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وزارة الأشغال
Ministry of Works

Kingdom of Bahrain
Ministry of Works

Project Management System

Construction Projects Life Cycles

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DOCUMENT CONTROL

Revision History

DATE	REV#	SECTION	CHANGE BY	DESCRIPTION OF CHANGE
15-Dec-09	0		Georges B. Abrial (PMO)	Initial release
18-Mar-10	1	-1.0 Overview -1.1 Origination -1.7 Implementation Phase -1.8 Closeout Phase Appendix A & B	Saliha Ismail (PMO) Hammad Khaliq	-Pg#4 Changed <i>seven</i> to <i>eight</i> , Replaced <i>Initiation</i> from <i>Origination</i> -Pg#4 Added 1.1 Origination Phase & text, -Pg#5 Amended Initiation Phase and text -Pg#8 Updated text -Pg#8 Updated Text -Updated Diagram -Replaced <i>Tender & Award (Consultation)</i> to <i>Consultant Selection</i> -Replaced <i>Construction Implementation</i> to <i>Implementation</i> -Replaced <i>Tender & Award (Procurement</i> <i>Implementation to Tender & Award</i>

Reviewed by	Role	Date
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Approved by	Date	Signature
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Construction Project Life Cycle and Gating Methodology

1.0 Overview

The process for the MoW Project Life Cycle and Gating Process for MoW Construction Projects will be applied to all construction projects managed by MoW Directorates, departments or groups including, but not limited to, projects falling within the following areas:

- Construction Projects Directorate
- Housing Projects Directorate
- Roads Planning & Design Directorate
- Sanitary Engineering Planning and Projects Directorate
- Strategic Projects Directorate

The methodology consists of eight (8) phases and six (6) gate reviews with supporting documents customized to the requirements of MoW construction projects. It links a collection of logically related project activities culminating in the completion of a major deliverable.

The process includes the key activities which must be carried out in each phase, from project origination through to closeout. It provides a series of outcomes or outputs associated with the activities at each phase. It is to be noted that only a high-level overview of the technical activities is outlined, as MoW management and staff are well acquainted with the details, which are documented in the Ministry's manuals.

The gate review process will provide MoW stakeholders with a disciplined approach to the management of construction projects which focuses on quality of execution, and use of a complete process to manage and deliver the project.

Appendix A illustrates the overall phases and gates. Appendix B contains detailed schematics of each of the phases.

1.1 Origination Phase

The Origination Phase formally recognizes the existence of an initiative that may result in the development of a project. The initiative should be linked to the strategic business objectives of the Ministry. A MoW project begins with the identification of a need, problem or opportunity to be addressed by the Ministry, its departments or branches. Included in the Origination phase are the development of a high-level business case; identification of a Sponsor and a Business Developer; identification of key stakeholders; project classification, the application for funding the project;

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submission for financial or technical to the appropriate authorities. It concludes with a documented decision to proceed to the Initiation phase.

The development of a Business Case should include but not be limited to the following:

- Rationale/background for the project
- Identification of the strategic fit to MoW overall strategy/objectives
- High level assumptions, constraints and risks
- Preliminary budget estimate
- High level Schedule
- Dependencies
- Master Plan
- Key project stakeholders and project organization (governance) structure
- Project strategy or approach, which determines which phases, will be performed by MoW staff and which will be outsourced.

1.2 Initiation Phase

The Initiation Phase starts with projects appointing a Project Manager to register and activate the project through PMO. The key activities in this phase are the further development of the business case, project charter and preliminary scope statement; a confirmation of project classification; assignment of project steering committee and site selection.

The business case is updated in this phase and approval for the appointment of the Project Manager must be obtained through the Project Steering Committee (PSC). The Project Manager would prepare the Project Charter. The Project Manager would then recommend a Core Project Team for the steering committee's approval. Based on the Project Charter, the Project Manager and the Project Core Team would prepare the Preliminary Scope Statement, the project approach or strategy, and project resourcing including funding, and submit to the steering committee's approval. The Project Steering Committee (PSC) must review and approve the business case, project charter, preliminary scope statement and project funding and resources for the project to proceed to the Planning Phase.

The project approach or strategy will identify which of the project remaining basic phases (Planning, and Implementation) will be conducted by the Ministry, and which are to be performed by outside parties, such as consultants and contractors. This will determine the placement of the Tender & Award Phases.

It concludes with the approval of Project Charter and Scope Statement before proceeding to Planning Phase after the Phase 1 Gate Review.

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1.3 Planning Phase:

The Planning Phase key activities are the development of the requirements of the MoW Project Execution Plan (PEP) which will be used to guide the execution of the project. The PEP details the business and construction requirements, defines the project scope, and includes the work breakdown structure, schedule, project organization (governance) structure; change control process and management plans for risk, communications, cost, procurement and quality.

At this phase, the decision must be made on whether or not to outsource the Design & Analysis Phase, and/or the Construction/Implementation Phase of the project. If the decision is to outsource, then the process for tendering and awarding the respective contract must be undertaken.

This phase concludes with the Project Steering Committee (PSC) reviewing and approving the PEP, project funding and resources for the project to proceed to the Tender & Award (Consulting) Phase through the Gate Review.

