

Quality Assurance Guidelines
For Projects in the
UNT Health Science Center

Section 4.3
Process for Planning
Low QA Focus Projects
(Recommended)

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1. PURPOSE OF THE PROCESS

The Project Planning Process provides a framework for software development and software maintenance teams to develop their project plans. Using the activities detailed in this process description and in supporting documents, project teams describe the work they will do, develop estimates of effort, develop a schedule, plan their management and technical approaches, identify measures to gather, and develop a risk management approach.

2. SCOPE OF THE PROCESS

This process has been tailored for Low QA Focus projects, which represent a very percentage of projects at the UNT Health Science Center. The table below identifies the characteristics of Low QA Focus projects:

Characteristic	Low Focus
Budget (with implied effort)	Less than \$500,000
Organizations Involved	Work group within agency
Time to Deliver	Less than 6 months to operation
Impact on Agency	Minimal change, or extends systems now in use
Impact Outside Agency	Affects mostly internal operations of the agency
Technology	Standard, proven agency technology
Supplier Involvement	Good experience in the past working with this supplier
System Complexity	Standalone system

In addition, templates and tables have also been tailored for the Low QA Focus type of project. In some case, templates and/or tables have been identified as optional.

2.1 ACTIVITIES

The following table describes how project planning activities will be implemented for Low QA Focus projects.

Activities	Low QA Focus
Tailor Life Cycle Model to Project	Attempt to make one delivery to customer
Establish Project Environment	Team likely to be co-located with existing environment

Activities	Low QA Focus
Create Work Breakdown Structure	Use task granularity ≤ 1 person week; built by project manager
Identify Project Risks	Use a short list of key risks for identification
Define Project Measures	Collect fundamental measures of size, defects, milestone attainment, effort
Allocate Work to Personnel	May not be necessary
Develop Initial Project Schedule	Attempt to get level of confidence $>80\%$
Complete Project Plan	Use concise plan formats

2.2 ROLES

The following table describes the roles for the Low QA Focus project.

Role	Low QA Focus
Project Manager	Person in this role is also likely to be a member of the team doing the work
Configuration Management	Role may be performed by project manager or a member of the team

2.3 DELIVERABLES

The following table describes the deliverables for Low QA Focus projects.

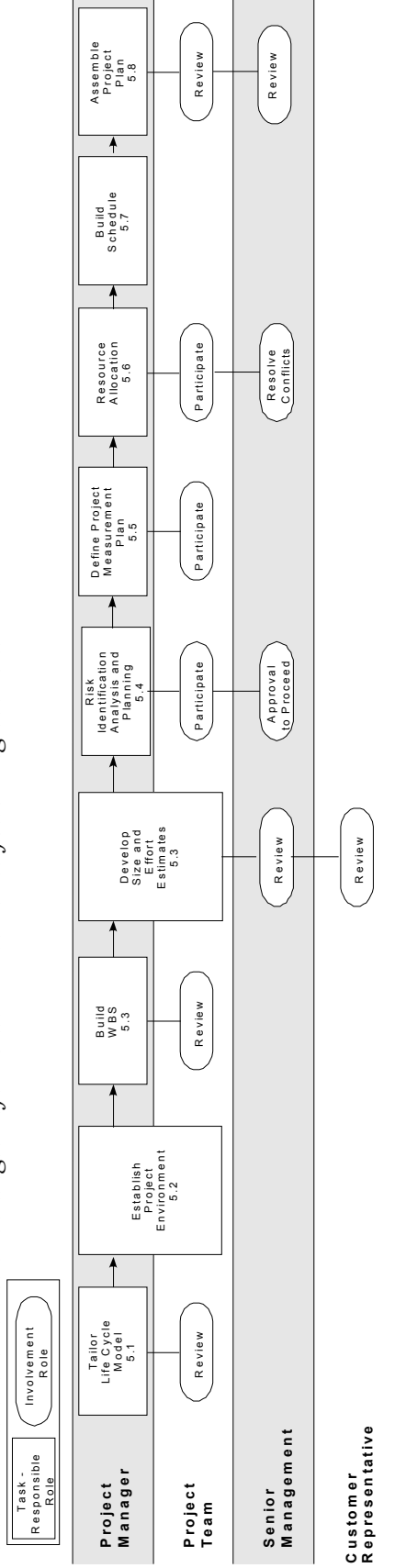
Activity Deliverable	Low QA Focus
Life Cycle Model	Usually a variant of the waterfall
WBS	Table in project plan
Size/effort estimate	Table in project plan
Resource allocation	Sentence or two in project plan
Schedule	Table in project plan
Budget	Table in project plan

