net positive effect on project outcomes.

If a project change increases the project's original vendor base contract cost by 10 percent or greater, a CACOA must be submitted to the QAT. The QAT will evaluate the change impact on the MIRP's potential for successful delivery (Government Code, Section 2054.307). If a project change increases costs or schedule by 10 percent or greater, a Revised Business Case must be submitted to the QAT for evaluation of the change impact on the MIRP's potential for successful delivery (Government Code, Section 2054.307). If the proposed project change impacts the project's original project schedule or budget by an increase of 50 percent or more, *or* the change impacts a vendor contract valued at $10 million or higher by 10 percent or more, a cost-benefit analysis is required to be submitted to the QAT for a determination on whether to continue the project (General Appropriations Act, Section 17.09(c)(2)).

While change *is not* discouraged in the practice of the Agile methodology in the State, documenting, tracking, and reporting significant changes *is* required by the Legislature and is integral to increasing project integrity, transparency, and accuracy for stakeholders and the public.

5.0   MONITOR AND CONTROL

5.1   PROJECT MONITORING

During the Monitor and Control phase, required reporting for MIRPs is performed and provided to stakeholders such as agency leadership, the QAT, and the public (via the Legislative Budget Board's QAT Dashboard).

KEY ACTIVITIES

- Hold daily check-in meetings (sometimes called Scrum meetings, daily stand-up meetings, iteration/sprint planning meetings, etc.).
- Collect and document requirements and deliverables not identified in earlier stages of the project so that they can be incorporated into upcoming sprints.
- Complete and submit required Monitoring Reports detailing the MIRP cost, schedule, scope, and quality statuses.
- Review any IV&V reports and recommendations and address as applicable.
- Collect and document Lessons Learned so that future sprints can be adjusted accordingly.

TOOLS AND TEMPLATES

Backlog

During the Execute, and the Monitor and Control stages, the optional Backlog Template (from DIR's PM Essentials) may be used to manage the detailed features and functionalities to be considered, committed to, and developed.

Meeting Notes

The optional Meeting Notes Template (from DIR's PM Essentials) may be used at all project meetings to document the meeting agenda, action items, decisions made, meeting attendance, and meeting scheduling.

Monitoring Report (Government Code, Sections 2054.1181(g) and 2054.159)

To ensure the success of the project, regularly tracking, reviewing, and regulating its progress is crucial. Monitoring the project's status is essential to keeping everyone informed and aligned toward achieving project goals. To achieve this, the required TPDF Monitoring Report Template serves as a communication tool that outlines key performance indicators (KPIs) (for QAT cost, schedule, scope, and quality), project milestones, current and upcoming accomplishments, and project risks and issues. The Monitoring Report also summarizes the project's progress and performance against predefined targets.

Testing

The Test Planning Template (from DIR's PM Essentials) is an optional template that may be used to identify participants, environments, schedules, access, and support resources needed for testing. In addition, the optional Test Scripts Template (from DIR's PM Essentials) may be used to document to what extent products and systems meet the requirements and provide a means for developers to remedy any flaws.

Project Change Request (PCR)

Following the project's identified change management plan, a PCR Template (example from DIR's PM Essentials) should be used to document major project changes that impact scope, schedule, costs, quality, or key project performance and health. This form should *not* be used to manage daily operational project management, and project monitoring and control activities, as doing so will add significant overhead to the project management activities. Changes to iteration and sprint plans and priorities are common in the Agile approach, and they should be embraced. Changes that do not impact cost or schedule do not require a formal PCR.

Contract and Change Order Amendment (CACOA) (Government Code, Sections 2054.160(d) and 2054.307(b); GAA, Section 9.01(e))

Use the TPDF CACOA Template to document an overage that causes a MIRP-related contract to exceed the contract amount by 10 percent or more. If an amendment or change is required, this form must be submitted to the QAT for review. This form is essential to recording any contract changes that may significantly impact the project and its outcomes, including any changes that may modify the project's objectives, requirements, or deliverables or require additional resources, time, or budget.

Lessons Learned

Document the project Lessons Learned (from DIR's PM Essentials) by the project team and stakeholders continuously throughout the project lifecycle using any pertinent project artifacts, as well as project team feedback obtained from any lessons learned brainstorming or meetings. This document summarizes the key learnings and recommendations about the project objectives, scope, performance, risks, issues, successes, failures, and best practices. It also identifies the actions and improvements that need to be taken for future projects and should be stored in a central repository or knowledge base.

Retrospective

Similar to Lessons Learned, a retrospective is typically a less formal method to reflect on what went well, what went wrong, and what can be improved in the project at the end of a release, project, or project phase. It involves the project

team and sometimes the stakeholders and is facilitated by the Project Manager. The purpose of a retrospective is to generate concrete and actionable ideas for improvement and to celebrate team achievements. A retrospective is usually documented by taking notes or using visual tools, such as sticky notes, flip charts, or online boards. Retrospectives can help enable the Agile feedback loop and support continuous improvement and learning.

5.2 METRICS FOR TRACKING AGILE MIRP MILESTONE PROGRESS

For agency internal reporting, project performance metrics may be defined and tracked at various levels across a project, program, department, or agency. For MIRPs, the QAT has defined specific performance metrics for cost, schedule, scope, and quality indicators, as described in the Monitoring Report Template.

Figure 8 - QAT Non-Agile MIRP Performance Indicators shows the QAT-required performance indicators—along with their respective non-Agile calculation formulas—that must be continually reported on throughout the MIRP lifecycle; these indicators are published quarterly on the Legislative Budget Board's QAT public dashboard. The four minimum-required performance metrics are schedule, cost, scope, and quality for MIRPs.