1.4 Consultant Selection Phase:

The Consultant Selection Phase key activities are related to the execution of the MoW tendering procedures.

The tendering of a MoW contract is clearly articulated in the standard MoW Tendering Policy, which is governed by the Tender Law and is driven by the Tender Board policy, to which all government agencies must comply. The MoW has developed templates such as Prequalification (PQ) for contractors; Expression of Interest (EOI) for consultants and Request for Proposal (RFP) to which all MoW departments must comply. All projects must meet the requirements of this process in order for the tender to proceed. It requires the approval of the MoF and the Tender Board for the process to be executed and the tender awarded. The award of a contract provides the authorization for moving the project to the Construction / Implementation Phase.

This phase concludes with the Project Steering Committee (PSC) reviewing and approving the contract awarded to the consultant, project funding and resources for the project to proceed to the Planning Phase through a Gate Review.

NOTE: For some projects, this phase may occur before the Planning Phase, i.e. completion of the Project Execution Plan is necessary before the appointment of an external consultant as maybe the case for Special Projects; or in cases where the project will be managed in-house, this phase may not be required at all.

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1.5 Analysis & Design Phase:

The Analysis & Design phase addresses all the technical specifications related to the final product/deliverable including drawings and other design specifications. This is unique to each project type and is dependent on the particular requirements of the project.

The key activities for the Design and Analysis Phase may include the preparation of preliminary design, detailed designs, drawings and specifications; conduction of requisite surveys / assessments; acquisition of mandatory government permits to support the execution of the project; and development of performance and reliability requirements.

The Project Steering Committee (PSC) must review and approve the implementation plan, contract, project funding and resources for the project to proceed to the Tender & Award (Procurement / Implementation) Phase through a Gate Review.

1.6 Tender & Award Phase:

The Tender & Award Phase key activities are related to the execution of the MoW tender procedures.

The tendering of a MoW contract is clearly articulated in the standard MoW Tendering Policy, which is governed by the Tender Law and is driven by the Tender Board policy, to which all government agencies must comply. The MoW has developed templates such as Prequalification (PQ) for contractors; Expression of Interest (EOI) for consultants and Request for Proposal (RFP) to which all MoW departments must comply. All projects must meet the requirements of this process in order for the tender to proceed. It requires the approval of the MoF and the Tender Board for the process to be executed and the tender awarded. The award of a contract provides the authorization for moving the project to the Construction / Implementation Phase.

This phase concludes with the Project Steering Committee (PSC) reviewing and approving the procurement/implementation plan, contract, contract funding and resources for the project to proceed to the Construction / Implementation Phase through a Gate Review.

1.7 Implementation Phase:

The Construction/Implementation Phase provides an outline of the activities to be completed for the successful execution of a construction project. The key activities are monitoring, control and reporting on all aspects of the project performance. These include the management of change requests, cost, schedule, quality, risks, issues, and contract administration. It also includes the preparation of operation and maintenance manuals to support the transition and the ongoing maintenance of the deliverable beyond the project close-out.

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This phase may also require testing, which includes a thorough and systematic testing of the product to assure the client or system owner that the project meets the required standards.

Controlled introduction of project deliverables would typically begin in this phase, and would be completed in the Closeout Phase. It is to be noted that this phase should also include the creation of a continuous improvement system to support the business process.

The Construction /Implementation Phase concludes with the completion of the project deliverables; issuance of Practical Completion Certificate and User's formal acceptance of the project deliverables and their transition to the Client before proceeding to the Close-out Phase. The Project Steering Committee (PSC) must review and accept the project deliverables for the project to proceed to the Closeout Phase through a Gate Review.

1.8 Closeout Phase:

The Close-out Phase key activities are the completion of any outstanding items. These activities include but are not limited to final inspection, finalising training and coaching, O & M Manuals, as-built drawings and the issuance of Final Certificate. It includes the contract close-out activities, the formal documentation of lessons learnt, releasing project resources and the archiving of project information. It must also include transfer of completed asset to the responsible Service & Maintenance Unit.

1.9 Gates

The gates are decision points where designated project leaders (project steering committee, sponsor, or other MoW executive committee) decide whether the project proceeds, is cancelled / deferred or requires rework. Two key questions are addressed:

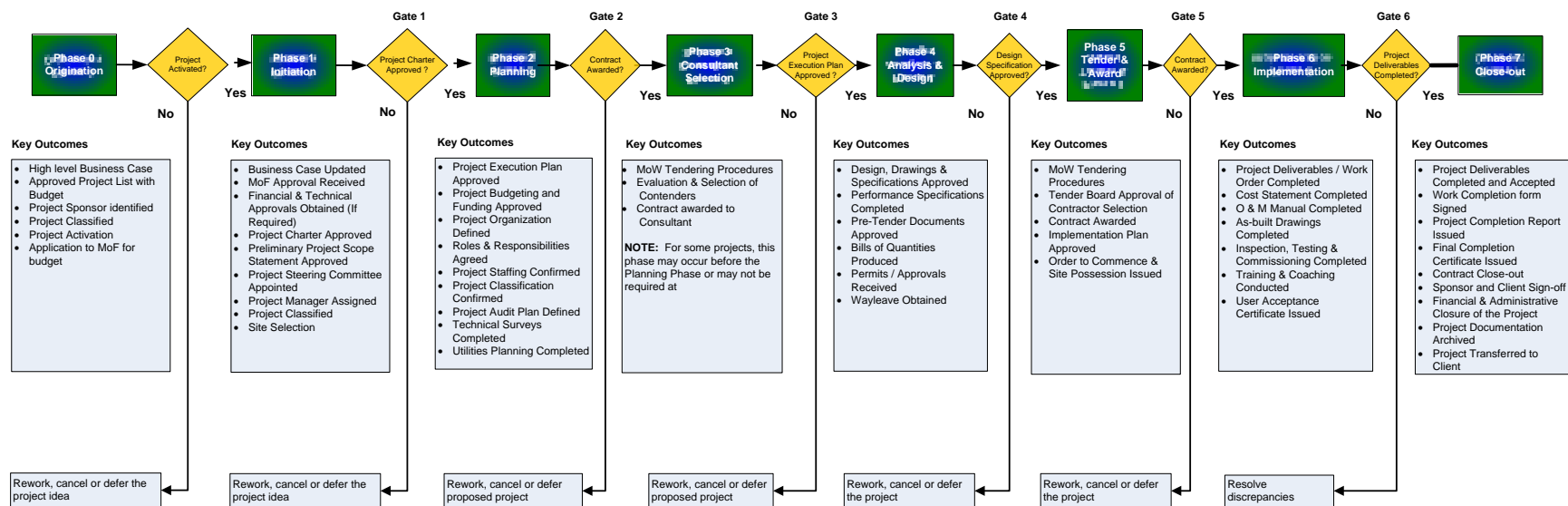
- 1) is the project planned sufficiently enough to proceed to the end of the next phase with a high probability of success? and
- 2) is the project still aligned with the business case goals and on track to their achievement?

Each gate allows for verification of a sound action plan for the next and remaining phases; permits the management team to determine whether the project should proceed to the next phase and guides the project team to the actions required should there be a 'GO' or 'NO GO' decision. The decision at each gate is documented and filed.

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Appendix A - MoW Construction Life Cycle and Gate Process Schematic

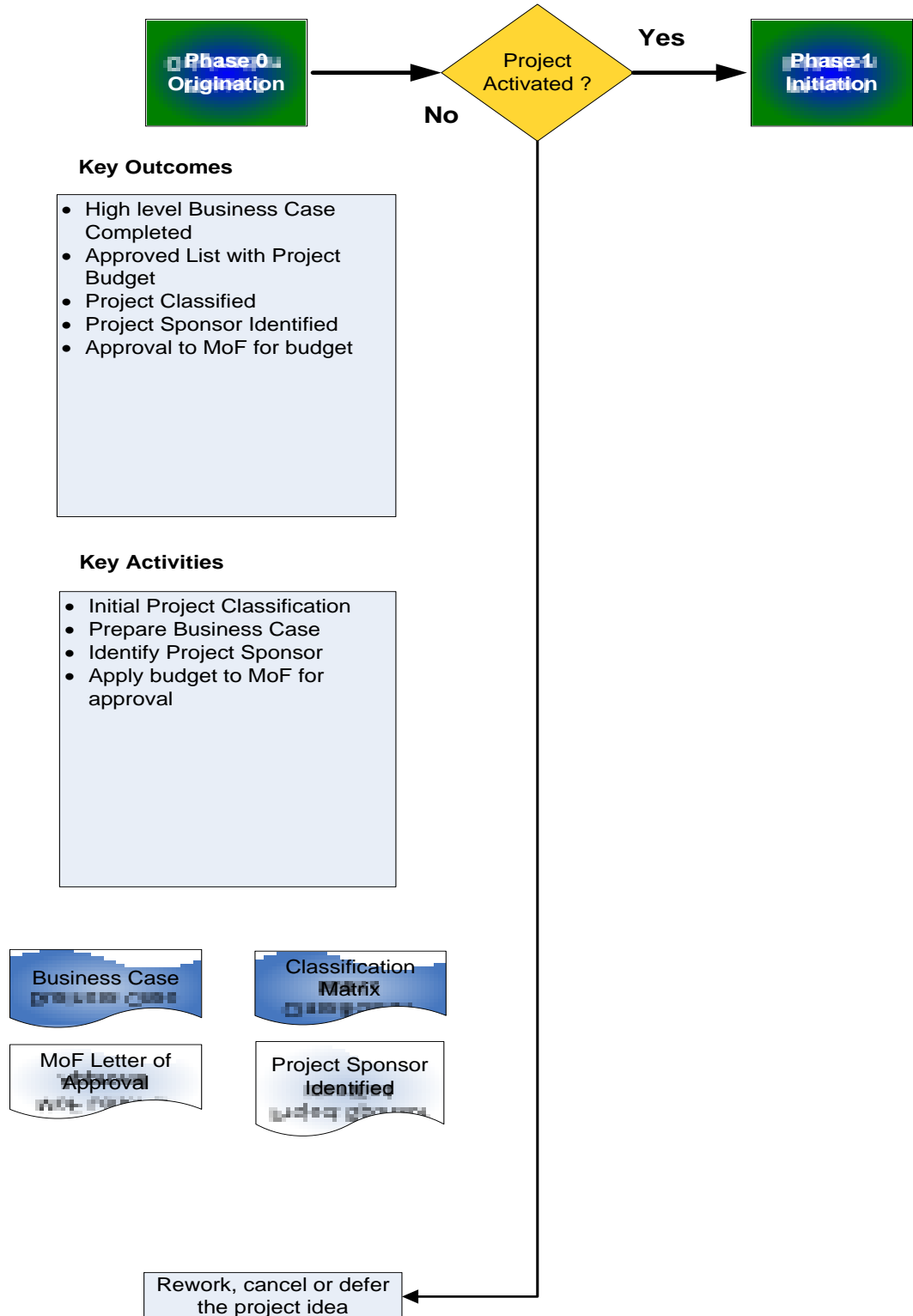
MoW Construction Project Life Cycle and Gating