3. ROLES IN THE PROCESS

Role Names	Role Definitions
Project Manager	<ul style="list-style-type: none">• Responsible for planning and tracking the project• Reviews the plan for compliance to standards and organization processes
Project Team	<ul style="list-style-type: none">• Participates in building and reviewing the plan and project work items; developers or implementers of a system
Senior Management	<ul style="list-style-type: none">• Authorizes the project and provides personnel and other resources• Reviews the plans to ensure they meet organization goals• Reviews the plan to ensure configuration management has been addressed and adequate resources are available
Customer Representative	<ul style="list-style-type: none">• Represents the customer and/or user of the project results; provides input to the plan concerning requirements, may review the plan to ensure it meets user needs

4. GRAPHICAL OVERVIEW OF THE PROCESS

Note: The numbers in each rectangle refer to activities in the following section.



5. ACTIVITY DESCRIPTIONS

The following sections provide details on each activity: a description of the purpose, entry and exit criteria, and the sequence of tasks to be done. Tasks are shown along with the roles generally responsible and/or involved in those tasks. Note that initial project plan development should be done prior to, or in conjunction with, preparation of the Biennial Operating Plan.

5.1 TAILOR LIFE CYCLE MODEL TO PROJECT

If the organization usually follows one or more life cycle models, this activity tailors a specific approach for the project from that model (or models.) If there is no organization-preferred model, this activity defines its sequence of activities (life cycle) for the project plan. See Short Project Summary Template.

Purpose: Select the appropriate activities and work products for this project.

- Entry Criteria:**
- A project manager has been assigned.
 - The project scope has been defined in a statement of work or other similar document.
 - User requirements have been established, at least at a high level.
 - Other systems affected by this project have been identified.
 - Candidate project team members have been identified.

Roles	Tasks
Project Manager	<ul style="list-style-type: none"> • Reviews goals, deliverables, team composition, and technologies available. • Identifies an appropriate project plan structure and template. • Reviews the available life cycle models with a quality assurance representative. • Develops the life cycle model of activities, work products, and reviews for this project and describes it in the project plan. This is the basis for the high-level work breakdown structure. • Sets up project folder or other mechanisms to collect project planning and performance information.
Project Team	<ul style="list-style-type: none"> • Review the project planning approach and project life cycle model

- Exit Criteria:**
- Project participants have reviewed the planning approach and project life cycle model and agree they are appropriate

5.2 ESTABLISH PROJECT ENVIRONMENT

To ensure a project can be run effectively, the environment must be established, with adequate project tools and facilities. The tasks in this activity may be done early in the planning cycle, done late in the cycle, or repeated several times, if the requirements are not completely known at the start of the project, or if the team composition changes during the project. *Note that this activity refers only to the tools and facilities needed to run the project, not the development environment.*

Purpose: Identify and procure the tools, materials, and facilities needed by the project team for this project.

Entry Criteria:

- Size of team and general approach to performing the project have been established
- Technology and life cycle model for project implementation have been identified.

Roles	Tasks
Project Manager	<ul style="list-style-type: none">• Reviews selection criteria for methods and tools to support the technology and approach• Gathers selection team (perhaps a subset of the project team)
Project Team	<ul style="list-style-type: none">• Selects methods and tools for the project to use.• Identifies team communication needs (networking, email, voice).• Examines needs of each project team member with respect to training in the methods, training and availability of tools, communication, space and other physical facilities.
Project Manager	<ul style="list-style-type: none">• Arranges for training, tools, and facilities to meet needs.

Exit Criteria:

- Methods, tools, environment support are defined for the project.
- Environment and training needs have been identified for all members of the team.
- Arrangements have been made (or are in process) for necessary training, tools, and facilities.