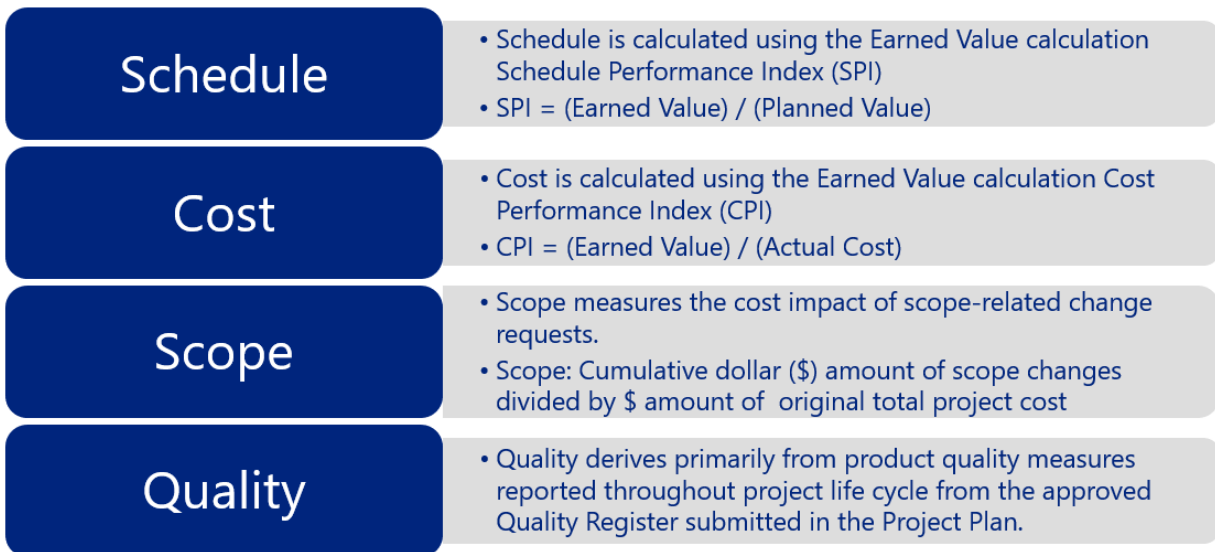| **Schedule**	• Schedule is calculated using the Earned Value calculation Schedule Performance Index (SPI) • SPI = (Earned Value) / (Planned Value)
Cost	• Cost is calculated using the Earned Value calculation Cost Performance Index (CPI) • CPI = (Earned Value) / (Actual Cost)
Scope	• Scope measures the cost impact of scope-related change requests. • Scope: Cumulative dollar ($) amount of scope changes divided by $ amount of original total project cost
Quality	• Quality derives primarily from product quality measures reported throughout project life cycle from the approved Quality Register submitted in the Project Plan.

Figure 8 - QAT Non-Agile MIRP Performance Indicators

Figure 9 QAT Agile MIRP Performance Indicators describes the same project health indicators for projects following an Agile methodology and includes the typical Agile formula calculations. Tracking the features/story points/performance indicators of an Agile project helps to not only keep track of progress but also manage risk.

Schedule
- Schedule is calculated using the Earned Value calculation Schedule Performance Index (SPI)
- SPI = (Actual Story Points/Sprint(s)) / (Estimated Story Points/Sprint(s))

Cost
- Cost is calculated using the Earned Value calculation Cost Performance Index (CPI)
- CPI = (Estimated Hours/Story Points) / (Actual Hours/Story Points)

Scope
- Scope measures the cost impact of scope-related change requests.
- Scope: Cumulative dollar ($) amount of scope changes divided by $ amount of original total project cost

Quality
- Quality derives primarily from product quality measures reported throughout project life cycle from the approved Quality Register submitted in the Project Plan.

Figure 9 - QAT Agile MIRP Performance Indicators

Each agency is welcome to use either measurement strategy for reporting. However, agencies should identify which measurement strategy they plan to use and let the QAT know in advance of the first Monitoring Report. In addition, for Agile reporting, the numerical calculations for the planned and actual story points and hours are required to be provided as supporting documentation for the performance metric as part of the Monitoring Report.

For all MIRPs, performance metrics are always tied to defined milestones, and milestones typically are associated with some form of deliverable. Milestones should be critical path efforts that must be completed to advance the project to a successful outcome; for example, if a software application requires federal approvals or certification prior to go-live, that certification process including the maximum required days for obtaining the approval or certification should be included in project milestones. Determining a planned start and end for each milestone and baselining them so that accurate and current project status and performance health are provided throughout the lifecycle is important; for MIRPs, this baselining process begins in the Business Case with initial project milestones and is refined further in the Project Plan. While milestone actual start and end dates may vary from the planned ones, planned dates should not be changed without following a documented change management process (typically a PCR). Otherwise, if these planned dates are constantly changed, there is essentially no baseline to measure against for project health. If planned dates are missed, a PCR or a change to the planned milestone completion date may not necessarily be required. For example, for a MIRP, the slippage might just be reported in that period's QAT Monitoring Report as an Issue. Changes of 10 percent or greater in MIRP cost or schedule from original baselines must be documented

with an agency's documented change request approval and a revised TPDF Business Case (or Cost-Benefit Analysis for an increase of 50 percent or greater) submitted to the QAT (Government Code, Section 2054.303).

The QAT-defined project performance metrics should be accessible for the team and other stakeholders throughout the project duration. These metrics should also reflect accurate information. To enable accuracy and meet the minimum expectations for QAT reporting of MIRPs, milestones should be appropriately weighted, and **all** milestones (not just contract-related or post-execution milestones) from the Business Case and Project Plan should be listed in TPDF Monitoring Reports with planned start and end dates. Projects typically vary their actual start and end dates for milestones, particularly when following an Agile methodology. This variation is considered to be a normal business operation, and change is *not* always an indicator of a project's actual risk profile. The Legislature requires setting milestones and targets as one method to determine the project's performance over time, with the understanding that all monitoring reports are a snapshot in time. If trends develop toward critical path items continually missing targets—or several major project changes occur—the project's risk profile could increase.

PMI's PMBOK provides processes, principles, methods, formulas, and calculations to successfully monitor and manage the progress and health of a project. Two of these critical calculations—cost performance index (CPI) and schedule performance index (SPI)—monitor both cost and schedule performance for a project.