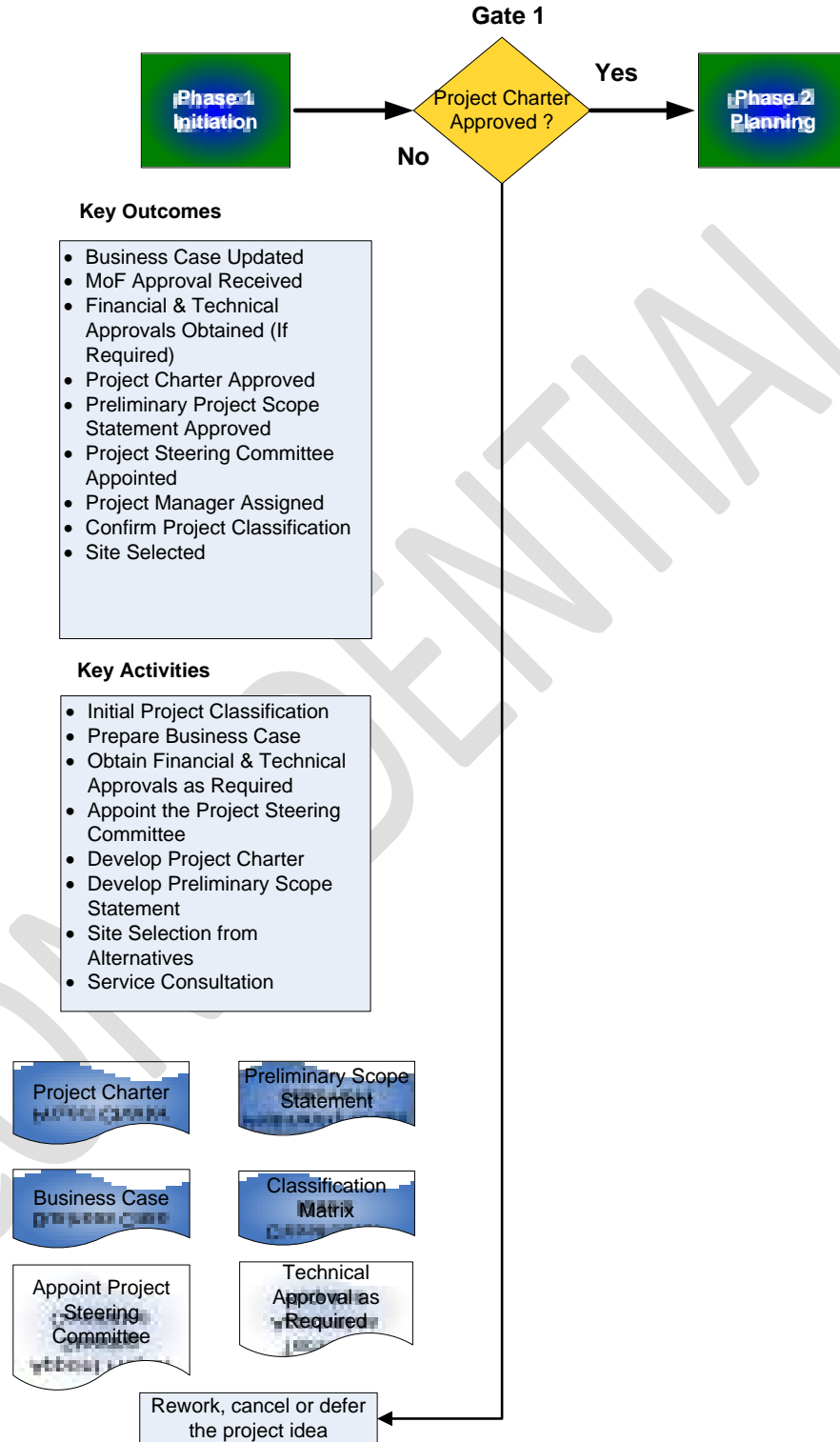
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Appendix B - MoW Construction Life Cycle Phases

