Quality Assurance Guidelines
For Projects at the
UNT Health Science Center

Sections 1-4
Guidelines and Process Manual

V 1.1
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1. PURPOSE OF THE MANUAL

The Texas Government Code, Chapter 2054, Subchapter G, Sections 2054.151-2054.157 (Information Resources Management Act, IRMA) requires that each state agency "develop and implement its own internal quality assurance (QA) procedures[1]." Using these procedures will help information resources technologies projects to be successfully completed on time and within budget, and to provide the outcomes that were planned. It has been determined that these procedures should "make use of widely adopted, non-proprietary standards, guides, and templates wherever possible[2]." The Quality Assurance Guidelines project provides materials that can be used by agencies to develop their own approach to achieving the legislature's goals.

A model quality assurance process is a simple set of activities that describe what should be done to ensure that information resources technologies projects will be successfully completed on time and within budget, and that the projects will provide the outcomes that were planned. The UNT Health Science Center has tailored these model processes, templates, and checklists to fit their specific needs for the organization to follow.

The material presented in this manual is *not* intended to be a tutorial on the subject matter. Readers are expected to be familiar with the topics discussed, or have access to the training needed to effectively implement the guidelines.

The tailored processes, templates, and checklists contained here will evolve as the UNT-HSC implements them and performs the process improvement activities identified in the Post-Project Reviews guideline. It is expected that the DIR will continuously review agency implementations of this material, and extract the best adaptations for inclusion in the model processes. This will provide a mechanism for inter-agency learning, allowing each to improve based on the experiences of others.

The processes contained in this manual are summarized in the following table. Based upon the tailoring for Low QA Focus projects, UNT-HSC has designated the processes as either **Recommended** or **Optional**.

Model Process	Summary
Process for Analyzing and Managing Project Risk	Project teams use this process to identify and proactively manage the risks on their project. **This is a UNT-HSC Recommended process.**
Process for Project Planning	This process provides a framework for development and maintenance teams to develop their Project Development Plans. **This is a UNT-HSC Recommended process.**
Process for Determining the Benefits and Costs of	This process is used for developing, monitoring, and revising benefit and cost information as projects are

[1] Texas Government Code, Chapter 2054, Subchapter G, Section 2054.151(b)
[2] Department of Information Resources Invitation to Negotiate, August 10, 1999, Section 2

Model Process	Summary
Information Resources Projects	implemented. **This is a UNT-HSC Optional process**.
Process for Project Monitoring and Control	Project managers and project teams use this process to ensure the team is making satisfactory progress to the project goals. **This is a UNT-HSC Recommended process.**
Process for Post Project Reviews	This process consists of activities performed by a project team at the end of the project's life cycle (or at the end of significant phases of work) to gather information on what worked well and what did not, so that future projects can benefit from that learning. **This is a UNT-HSC Recommended process.**
Process for Evaluating the Effectiveness and Efficiency of Information Resources Projects	This process is designed to help an agency determine the measures it needs to evaluate project effectiveness and efficiency, and how to set up an appropriate measurement process. **This is a UNT-HSC Optional process.**

The six model processes contained in this manual are structured identically:

1.	**Purpose of Process or Procedure**	Describes what the process is intended to do and why it is necessary
2.	**Scope of the Process**	Specifies the conditions under which the process applies (entry and exit criteria.) Includes a table showing how to tailor the process based on project characteristics, such as project type, size, and complexity.
3.	**Roles in the Process**	Identifies the roles having responsibility, accountability and authority within the scope of the process.
4.	**Graphical Overview of the Process**	A Rummler-Brache (swim lane) Diagram showing activities in the workflow or the process by role
5.	**Activity Description**	A step-by-step description of how the process is executed, including use of applicable tools, templates and checklists.
6.	**Measures**	Describes measurement of process activity, useful in determining the effectiveness of the process.
7.	**Verification Activities**	Describes the activities needed to assure that the process is being correctly followed, and that it is useful.
8.	**Document Control**	Contains a revision history for the process document.

Appendices are also provided, and may include:

Additional Resources	A list of resources available for additional information about the process.
Supporting Templates	Templates for artifacts described in the process.
Supporting Checklists	Checklists for evaluating artifacts produced in the process, or used as tools within the process.