Agile MIRP Cost Index

CPI is the ratio of Earned Value (EV) to the total project cost to date (total cost); CPI measures the rate of progress as compared to the original budget. Figure 10 - Non-Agile MIRP CPI Values and Associated Health Metric Calculations for QAT Monitoring Reports shows the CPI formula and values as the minimum required performance metrics for all MIRPs along with their associated color calculation according to the TPDF Monitoring Report.
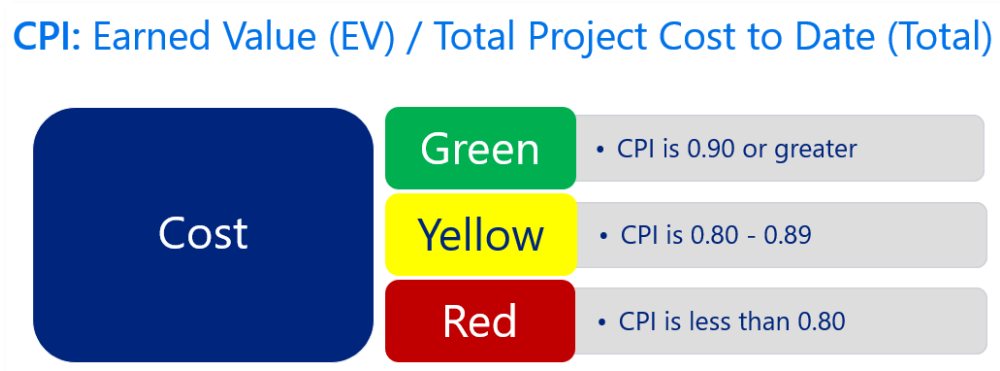

CPI: Earned Value (EV) / Total Project Cost to Date (Total)

Cost		
	Green	• CPI is 0.90 or greater
	Yellow	• CPI is 0.80 - 0.89
	Red	• CPI is less than 0.80

Figure 10 – Non-Agile MIRP CPI Values and Associated Health Metric Calculations for QAT Monitoring Reports

For projects using an Agile methodology, a 1.0 CPI means that a project is progressing at the expected rate; a CPI value greater than 1.0 means that a project is progressing faster than the expected rate; and CPI value less than 1.0 means that a project is progressing slower than the expected rate. Figure 11 - Agile MIRP CPI Values and Associated Health Metric Calculations for QAT Monitoring Reports shows the Agile methodology CPI colors and values.

- Agile CPI Formula: CPI = (Estimated Hours/Story Points) / (Actual Hours/Story Points)

CPI: (Estimated Hours/Story Points) / (Actual Hours/Story Points)

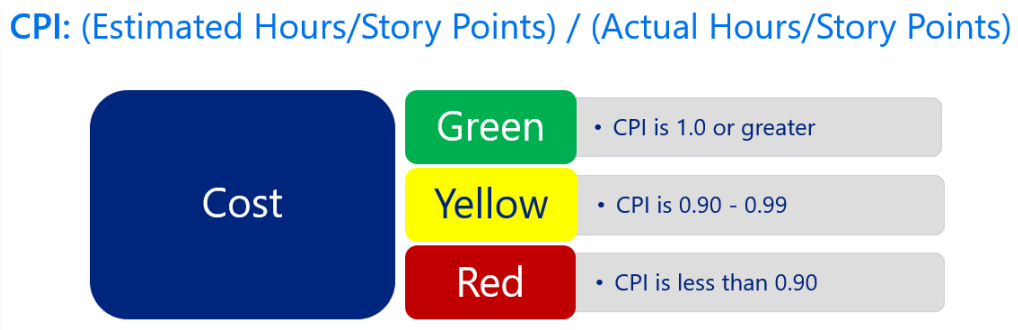| Cost		
Green	• CPI is 1.0 or greater
Yellow	• CPI is 0.90 - 0.99
Red	• CPI is less than 0.90

Figure 11 – Agile MIRP CPI Values and Associated Health Metric Calculations for QAT Monitoring Reports

Each agency may use either measurement strategy for reporting; however, each agency must inform the QAT in advance of the first Monitoring Report on which methodology they plan to use. In addition, for Agile reporting, agencies must provide the numerical calculations for the planned and actual story points and hours as supporting documentation for the performance metric as part of the Monitoring Report data.

Agile MIRP Schedule Index

SPI is the ratio of Earned Value (EV) to Planned Value (PV); SPI measures the rate of progress as compared to the original schedule. Figure 12 - Non-Agile MIRP SPI Values and Associated Health Metric Calculations for QAT Monitoring Reports shows the SPI formula and values as the minimum required performance metrics for all MIRPs along with their associated calculated colors according to the TPDF Monitoring Report.
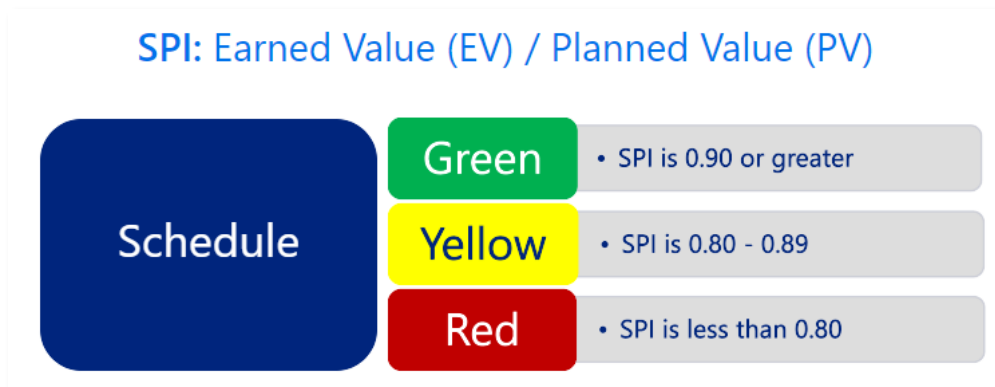
SPI: Earned Value (EV) / Planned Value (PV)

Schedule		
Green	• SPI is 0.90 or greater
Yellow	• SPI is 0.80 - 0.89
Red	• SPI is less than 0.80

Figure 12 – Non-Agile MIRP SPI Values and Associated Health Metric Calculations for QAT Monitoring Reports

For projects using an Agile methodology, a 1.0 SPI would mean a project is progressing at the expected rate; an SPI value greater than 1.0 means a project is progressing faster than the expected rate; and an SPI value less than 1.0 means a project is progressing slower than the expected rate. Figure 13 - Agile MIRP SPI Values and Associated Health Metric Calculations for QAT Monitoring Reports demonstrates how the Agile methodology SPI is calculated and reported.