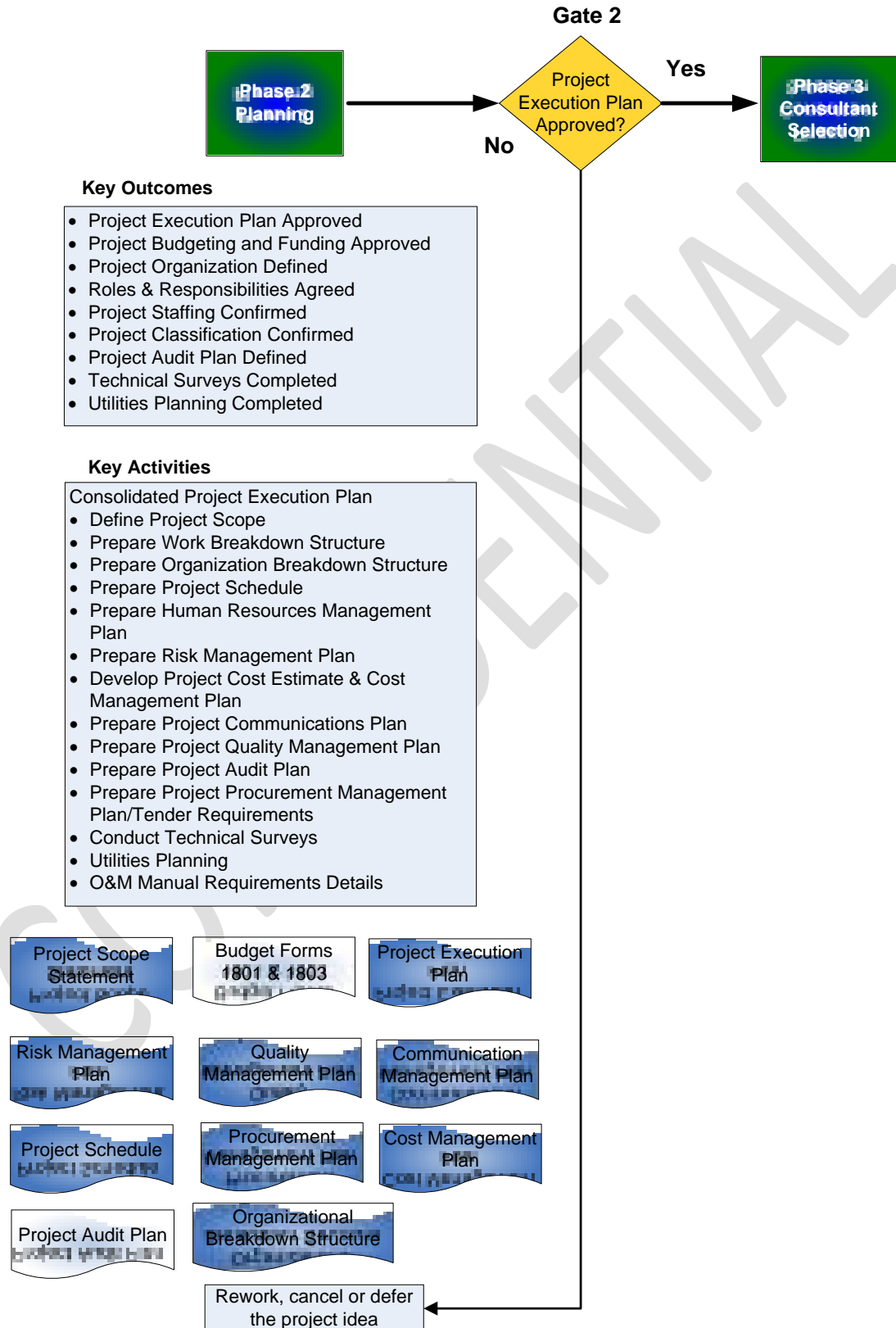
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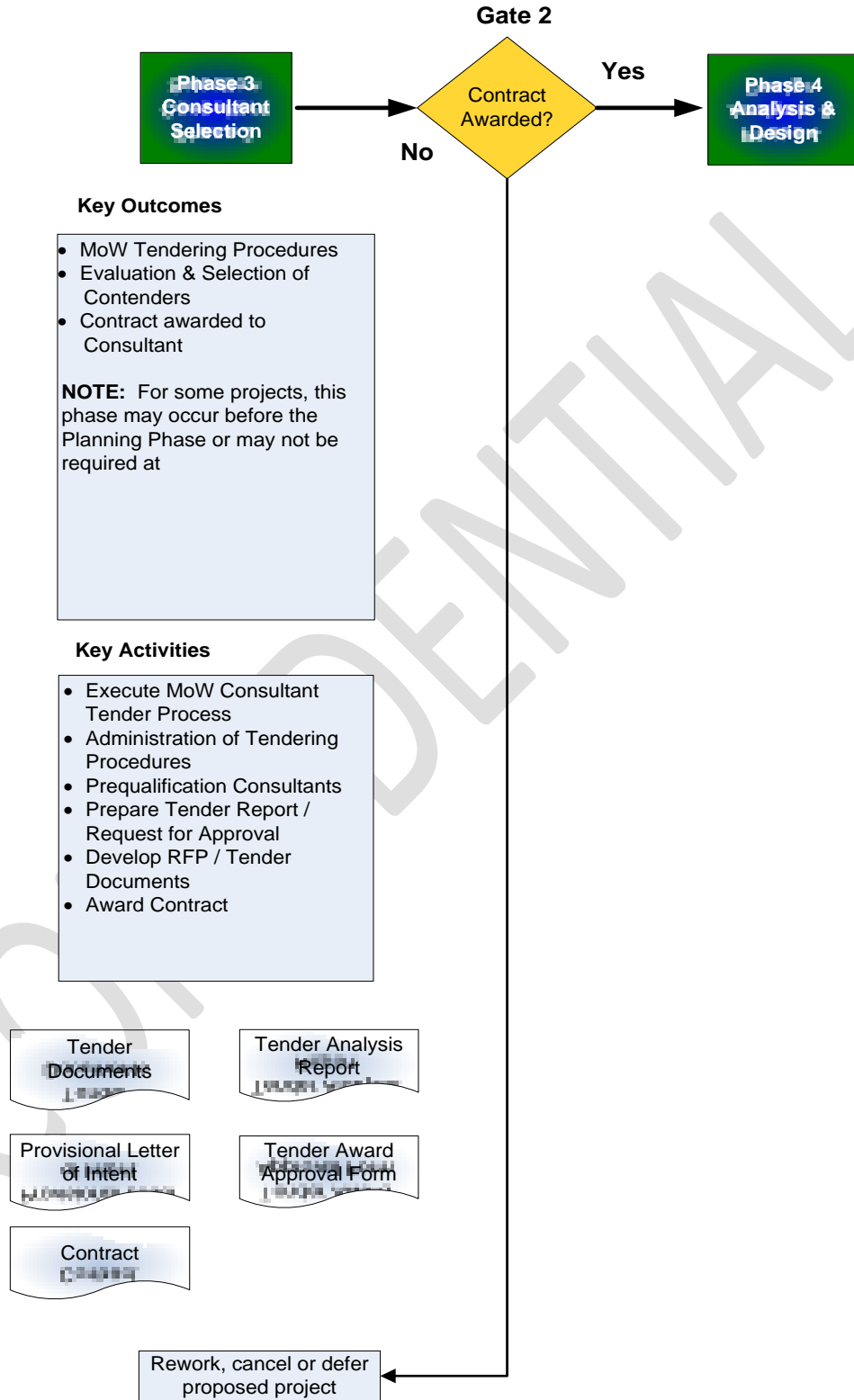