2. RELATED DOCUMENTATION

Several documents should be considered foundation information for the material in this manual. They supplement and may supercede the material contained here. Every effort has been made to make the material in this manual consistent with the following documentation, but where discrepancies exist, the following take precedence. These supplemental documents are

1. "How to Prepare the Biennial Operating Plan: Instructions for State Agencies and Universities 2000-2001", Department of Information Resources, Oversight Operations Division, July 1999
2. "Quality Assurance Review Guide for Major Information Resources Projects", Version 1.0, Department of Information Resources, Office of the State Auditor, November 1996
3. Texas Government Code, Chapter 2054, Subchapter G, Section 2054.151(b)

Note that "Quality Assurance Review Guide for Major Information Resources Projects" is currently undergoing revision. It is expected that the next release will be fully compatible with this manual.

In addition, the following document, produced as a companion to this manual, contains additional resources supporting the guidelines

> "A Survey of Current Best Practices and Utilization of Standards in the Public and Private Sectors", produced by TeraQuest Metrics for the Department of Information Resources, December 1999

3. TAILORING THE GUIDELINES

3.1 TAILORING THE GUIDELINES

Any project can benefit from the processes in the Quality Assurance Guidelines, but the specific use of the processes on a project needs to take into account the characteristics of that project. The extent to which these guideline processes are applied to a given project varies based on its criticality, size, cost, and other features. In some cases, the guidelines will be used more informally than in others. Some deliverables or reviews can be abbreviated for smaller projects, while they need careful detail in larger and more complex projects. For small projects, the same person may perform multiple roles, where larger projects may have multiple people performing the same role. **These UNT-HSC guidelines have been tailored for the very high percentage of our projects that fall under the Low QA Focus project category. If a project fall in the Medium or High QA Focus category, the un-tailored guidelines will be implemented. See Section 3.2.**

3.2 LEVEL OF QUALITY ASSURANCE FOCUS

To determine the right level of quality assurance, i.e. the appropriate use of a process, projects are divided into three levels of focus, based on the following collection of project characteristics:

- Budget – funds required to perform the project, generally a reflection also of the effort for software and systems projects (since much of the cost is in the effort)
- Organizations involved – those participating in the project as stakeholders
- Time to deliver – calendar time for the project
- Impact on Agency – depth of change implied to the organization processes
- Impact Outside the Agency
- Technology – maturity of the technology being used
- Supplier Involvement – type and level of experience working with the suppliers
- System Complexity – assessment of how difficult the system will be to develop and/or integrate with existing systems

The Quality Assurance Focus Table shows example values of these characteristics that suggest high, medium, or low focus on quality assurance activities. Each of the quality assurance guideline processes suggests how to modify the process for projects that match these characteristics. As an agency adapts a process to its use, it should identify any other project characteristics to consider, and corresponding ways to modify each process. Then, that information should be added to the agency's version of the Quality Assurance Focus Table and to the tailoring tables in each process.

Note that the characteristics listed in the following table represent the industry-recognized factors that are most closely related to a project's probability of success. Here, success means on time delivery, within budget, with desired functionality and acceptable quality levels. If an agency's projects have different characteristics, or additional characteristics, they should be placed in the table, with entries in each corresponding cell.

UNT-HSC has tailored the guidelines to conform to the Low Focus column below.

Characteristic	Low Focus	Medium Focus	High Focus
Budget (with implied effort)	Less than $500,000	$500,000 - $1,000,000	$1,000,000 or greater
Organizations Involved	work group within agency	agency-wide	More than one agency or government involved
Time to Deliver	less than 6 months to operation	between 6 months and a year to operation	More than a year to operational status
Impact on Agency	Minimal change, or extends systems now in use	Moderate change or modifies systems now in use, but doesn't change work processes	Significant change to work methods of agency personnel and/or delivery of services to agency clients