- Agile SPI Formula: SPI = (Actual Story Points or Features/Sprints) / (Estimated Story Points or Features/Sprints)
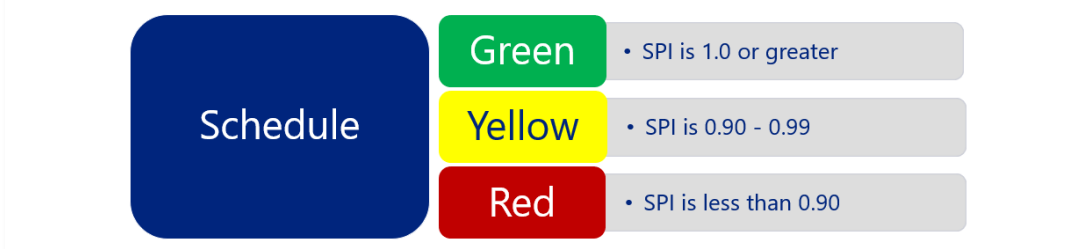

Figure 13 - Agile MIRP SPI Values and Associated Health Metric Calculations for QAT Monitoring Reports

CPI and SPI can be measured in three different ways in Agile, and each agency should be very clear prior to the first Monitoring Report on which measurement method they plan to use. Once selected, the measure chosen from the following will be used for the life of the project:

- CPI and SPI are measured during each individual active sprint.
- The aggregate CPIs and SPIs for the entire project are measured as they span across multiple sprints and cycles.
- The aggregate CPIs and SPIs are measured for all sprints running in parallel during each cycle.

Each agency is welcome to use either measurement strategy for reporting but must let the QAT know in advance of the first Monitoring Report which methodology they plan on using. In addition, for Agile reporting, each agency must provide the numerical calculations for the planned and actual story points and hours as supporting documentation for the performance metric as part of the Monitoring Report data.

Agile SPI and CPI methodology and associated formulas and calculations should be established at a minimum for the Agile MIRP in the planning phase; however, determining and documenting these elements at the IT department or agency level (or both) to enable promotion and shared understanding is recommended. The methodology, formulas, and calculations are continually reported to QAT throughout the MIRP lifecycle to enable the evaluation of project cost and schedule health. The following examples describe how to interpret SPI and CPI results using story points.

SPI/CPI Calculations and Results Examples

Single sprint SPI example reflecting a problem:

Actual Story Points = 21 (only completed 2 of the planned user stories in sprint)

Estimated Story Points = 26 (3 user stories with story point values of 13, 8, and 5)

- SPI = (Actual Story Points or Features/Sprints) / (Estimated Story Points or Features/Sprints)
- SPI = (21/1)/(26/1) = 21/26 = 0.807
- *This is <1 and signals a schedule problem.*

Single sprint SPI example tracking to intended outcome:

Actual Story Points = 29 (completed all 3 user stories and brought in 1 more—3 Story Points—from the backlog during the sprint)

Estimated Story Points = 26 (3 user stories with story point values of 13, 8, and 5)

- SPI = (Actual Story Points or Features/Sprints)/(Estimated Story Points or Features/Sprints)
- SPI = (29/1) / (26/1) = 29/26 = 1.11
- *This is >1 and has a good schedule performance index.*

CPI Example reflecting a problem:

Estimated hours = 10 hours

Actual Hours = 38

- CPI = (Estimated Hours/Story Points or Features) / (Actual Hours/Story Points or Features)
- CPI = (10/1) / (38/1) = 10/38 = .26
- Note: It does not matter if 1 or if many story point(s) are used in the formula; the resulting calculation is the same.
- *This is <1 and signals a cost problem.*

CPI Example tracking to intended outcome:

Estimated hours = 10 hours

Actual Hours = 9 hours

- CPI = (Estimated Hours/Story Points or Features) / (Actual Hours/Story Points or Features)
- CPI = (10/1) / 9/1 = 10/9 = 1.11
- *This is >1 and has a good cost performance index.*

Agile MIRP Quality Indicator

MIRP quality primarily derives from product quality measures reported throughout the project life cycle from the approved Quality Register submitted in the TPDF Project Plan. Agencies create their own Quality Register against which the MIRP quality will be assessed throughout the project lifecycle and during each QAT monitoring period. The QAT's minimum requirement for a Green Quality indicator is the existence of a submitted Quality Register. Defining *realistic* quality expectations early in the project for each project stage (Initiation, Planning, Execution, Monitor and Control, and Closing) is integral to ensuring alignment with the Agile MIRP team and any potential vendor. Essentially, quality expectations that are both reachable and comprehensive enough to accurately gauge progress (or a lack thereof) should be set. User acceptance testing (UAT) results (including both count and severity level of defects and bugs) should be included as part of the Quality metrics. UAT results are a typical measurement used to determine project quality during the execution and development phase.

Table 3 - Example of MIRP Project Plan Quality Register shows an example of a MIRP Quality Register that would be submitted with the MIRP TPDF Project Plan. The Register is consulted for every QAT monitoring period, and any quality results are reported in the MIRP TPDF Monitoring Report.