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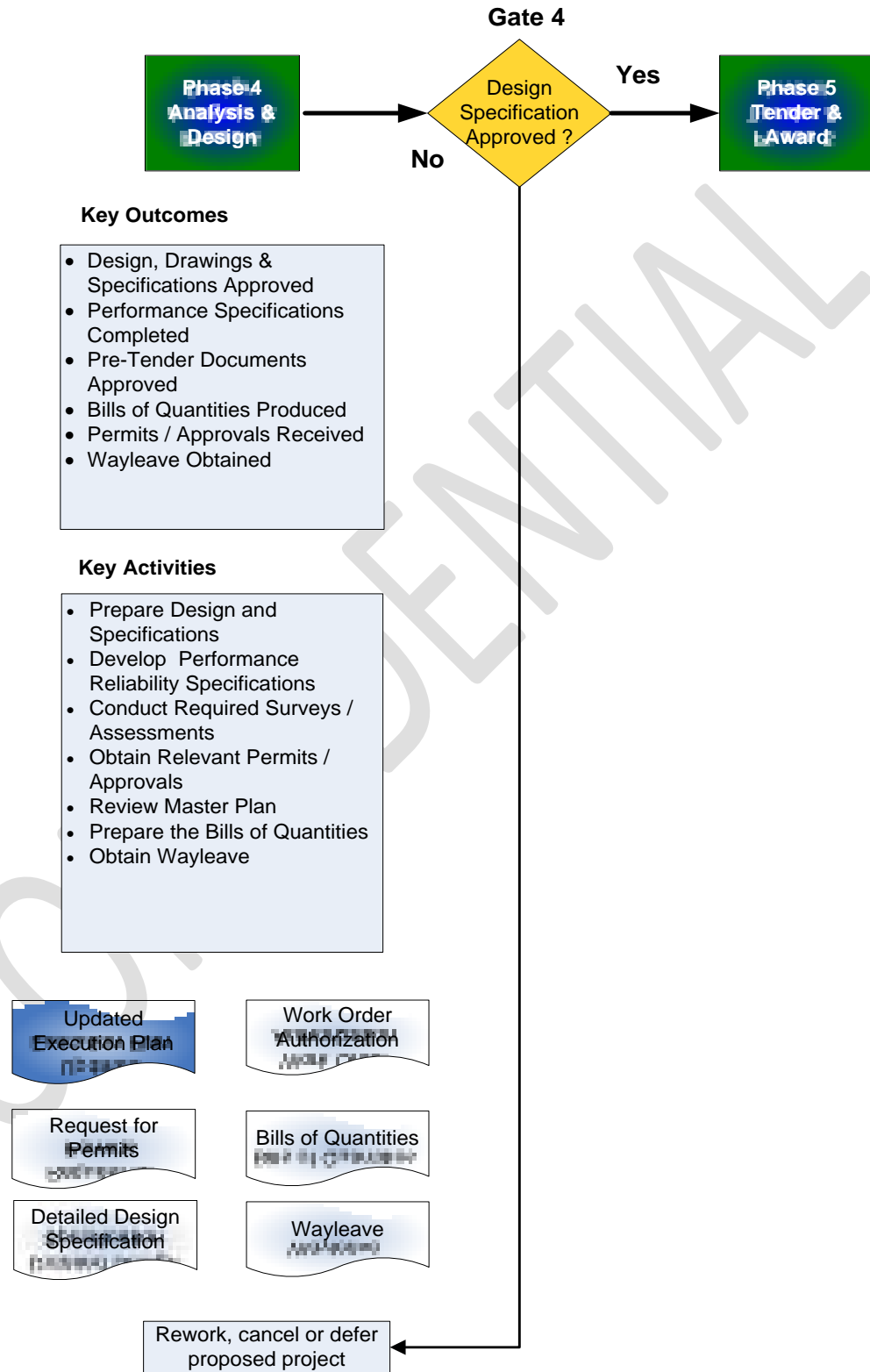
MoW Construction Project Life Cycle and Gating Phase 2