Characteristic	Low Focus	Medium Focus	High Focus
Impact Outside Agency	Affects mostly internal operations of the agency	Indirectly impacts citizens and/or has some visibility to the legislature	Directly impacts citizens of the State and/or has high visibility to the legislature
Technology	Standard, proven agency technology	Proven in industry or at State level, but new to agency or program areas	Emerging, unproven, or new for the State
Supplier Involvement	Good experience in the past working with this supplier	Other agencies have had problems with this supplier or team members are distributed in several locations	Outsourcing for the first time, working with a new supplier, or the supplier has been difficult to deal with in the past
System Complexity	standalone system	some integration with another system	New system needs to integrate with several others, and/or they are critical systems

Quality Assurance Focus Table

3.3 USING THE TAILORING GUIDANCE

Within each guideline process, suggestions are provided on how to tailor the following process elements (**The UNT-HSC tailoring approach followed these recommendations**):

- Activities – how to interpret the activities of the guideline, based on the level of quality assurance focus; in general, each activity is listed, with suggestions for how a project at each level of focus performs that activity
- Roles – what roles may be handled differently, depending on the project characteristics; in general, a subset of the roles is cited, since most of the roles for a project will be the same, no matter its size or complexity
- Deliverables – how specific deliverables might be build differently, based on the project characteristics; in general, a subset of the deliverables is cited, since some will be the same for all types of projects

3.4 RELATIONSHIP TO RISK AND ISSUE MANAGEMENT

From the *Glossary*, a risk is defined as "The possibility of an act or event occurring that would have an adverse effect on the state, an organization, or an information system." The key word is "possibility." For the Quality Assurance Focus Table, the values of the characteristics that determine the level of QA focus should be known with fair certainty. Thus, these characteristics do not usually represent risk factors. However, there will be other factors that have an impact on project success, for which the future occurrence is unknown, i.e. they haven't happened yet, but might in the future. These are identified during the project's risk management process. Still other factors are characteristic of the agency, not to any particular project, e.g. chronic shortage of resources, lack of executive support, lack of project management training, etc. When these characteristics are present for a project, they should be classified as issues and dealt with as described in the Project Development Plan section covering issue management.

4. GUIDELINES

4.1 RECOMMENDED USAGE

There are currently six processes that have been documented for use by UNT-HSC project managers. Where the project is determined to be covered under the criteria for a Low QA Impact project, the project manager shall use the recommended processes. The following table shows the approximate sequence in which the process will be implemented and indicates whether the project is considered Recommended or Optional by the institution. The title and identifying number for each guideline is included in the first column.

UNT-HSC Process	Summary
4.3 - Process for Project Planning	This process provides a framework for developing the project plan. Although Risk Management can start earlier, initial project plans generally are developed first. Use the information and templates / checklists to build the project plan. **This is a UNT-HSC Recommended process.**
4.4 - Process for Analyzing and Managing Project Risk	Project teams use this process to identify and proactively manage the risks on their project. The process needs to be performed early in the project cycle so that appropriate mitigation plans can be identified and implemented. **This is a UNT-HSC Recommended process.**
4.5 - Process for Project Monitoring and Control	Project managers and project teams use this process to ensure the team is making satisfactory progress to the project goals. **This is a UNT-HSC Recommended process.**
4.6 - Process for Post Project Reviews	This process consists of activities performed by a project team at the end of the project's life cycle (or at the end of significant phases of work) to gather information on what worked well and what did not, so that future projects can benefit from that learning. **This is a UNT-HSC Recommended process.**
4.7 - Process for Determining the Benefits and Costs of Information Resources Projects	This process is used for developing, monitoring, and revising benefit and cost information as projects are implemented. **This is a UNT-HSC Optional process**.
4.8 - Process for Evaluating the Effectiveness and Efficiency of Information Resources Projects	This process is designed to help an agency determine the measures it needs to evaluate project effectiveness and efficiency, and how to set up an appropriate measurement process. **This is a UNT-HSC Optional process.**