Table 3 - Example of MIRP Project Plan Quality Register					
No.	Project Phase	Quality Objective	Quality Standard	Tracking Tool or Measure	Result
1.	Planning	Incorporate Quality in every stage of SDLC.	Deliverable standards outlined in the deliverable expectations document.	Existence of completed and approved TPDF Project Plan Quality Register.	Green: Quality Register created and submitted to QAT. Red: Quality Register not submitted to QAT.
2.	Executing	System defects will be corrected and accepted prior to exiting UAT phase; good alignment between requirements and software provided to users.	Acceptance criteria detailed in Test Plan that is based on number and severity of defects found and number of test scripts run.	Count and severity of defects detected during System Test.	Green: <15% of user acceptance test scripts fail the first time they are executed in user acceptance testing. Zero high or critical severity defects are present upon completion of user acceptance testing. Yellow: >15% and ≤25% of user acceptance test scripts fail. Zero high or critical severity defects exist at completion of user acceptance testing.

					Red: >25% of user acceptance test scripts fail. OR One or more high or critical severity defects exist at completion of user acceptance testing.
3.	Closing	After go live, agency should not experience any major outages to functionality or data.	No critical or high severity defects should be discovered after go-live.	Count and severity of defects discovered after go-live.	Green: Zero critical or high severity defects. Red: Critical or high severity defects observed and logged.
4.	Closing	Project sponsor should score 80% or greater on satisfaction survey of project results.	Project sponsor is satisfied with project results.	Satisfaction survey administered to Project Sponsor.	Green: score of 80% or greater on satisfaction survey. Yellow: ≥70% and <80% Red: <70%

A best practice to help ensure quality is to engage third-party independent verification and validation (IV&V) to perform a comprehensive review of project deliverables and processes, and provide consistent, accurate feedback about the true state of the project. IV&V is recommended for all MIRPs valued at **$10 million or greater**.

To help preserve the *quality above all else* principle, Agile teams must never be influenced or pressured by any role or person in the organization to add user stories or acceptance criteria into a sprint when the team believes they cannot meet the definition of done. These additions (or added scope and scope creep) are a common problem with almost all organizations that implement an Agile-at-Scale model. Agencies should strive for a collective effort to provide technical scrum teams with a level of protection and autonomy against additions outside of project scope or team schedule and abilities. Adherence to this principle prevents poor quality for the entire body of work pulled into the sprint. Taking more work into a sprint than the team thinks they can complete with a devotion to quality reduces the quality of all other user stories.

Agile MIRP Scope Indicator

Agencies are required to report on MIRP scope health (Green, Yellow, or Red) based on the formula and results shown in Figure 14 - MIRP Scope Formula and Associated Health Colors for QAT Monitoring Reports.
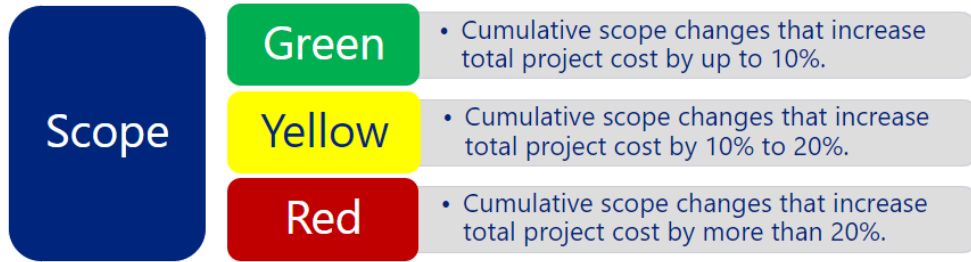

Figure 14 - MIRP Scope Formula and Associated Health Colors for QAT Monitoring Reports

6.0   CLOSE

6.1   PROJECT CLOSURE

In the Close phase, the project artifacts—including comprehensive lessons learned—are completed and archived in the project repository, the project activities are completed, and the project transitions to a fully operational status. This process ensures that the information is accessible to all relevant stakeholders (including future project teams, auditors, and regulatory bodies) and can be used for future reference or analysis.

One of the essential components of the project closure process is the confirmation that all in-scope business goals and objectives have been met. For MIRPs, the required closure document is the TPDF Post-Implementation Review of Business Outcomes (PIRBO) Template, which is submitted six months after the project ends. The PIRBO is used to verify whether all project deliverables have been completed, objectives have been met, and project documentation has been saved in suitable shared storage. The PIRBO also documents project expenditures and quantitative benefits achieved.

Additionally, agencies may want to complete a customer satisfaction survey of executive stakeholders (such as the business sponsors) to determine their level of satisfaction with the project outcomes and obtain information that may be helpful in planning future agency IT efforts and projects.

In addition to confirming that all in-scope business objectives have been met, the closure process documents how outstanding actions and issues will be handled to ensure that they are appropriately tracked and resolved. Project teams must identify any remaining tasks or problems that must be addressed before a project can be considered successfully completed.

KEY ACTIVITIES
- Formally transition the project to Operations/Maintenance status.
- Archive project artifacts.
- Document lessons learned and hold review meetings.
- Gain approval for formal closure of the project.
- Complete a customer satisfaction survey.
- Submit the completed PIRBO within six months of project end.

TOOLS AND TEMPLATES

Lessons Learned
Document the project Lessons Learned (from DIR's PM Essentials) by the project team and stakeholders continuously throughout the project lifecycle using any pertinent project artifacts, as well as project team feedback obtained from any

lessons learned brainstorming or meetings. This document summarizes the key learnings and recommendations about the project objectives, scope, performance, risks, issues, successes, failures, and best practices. It also identifies the actions and improvements that need to be taken for future projects and should be stored in a central repository or knowledge base.

Post-Implementation Review of Business Outcomes (PIRBO) (Government Code, Section 2054.306)

The TPDF PIRBO Template, submitted to the QAT within six months of a project's end, documents whether all in-scope business objectives have been met and necessary project items have been finalized. The PIRBO also documents project expenditures and quantitative benefits achieved. This closure documentation includes making sure that all project deliverables have been completed and that project documentation has been saved in suitable shared storage. In addition, the PIRBO documents how outstanding actions and issues will be handled.