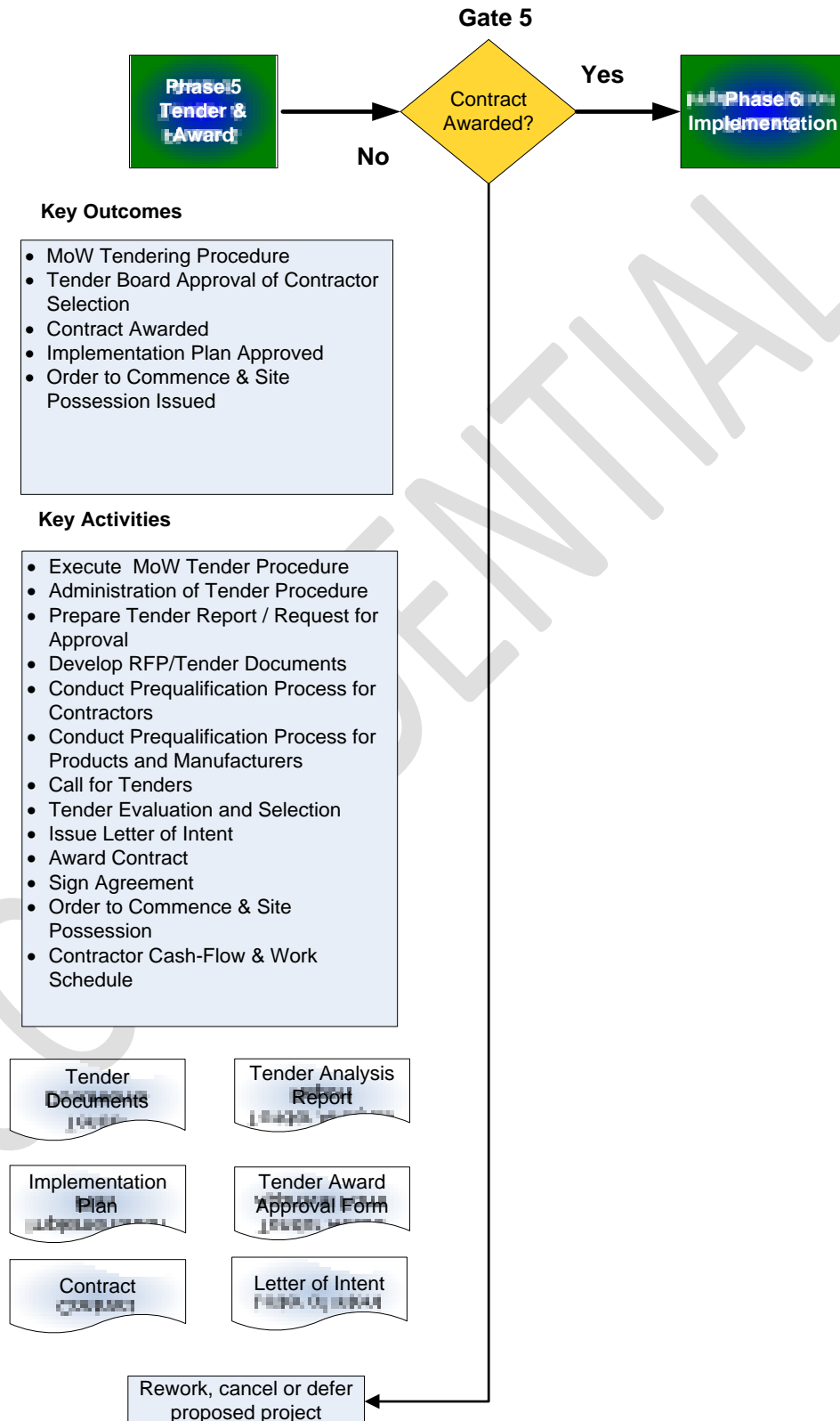
MoW Construction Project Life Cycle and Gating Phase 3