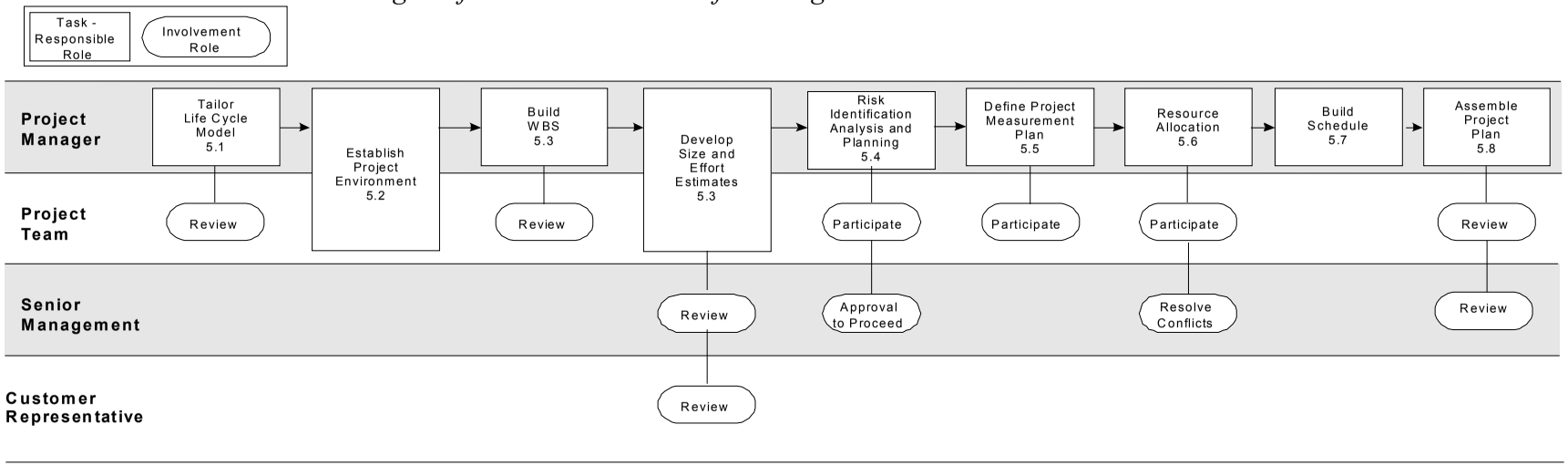
4.2 PROCESS FLOW OVERVIEW

To give the project manager or reader an overview of the 6 processes, below are the process diagrams that have been extracted out of the individual guidelines. These diagrams have been tailored to reflect the implementation of Low QA Focus projects.

4.3 PROCESS FOR PROJECT PLANNING

Recommended

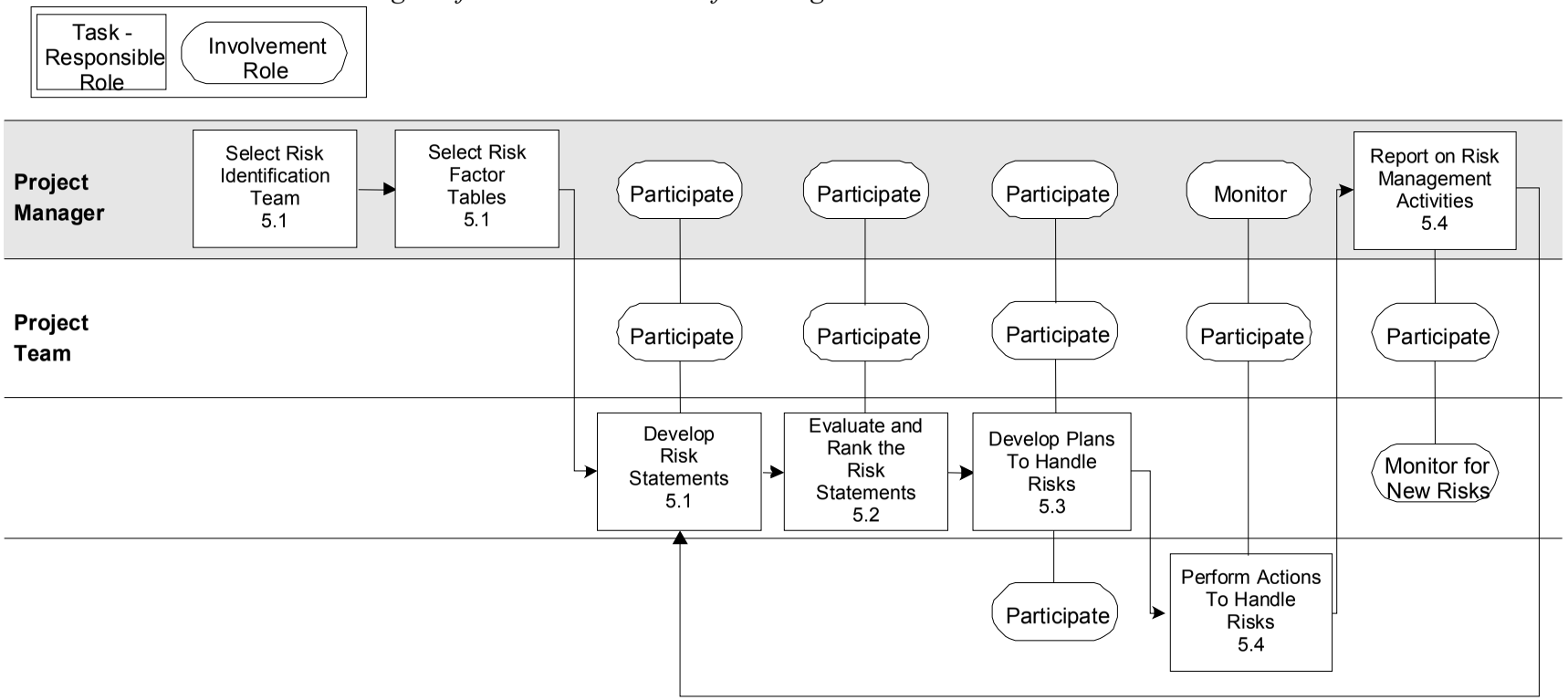
Note: The numbers in each rectangle refer to activities in the following section.