7.0 AGILE PROJECT CYCLE EXAMPLE

As an instructive example, a full project cycle is provided including a detailed increment and sprint description:

1. **INITIATION**

   1.1. Complete and submit to the Legislative Budget Board during the legislative cycle a Biennial Operating Plan (BOP) that includes the MIRP description and costs. If the MIRP originates in the legislative off-cycle, complete and submit the Legislative Budget Board's BOP Amendment to add the project to the agency's BOP. In conjunction with the BOP, complete and submit to the Legislative Budget Board and the QAT the TPDF Business Case, Business Case Workbook, and Statewide Impact Analysis Templates. In the TPDF documentation, complete the following steps:

   1.1.1. Identify the business issue or needs to be addressed and associated costs.

   1.1.2. Identify the benefits of doing the project, including financial impacts such as return on investment (ROI).

   1.1.3. Refine and formalize a scope statement.

   1.1.4. Develop the high-level approach to complete project work, including project resources (such as vendors, staff, staff augmentation), products (such as SaaS or custom), and the methodology (Agile, Waterfall, or Hybrid).

   1.1.5. Define expected outcomes and key milestones including an estimate of the number of sprints that may be required or the overall duration of the engagement rather than specific detailed requirements that need to be met (or both).

   1.1.6. Develop a high-level schedule that identifies key IT milestones (sprint plan, release schedule, or both).

   1.1.7. Identify project risks and constraints.

   1.1.8. Identify key stakeholders and required resources.

2. **PLAN**

   2.1. After project approval by the QAT, complete and submit to the QAT the TPDF Project Plan and the Acquisition Plan Templates (if required; $10 million or greater contract and/or additional monitoring agency under TAC, Chapter 216). In the TPDF documentation, complete the following steps:

   2.1.1. Identify project team members and procurement efforts, and define roles and responsibilities.

   2.1.2. Formalize a development plan and refine the Business Case milestones.

   2.1.2.1. Identify environments to be used.

2.1.2.2. Create a change migration or promotion plan.

2.1.3. Complete any procurements and applicable documentation, including required QAT solicitation notifications and reviews (for contracts over $10 million).

3. **EXECUTION (Execute/Monitor & Control)**

3.1. Execute any vendor contracts as applicable.

3.2. Onboard any vendors.

3.3. Hold sprint kickoff meetings.

3.4. Hold daily check-in meetings (sometimes called Scrum meetings, daily stand-up meetings, iteration/sprint planning meetings, etc.).

3.5. Collect and document requirements and deliverables not identified in earlier stages of the project so they can be incorporated into upcoming sprints.

3.6. Record, collect, and document Lessons Learned continuously so that future sprints can be adjusted accordingly.

3.7. Perform continual monitoring, including monthly or quarterly QAT-required TPDF Monitoring Reports.

3.8. Plan sprints.

3.8.1. Hold a development team event open to all, facilitated by the Scrum Master.

3.8.2. Facilitate forecasting by the development team to identify the "Ready" Product Backlog Items (PBI) that will get to "Done" within the timeframe of the sprint.

3.8.3. Identify only "Ready" PBIs as candidates for inclusion in a sprint.

3.8.4. Identify the number of PBIs influenced by prior sprint velocity and current sprint forecast capacity.

3.9. Hold daily check-in meetings (sometimes called Scrum meetings, daily stand-up meetings, iteration/sprint planning meetings, etc.).

3.9.1. Hold a Development Team event open to all, facilitated by a Scrum Master.

3.9.2. Perform Development Team's coordination of activities that make the plan for the day.

3.9.3. Address blocking issues brought to the attention of the Scrum Master for assistance to resolve.

3.10. Develop and test.

3.11. Review any IV&V reports and recommendations; address as applicable.

3.12. Facilitate continuous and open communication.

3.13. Hold a sprint review.

      3.13.1. Hold a Scrum Team event that is open to all for the benefit of project stakeholders and facilitated by the Scrum Master.

      3.13.2. Complete the Product Owner's description of PBIs and workflows (the increment) that was completed since the most recent Sprint Review.

      3.13.3. Perform the Development Team demonstration of completed and done PBIs.

      3.13.4. Solicit feedback from stakeholders to help inform the Product Manager (or Product Owner) on the next steps.

      3.13.5. Discuss project issues.

    3.14. Hold a Sprint Retrospective meeting.

      3.14.1. Create a Scrum Team-only event facilitated by the Scrum Master.

      3.14.2. Perform Scrum Team identification of opportunities to improve by reflecting on previous sprints.

      3.14.3. Review working agreement by the Scrum Team, making modifications as needed and desired for process improvement.

      3.14.4. Perform Scrum Master resolution of issues beyond the control of the Scrum Team.

    3.15. Identify a release date.

      3.15.1. Plan and orchestrate the release.

      3.15.2. Deploy the release.

    3.16. Revert to sprint planning (3.8) if not all sprints are completed.

4. **CLOSURE** (after all sprint cycles are complete)

    4.1. Transition the project to Operations/Maintenance.

    4.2. Archive project artifacts.

    4.3. Document Lessons Learned and hold a project review meeting.

    4.4. Gain approval for formal closure of the project.

    4.5. Complete and submit to the QAT the TPDF Post-Implementation Review of Business Outcomes (PIRBO) to evaluate project outcomes.

8.0 GLOSSARY

Agile – A development model that, among other characteristics, emphasizes working software and effective response to changing requirements.

Acceptance Criteria –The conditions that the feature must satisfy to be accepted by a user (or user representative); should indicate a clear pass/fail result.

Application Development – Typically refers to the primary implementation of *new* applications, or enhancement efforts for existing applications with a level of effort at 80 hours or more. Software-as-a-Service Solutions (SaaS) and commercial-off-the-shelf solutions (COTS) may be considered development projects if they include customizations as part of implementation. Data Migration and Legacy System replacements or enhancements may also be considered application development.