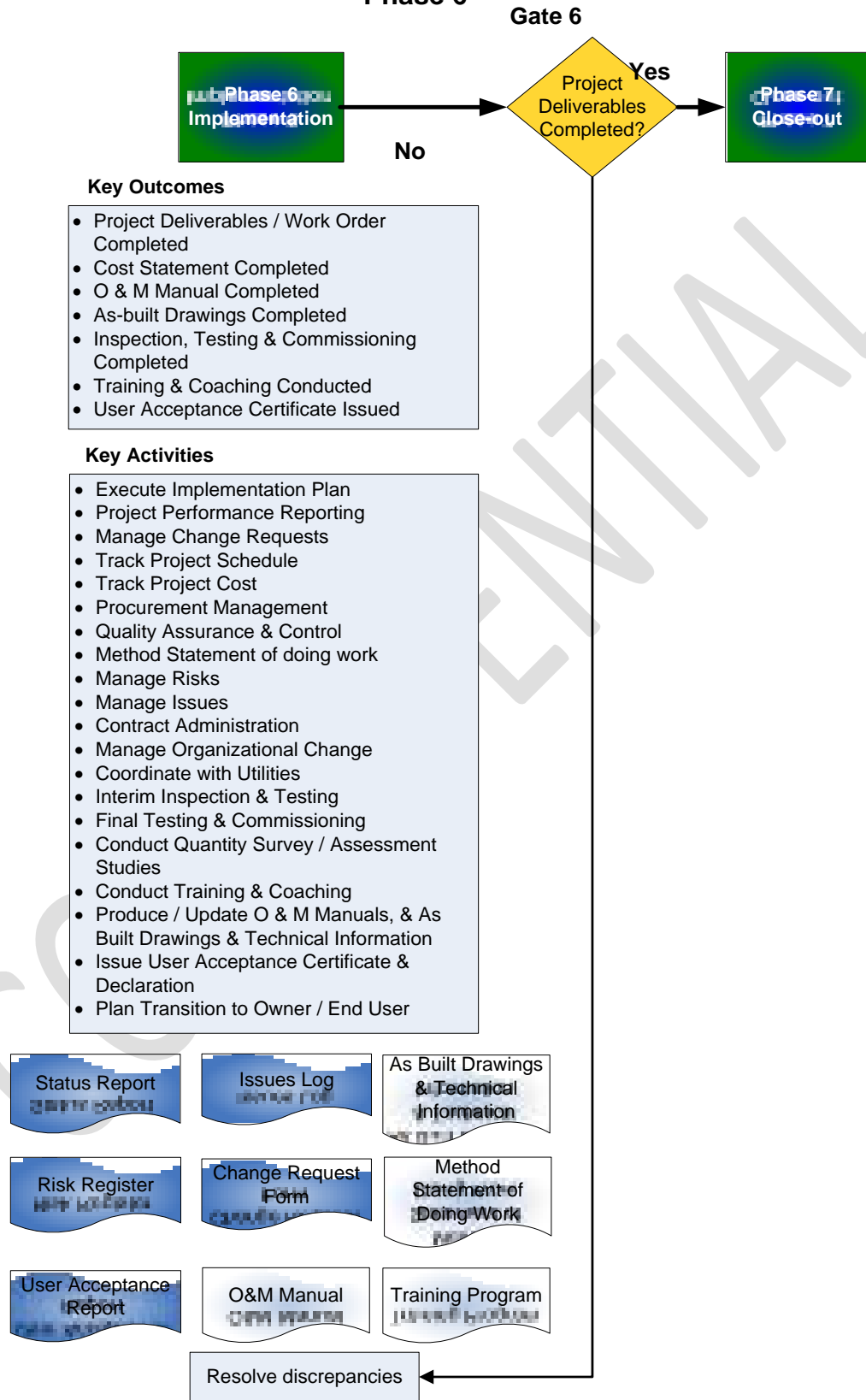
MoW Construction Project Life Cycle and Gating Phase 4



MoW Construction Project Life Cycle and Gating Phase 5



MoW Construction Project Life Cycle and Gating Phase 6



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MoW Construction Project Life Cycle and Gating Phase 7



Key Outcomes

- Project Deliverables Completed and Accepted
- Work Completion form Signed
- Project Completion Report Issued
- Final Completion Certificate Issued
- Sponsor and Client Sign-off
- Financial & Administrative Closure of the Project
- Contract Close-out
- Project Documentation Archived
- Project Transferred to Client

Key Activities

- Complete Project Evaluation Report
- Handover O&M Manuals, & As-built Drawings & technical information
- Conduct Final Inspection
- Issue Joint Inspection Certificate
- Release Final Payment
- Handover to Client
- Complete Snags and Outstanding Items List
- Finalize Training & Coaching
- Issue Project Completion Report
- Contract Close-out
- Commit to Defects Liability Period
- Complete Project Closeout Checklist
- Conduct Post Implementation Review
- Document Project Lessons Learnt
- Release Resources
- Settle Contractor Claims