4.4 PROCESS FOR ANALYZING & MANAGING PROJECT RISK

Recommended

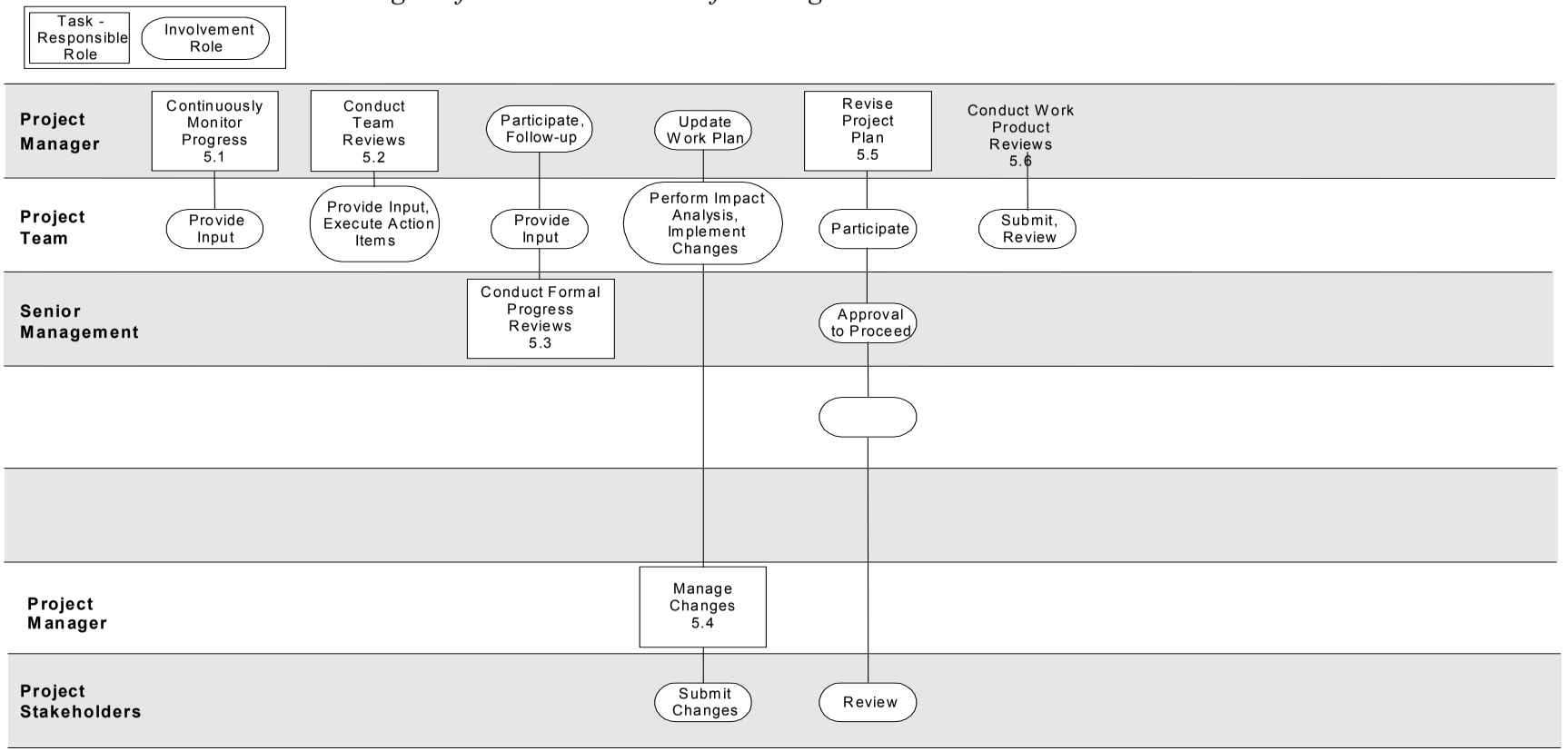
Note: The numbers in each rectangle refer to activities in the following section.