Application Enhancement – Refers to adding *new features/functionality* to an already completed project. For example, if an agency decides after initial implementation it would like to add additional features or functionality that were not previously expected or scoped, that addition is defined as an enhancement. If the enhancement involves more than 80 hours to complete, the enhancement is defined as a development project and must be reported as such.

Application Maintenance – Refers to ongoing administration of accepted and "completed" functionalities/features. For instance, there may be a maintenance contract to: provide ongoing support to end users, fix *previously*

unknown bugs in the accepted functionality, and ensure that the server does not go down, and provide a very minor, low level of effort (under 80 hours of work) for each enhancement to the already live system. Any activities outside of this definition would be considered development and be required to follow state reporting requirements as defined in GAA, Article IX; Government Code, Chapter 2054; and TAC, Chapter 216.

Acquisition Plan – Helps the QAT understand how a particular state agency will define the parties' roles, measure vendor performance, and control changes to a project's scope during the acquisition of technology related goods and/or services from vendors (Texas Government Code, Section 2054.305). A state agency may be required to use DIR's Statewide Project Delivery Framework Acquisition Plan Template to comply with the requirement. If the major information resources project involves a procurement subject to QAT review, an Acquisition Plan must be kept in the procurement file. Once an Acquisition Plan is filed with QAT, an agency may proceed with forming solicitations. Agencies assigned a rating of "additional monitoring warranted" under Government Code, Section 2261.258(a)(1), are required to provide an Acquisition Plan for all MIRPs (Texas Administrative Code, Chapter 216).

Backlog – A collection of requirements to be implemented in a product.

Backlog Refinement – A planning process that involves the entire team reviewing user stories and breaking down use cases into smaller, user-focused stories.

Biennial Operating Plan (BOP) – A tool that agencies use to plan for the appropriate use of information resources to support their mission, goals, objectives, and strategies. The BOP implements the agency's Strategic Plan and aligns with the State Strategic Plan for Information Resources. It demonstrates how the agency intends to accomplish its strategic objectives using information technology in alignment with the agency's budget. Agencies enter their BOP information into the Legislative Budget Board's ABEST website.

Business Case – This document (Link to TPDF Template) is a narrative comparison of the business problem and solution costs to the expected project benefits/outcomes based on a business case analysis process. As a result of the 87th Legislature, Government Code, Section 2054.003(2-a), defines "Business Case" as a comparison of business solution costs and project benefits based on a solution assessment.

Business Case Workbook – This document (link to TPDF template) provides the quantified estimates of all project costs, both capital and non-capital, project benefits, and returns on investment. QAT requires agencies/institutions of higher education (IHEs) to report all capital and non-capital costs associated with a major information resources project in the Business Case Workbook, entering costs as required in each field. All costs relating to a major information resource project, including costs for vendor services, agency personnel services, and agency personnel fringe benefits are required to be reported to QAT as part of project monitoring.

Contract – A contract, grant, or agreement, including a revenue generating contract, an interagency or interlocal grant or agreement, purchase order or other written expression of terms of agreement or an amendment, modification, renewal, or extension of such for the purchase or sale of goods or services that was entered into or paid for, either in whole or in part, by a state agency or IHE (2024-2025 GAA, 88th Legislature, Article IX, Section 7.04, and Government Code, Chapter 2054).

Defect – This occurs when software code does not meet the acceptance criteria, design specifications or business expectations. Defects are logged and tracked for resolution throughout the project life cycle.

Epic – Represents large chunks of functionality and typically represents the overall scope for a capability in a given release.

Increment / iteration – The segments of an Agile effort in which development is planned, executed, and released in smaller portions.

Issue – A realized Risk or other unanticipated situation that is actively affecting project progress. Requires mitigation planning and resolution.

Key Performance Indicator (KPI) – Key performance indicator, a metric or mark that gauges the performance of an activity usually to inform the health of an effort or project.

Lessons Learned – A continuous and post-project review of information learned during the project. These should be captured and documented continuously throughout the project life cycle.

Major Information Resources Project (MIRP) – Any information resources technology project identified in a state agency's Biennial Operation Plan (BOP) with development costs that exceed $5.0 million and that: requires one

year or longer to reach operations status; involves more than one state agency; or substantially alters work methods of state agency personnel or the delivery of services to clients. The term also includes any information resources technology project designated by the Legislature in the General Appropriations Act as a major information resources project and any information resources technology project of a state agency designated for additional monitoring under Government Code, Section 2261.258(a)(1), if the development costs for the project exceed $5 million (Government Code, Section 2054.003(10)).

Milestone – A specific point in a project that marks a significant deliverable or item in the critical path of development. Milestones are used to gauge project progress. Typically, there are deliverables associated with milestones.

Monitoring Report – Once a project is initiated and reviewed by QAT, project performance is monitored using the DIR Monitoring Report Template for the project duration. Performance is based on the following: Overall project status; performance indicators, including schedule, cost, scope, and quality; risks/issues/changes; and project start and end dates and costs. QAT determines the monitoring schedule. All agencies must provide their monitoring reports both in PDF format using the required Monitoring Report Template, as well as manually entering the required project information into SPAR.

Operations – The ongoing work to sustain or provide a service. Operations may be subject to change control processes. It is possible that during the course of sustaining or providing a service, the work to add additional features of a service or product, or to create a new unique product or service could be defined as a project.

Product Backlog Item (PBI) – A feature or story in the project's product backlog that potentially could be addressed during the project.

Product Manager – Develops and relays a vision of the product(s) to build. Prioritizes requirements/deliverables as well as reprioritizing requirements and deliverables throughout the life of the project, specifically at the start of each new sprint. Serves as the official representative for the agency in communicating with the QAT, providing status updates, and responding to all requests for information.

Product Owner – Assures the business needs and requirements are clear to developers who are delivering the solution. Organizes and helps maintain the backlog.

Project – An initiative that provides information resources technologies and creates products, services, or results within or among elements of a state agency; and is characterized by well-defined parameters, specific objectives, common benefits, planned activities, a scheduled completion date, and an established budget with a specified source of funding (Government Code, Section 2054.003, and Texas Administrative Code, Chapter 216).