5.3 CREATE WORK BREAKDOWN STRUCTURE

To be able to estimate the effort required to do the work on a project, and to determine the staffing needs, the first activity required is to carefully describe the work to be accomplished. The work items are documented in a work breakdown structure that provides for efficient planning and tracking.

In phase-based planning, the estimate, as well as the rest of the project plan, is reviewed and revised at the end of each life cycle phase. In this approach, a detailed estimate is prepared for the following phase, with an updated high-level estimate for remaining phases.

Purpose: Identify and describe the work elements in the project plan, any dependencies between them, and approximate level of effort of each.

Entry Criteria:

- Project requirements and goals are well-defined
- Life cycle, development approach, methods and tools have been selected

Roles	Tasks
Project Manager	<ul style="list-style-type: none">• Drafts an initial list of work items by using statement of work, user requirements, and/or other documents describing the system to be built
Project Manager, Project Team	<ul style="list-style-type: none">• Review the work elements to identify dependencies and ordering of work• Use an estimation process to create effort estimates for each work item
Project Manager	<ul style="list-style-type: none">• Document the results as a Work Breakdown Structure (WBS) in the project plan (or a living document attached as an appendix to the project plan)• Review results with Customer Representative, Quality Assurance, and Senior Management to ensure all needed work is included

Exit Criteria:

- Project team members and other affected groups are in agreement with the estimates, the completeness of the list of work items, and the dependencies between them.

5.4 IDENTIFY PROJECT RISKS

At this point in the planning, and again at significant points of change in the project, the project team performs a risk identification process. This process is described in detail in the *Process for Analyzing and Managing Project Risk*.

5.5 DEFINE PROJECT MEASURES

Any project can benefit from using appropriate measures to track progress in dealing with its particular issues, objectives, and/or risks. This activity defines the most useful measures for a given project (see also *Process for Evaluating the Effectiveness and Efficiency of Information Resources Projects*.)

Purpose: Identify the key measures to be gathered for this project, what purposes they serve, and how reports will be published.

Entry Criteria:

- Project objectives and requirements have been established.
- Work Breakdown Structure has been developed.
- Risks have been identified.

Roles	Tasks
Project Manager, Project Team (or a subset)	<ul style="list-style-type: none"> • Identifies the key issues faced by the project, by examining project goals and objectives, project environment, risks, and other project characteristics • Maps the issues to categories of common issues, and reviews the measures available from industry knowledge for <ul style="list-style-type: none"> • Project progress • Product quality • Process performance
Project Manager	<ul style="list-style-type: none"> • Prepares the measurement plan for the project, incorporating it into the overall project plan. • Identifies who will gather the measures at what points using what methods. • Updates the measurement plan as needed, based on review.

Exit Criteria:

- All measures currently required by the organization are included in the plan.
- Measures have been defined to address all key project issues.
- All measures have definitions for gathering and reporting.

5.6 ALLOCATE WORK TO PERSONNEL

This activity generally is done in iteration with the scheduling activity, to accommodate schedule requirements and to address other issues and conflicts.

Purpose: Given the Work Breakdown Structure (WBS) and identified team members, determine which personnel are responsible for what work.

Entry Criteria:

- WBS and estimate have been developed.

- Statement of Work and/or user requirements document have been provided.

Roles	Tasks
Project Manager	<ul style="list-style-type: none"> • Discusses work to be done with individual team members, and determines best match of skills to work
Project Team	<ul style="list-style-type: none"> • Individuals agree to division of the work • Individuals provide calendar constraints and other input to help determine best fit of work to personnel
Project Manager	<ul style="list-style-type: none"> • Reviews match of personnel to work required and determines need for additional personnel or changes in personnel assignment • Works with management to secure the needed personnel.
Senior Management	<ul style="list-style-type: none"> • Resolves conflicts in resource availability

- Exit Criteria:**
- All work elements in the WBS have personnel sufficient to accomplish the work.
 - Personnel have the available time at the appropriate point in the schedule to accomplish the work.
 - Management of the project team and support organizations have agreed to the staffing plan.
 - Output of this activity is reviewed with output of the Create Work Breakdown Structure and Develop Initial Project Schedule activities, and they are consistent.