4.5 PROCESS FOR PROJECT MONITORING & CONTROL

Recommended

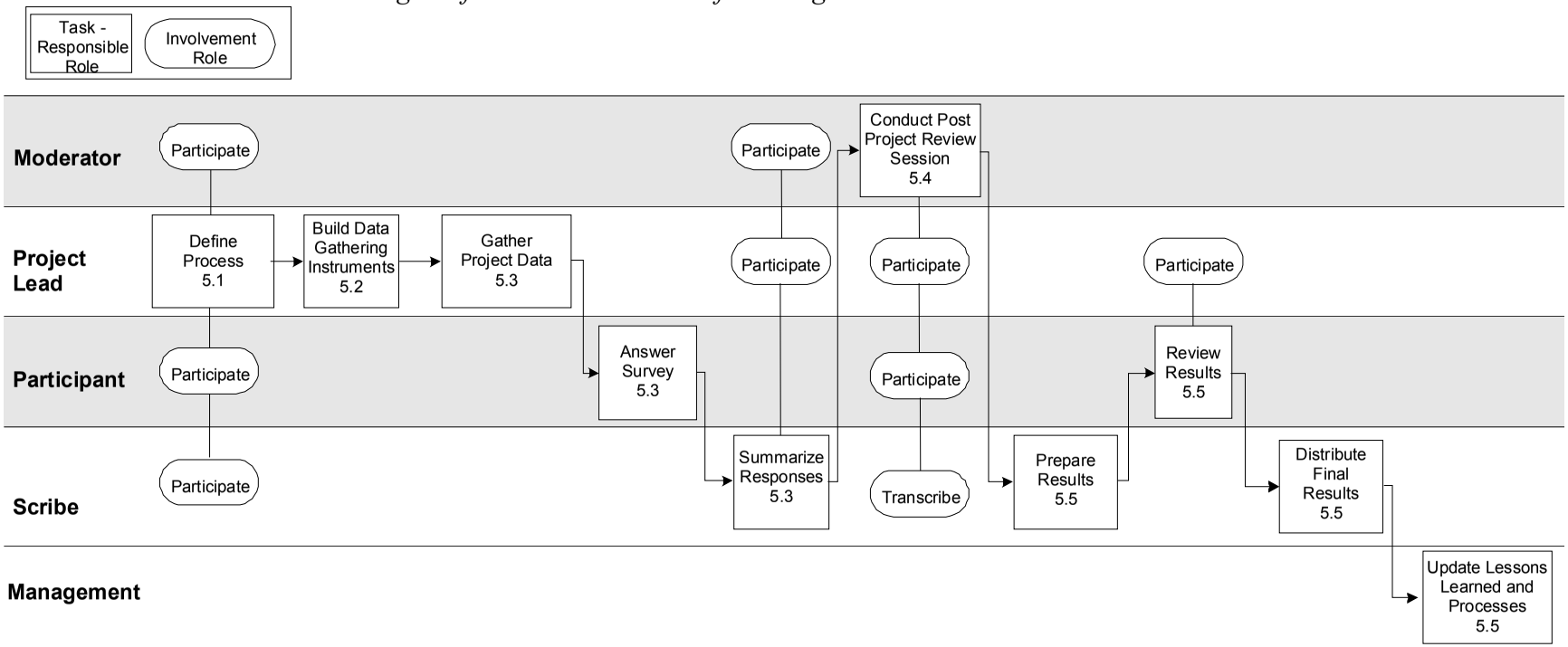
Note: The numbers in each rectangle refer to activities in the following section.