Project Change Request (PCR) – This is a mechanism to document and effect a significant change to project cost, scope, schedule, goals, and objectives.

Project Plan – This TPDF Template builds on the general planning information contained in

the Business Case, including more detail and specifics on monitoring and control methods, quality, communication, configuration, performance, and risk management. It documents overall governance and provides a planning blueprint for both project management and technology-related activities and deliverables. Additionally, the Project Plan demonstrates how the agency considered incorporating into the project the applicable best practices recommended in the QAT Annual Report (Government Code, Section 2054.304(d)). The Project Plan should be updated and submitted to QAT throughout the duration of the project as needed.

Quality Assurance Team (QAT) – An interagency workgroup established to provide ongoing oversight of "major information resources projects" as defined in Texas Administrative Code, Chapter 2054, for all state agencies, including IHEs that are assigned additional monitoring under Government Code, Section 2261.258(a)(1). QAT members include the Comptroller of Public Accounts (CPA), the Department of Information Resources (DIR), and the Legislative Budget Board (LBB). The State Auditor's Office (SAO) serves in an advisory role to QAT.

Requirement – Documentation that identifies the specific end results needed by the customer. Because requirements can be extensive or complex, especially in software development efforts, a requirements template helps elicit, clarify, and record what the customer is seeking at the end of the project. It also helps with testing during verification of the end result. Much of the scope of a project can be found in the requirements.

Retrospective – Similar to Lessons Learned, a retrospective is typically a less formal method to reflect on what went well, what went wrong, and what can be improved in the project at the end of a release, project, or a project phase. It involves the project team and sometimes the stakeholders. The purpose of a retrospective is to generate concrete and actionable ideas for improvement and to celebrate team achievements.

Risk – The likelihood that a project will not deliver a quality solution based on scope, budget, and schedule commitments. A risk is something that is not within the project team's direct control. Individual risks require mitigation planning and resolution.

Scope – The set of work that is planned and executed; for Agile, it is the set of work planned and executed during a sprint.

Scrum – A popular project methodology aligned with the Agile model with focus on teamwork and iterative software releases.

Scrum Master – The role that ensures the development team and product manager are working toward a common sprint outcome.

Sprint – The effort over a fixed period (usually measured in weeks) in which a specified software feature(s) is developed, tested, and released.

Sprint Planning Ceremony/Kickoff – The first meeting of a sprint.

Sprint Review – The Sprint review is a meeting held after each sprint in which the team demonstrates their completed stories to stakeholders and users.

Stakeholder(s) – An individual, a group, or an organization with a particular interest or stake

in the decision-making process and overall operations of a business, organization, or project.

Standups – Daily short meetings, typically held standing up, face-to-face, to encourage brief sessions. This is not a status meeting; it is for people to ask quick questions that will allow them to get information or remove blockers to progress. After the standup meeting, long answers and discussions should follow in smaller groups.

Statewide Project Automated Reporting (SPAR) system – DIR system used to track and review projects. Agencies that are implementing major information resources projects enter and upload project data directly into the SPAR system for QAT's review. Requires a license issued by DIR to access.

State agency – A department, commission, board, office, council, authority, or other agency in the executive or judicial branch of state government that is created by the constitution or a statute of Texas, including a university system or IHE (Government Code, Section 2054.003(13)).

Statewide Impact Analysis – This template contains an assessment of the project's impact on the use of information technology resources across the state.

Technical Architecture Analysis – This template reviews the proposed technical architecture for the project's use of industry accepted standards. It is only required by agencies with an "additional monitoring" designation from the State Auditor's Office if requested by QAT as described in Government Code, Section 2261.258.

Texas Project Delivery Framework – A set of standardized tools and templates, maintained by DIR in collaboration with statewide agencies to enable agencies to successfully deliver MIRPs on budget and on schedule.

Theme – Portfolio-level business objectives that provide differentiation and strategic advantage. They provide business context for portfolio strategy and decision-making, representing aspects of the enterprise's strategic intent and serving as a vital tool for communicating critical business objectives to Agile Teams and Agile Release Teams, aligning their purpose with the purpose of the broader enterprise. They provide much of the organizational clarity that fuels effective decentralized decision-making and ensure that Value Streams are driven by measurable business outcomes.

User Story – Narrative that describes the Who (the type of "User"), the What (what they want), and the Why (the achieved benefit). It is a description of desired functionality, told from the perspective of the user.

Waterfall – In contrast to an Agile model, a project methodology in which all the features are rolled out in one release through a linear development process. This is sometimes described as a "big bang" deployment.

Velocity - How quickly a development team completes work during an iteration, as measured in story points completed.

9.0 REVISION HISTORY

Version	Date mm/dd/yy	Name	Description
1.0	03/19/2024	DIR	Original Draft
2.0	04/18/2024	PDAB	Edited as suggested by PDAB
2.1	05/07/24	DIR DED	Edited as suggested by DIR DED
2.2	05/30/24	DIR CTO	Final edits

10.0 ADDITIONAL RESOURCES

- QAT Policy and Process Guide – Contains all QAT policies/processes for MIRPs.
- QAT website – Training resources, including Framework webinars, and process and policy information are available 24/7.
- Texas A&M Project Management Companion Guide – The Texas A&M System has developed this guide to help members be compliant with TAC, Chapter 216. It helps users define a project, provides a method for classifying projects based on their complexity and risk, and outlines minimum project management requirements needed to complete any size project. The Companion Guide also outlines how to meet TAC 216 requirements for project governance, assessment, and reporting. The Companion Guide has been tested with both Agile and Waterfall development approaches.
- TPDF Reference Guide – Quick reference showing Framework document process and templates.
- U.S. General Services Administration's 18F Agile Guide – This is a federal Agile informational resource developed by 18F, which is a team of designers, software engineers, strategists, and product managers within the General Services Administration. 18F collaborates with other agencies to fix technical problems, build products, and improve public service through technology.