5.7 DEVELOP INITIAL PROJECT SCHEDULE

This activity is generally done in iteration with the allocation of personnel, since initial schedules often reveal conflicts in resource needs or dependencies between tasks. The result of this activity is the first project schedule, likely to be adjusted as the project proceeds and conditions change in the later phases of the project. See Short Project Summary Template.

Purpose: Create an initial schedule of the work of the project.

- Entry Criteria:**
- Work Breakdown Structure has been developed.
 - Personnel have been allocated and they have agreed to the work they can do for the project.

Roles	Tasks
Project Manager	<ul style="list-style-type: none"> • Uses the task list from the WBS, the effort estimates, and the personnel assignments as input to a project planning tool. • Generates initial schedule with the planning tool, and reviews results to see that it meets project goals.

Roles	Tasks
	<ul style="list-style-type: none"> • Uses project management tool and consultation with team to make any adjustments needed in order of the work, in assignment of personnel to the work, or in the specific WBS items included, to meet the project goals. • Negotiates changes, as needed, to modify project requirements to meet the project goals, given any resource constraints. • Negotiates changes, as needed, to modify personnel commitments to meet project goals, given requirements constraints. • Reviews complete initial schedule with Senior Management and all affected parties. • Documents resulting schedule in the project plan (or in a living document that is an appendix to the project plan).

- Exit Criteria:**
- The schedule is acceptable to all involved with the project.
 - Work identified can be completed within the constraints of the current schedule.
 - Output of this activity is reviewed with output of the Create Work Breakdown Structure and Allocate Project Resources activities, and they are consistent.

5.8 COMPLETE PROJECT DEVELOPMENT PLAN

Remaining portions of the Project Development Plan are completed, based on the organization plan template.

Purpose: Gather all plan(s) into their initial completed forms and ensure commitment of all affected groups.

- Entry Criteria:**
- Project life cycle has been tailored for this project.
 - Initial WBS, resources, and schedule have been developed.
 - Support team members have been identified.

Roles	Tasks
Project Manager	<ul style="list-style-type: none"> • Completes the Project Development Plan.
Project Team	<ul style="list-style-type: none"> • Conducts a technical review of the plans.
Senior Management Customer representative	<ul style="list-style-type: none"> • Review completed Project Development Plan.

- Exit Criteria:**
- All members of the team have read and agree with the project plans (Quality, CM, and Project Development Plan).

- Senior Management and the leaders of the support groups have approved the above plans.

6. MEASURES

Measures of the project progress, product quality, and process performance are included in the *Process for Project Monitoring and Control*. Measures that can be used to track and manage project planning activities include the following.

Handling of Project Planning - Track items such as the following:

- Schedule attainment – did planning begin and end on the dates planned?
- Effort required – compare the amount of planning effort to what was expected

7. VERIFICATION ACTIVITIES

While project planning is being done, the following verification activities are appropriate for management:

- Review the assumptions being used by the project manager and project team at the outset of planning. Ensure that any Statement of Work or project scope documents are available and correctly represent the project situation.
- Review drafts of project plan elements as they are developed, to provide input and feedback on team assumptions and requests for information.
- Review the final project plan, to ensure all management expectations are being met.

8. DOCUMENT CONTROL

Revision	Date	Description
1.0	2/1/00	Incorporate Quality Assurance Guidelines
1.1	3/01/01	Tailor for Low Focus

A. SUPPORTING TEMPLATES

Please see the following items, accessible separately:

- **Short Project Summary – (Recommended)** - example of a minimal plan for a small project; this can also be used for tracking progress on the project
- **Project Development Plan template – (Optional)** annotated outline of what should go into a generic project plan for a medium or large project; this can be used for software development or for other types of projects
- **WBS Elements from the Life Cycle Structure of IEEE 12207 – (Optional)** - list of WBS items that might be included in a life cycle for a project, with components for
 - Primary life cycles for acquisition, supply, development, maintenance, operations
 - Supporting processes for documentation, configuration management, quality assurance, verification, validation, joint review, audit, problem resolution
 - Organization processes for (project) management, infrastructure, improvement, and training

Please also see the supporting templates for risk management.

B. SUPPORTING CHECKLISTS

Please see the following checklist, accessible separately:

- **Project Planning Checklist – (Recommended)** - items to consider when checking the work of a project team in building a project plan