4.6 PROCESS FOR POST PROJECT REVIEWS

Recommended

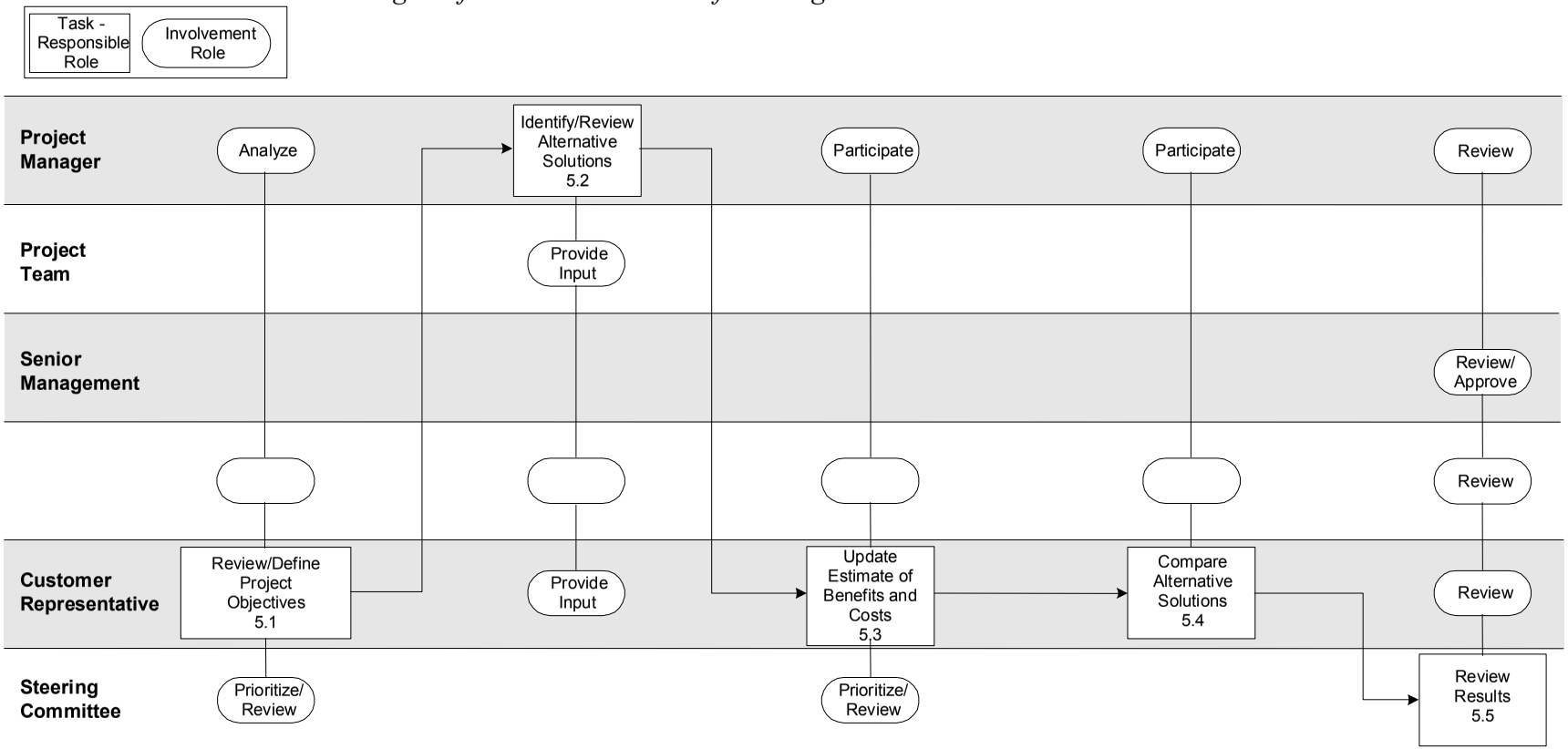
Note: The numbers in each rectangle refer to activities in the following section.



4.7 PROCESS FOR DETERMINING BENEFITS & COSTS OF IR PROJECTS

Optional

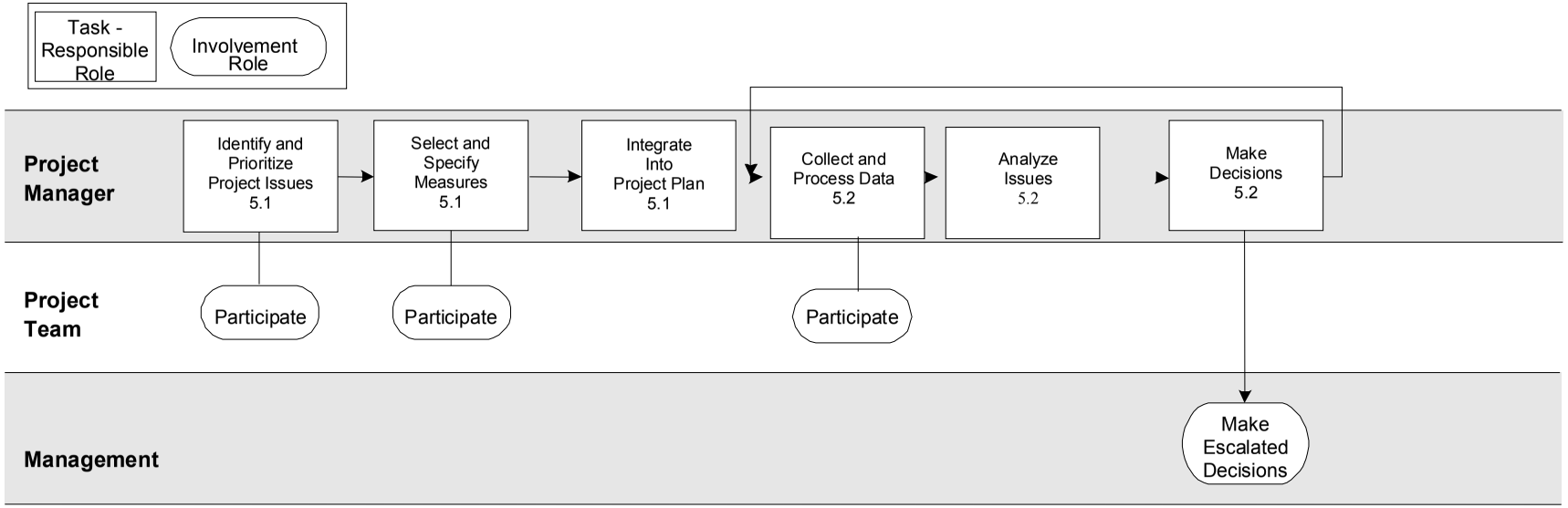
Note: The numbers in each rectangle refer to activities in the following section.



4.8 PROCESS FOR EVALUATING EFFECTIVENESS & EFFICIENCY OF IR PROJECTS

Optional

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



4.9 DOCUMENT ORGANIZATION

Sections 4.3 through 4.8 and Section 5 are contained in separate sections / directories. All templates and checklists are group with their respective sections.

4.10 DOCUMENT CONTROL

Revision	Date	Description
1.0	2/1/00	Incorporate Advisory Group revisions
1.1	3/01/01	Tailor for Low Focus

4.11 PROCESS IMPROVEMENT

As a result of documenting "lessons learned" (See Section 4.6 Post Project Reviews), or if you find any errors or wish to make a recommendation for improvement, please email your suggestions / comments to rwoelfel@hsc.unt.edu or contact:

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