PROJECT MANAGEMENT

COLLEGE OF PETROLEUM AND MINING ENGINEERING

Dr. Ibrahim Adil Ibrahim Al-Hafidh

Mining Engineering Department

College of Petroleum and Mining Engineering

University of Mosul

Email: iibrahim@uomosul.edu.iq

LECTURE 1

Introduction

- Definition of a Project and its objective.
- What Is Project Management?.
- Purpose of Project Management.
- Project management activities.
- The Successful Project Manager.
- Measurement of a Project's Success.
- Project stages timeline.

Project Management
Dr.Ibrahim Al-Hafidh
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Definition of a Project

A project is a time-limited, goal-directed undertaking that requires a combination of human, mechanical, technical, and financial resources brought together in a temporary organization to achieve a specified purpose.

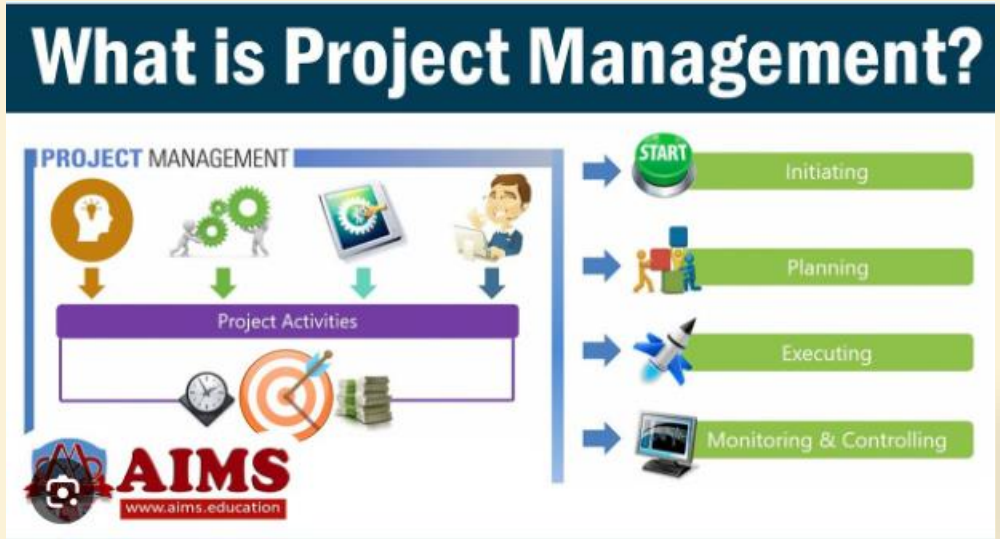
A project has a single set of objectives that takes the status quo and changes it into something better. When these goals are reached, the project is complete. The ultimate goal is to bring economic benefit to the corporation, that is, to reduce cost, expand production, add revenue, and/or extend property life.

Mining projects are mostly unique and fall outside of the normal course of business routine or operational services. To successfully achieve project completion, a series of nonrecurring but connected events have to be properly managed within a finite and well-defined life span. In other words, to create a successful outcome for a project, a definite path with a defined strategy has to be organized within a formal framework.

For most mining corporations, this formal framework means a development program under an assigned leader, backed by an approved **Authorization for Expenditure (AFE)**, and accompanied by supporting documents, a feasibility study, and a **Project Execution Plan (PEP)**. The defined life span has an identifiable start point, a fixed boundary, and an equally identifiable end point.

What Is Project Management?

Project management is the process by which a team of people successfully guide a project using the elements of planning, analysing, directing, monitoring, problem solving, and communicating. They take an idea from the opportunity stage through development to the achievement of specific, established corporate objectives within set cost, schedule, and quality constraints. Figure 1 illustrates, in a flowchart format, how these various project management activities all tie together.



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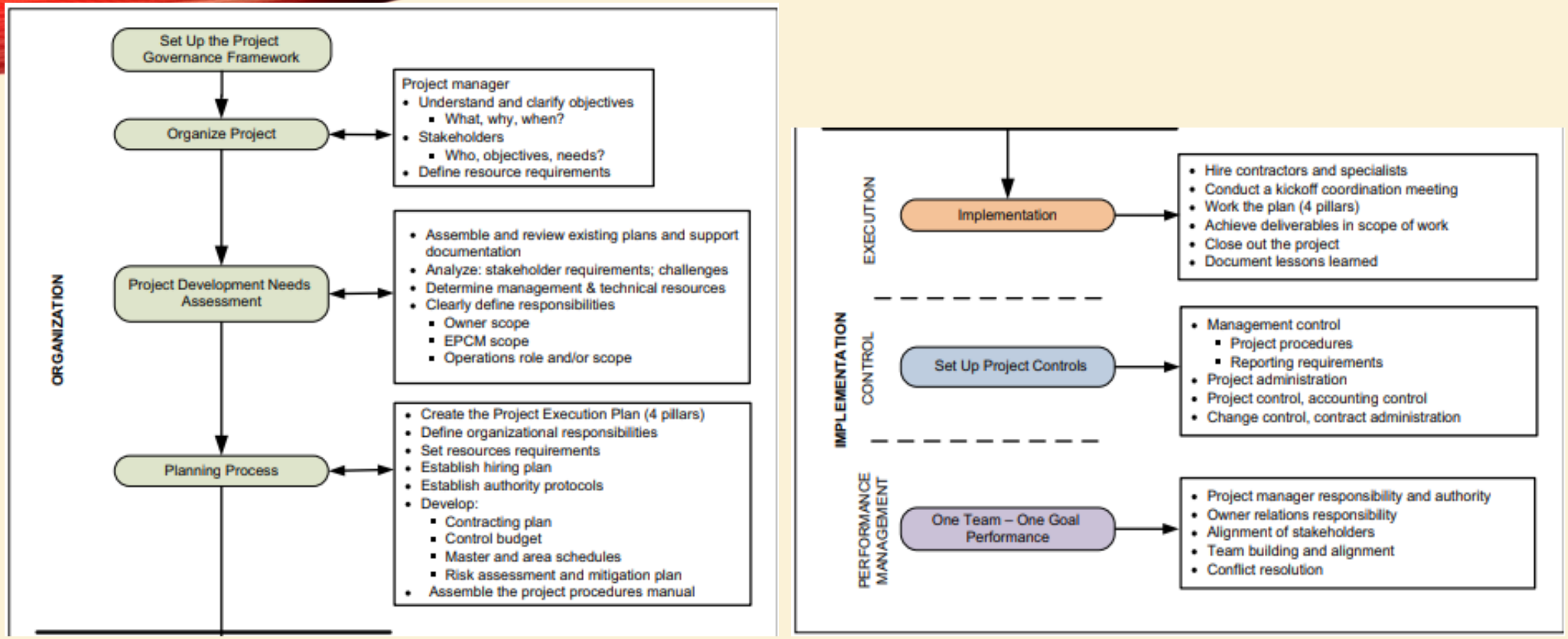


Figure 1: Project Management activities

Purpose of Project Management

Project management is not a complex process. There are four basic steps to a successful project outcome:

1. Develop a definitive project scope and a project-specific execution plan.
2. Use qualified management personnel.
3. Create the project control mechanisms up-front (documents, tools, and procedures).
4. Control engineering, construction, and start-up activities during project execution.

The more emphasis placed on the first three steps, the easier it is to manage the last step.

Figure 2 illustrates management's greater ability to meaningfully influence the outcome of a project during front-end activities.

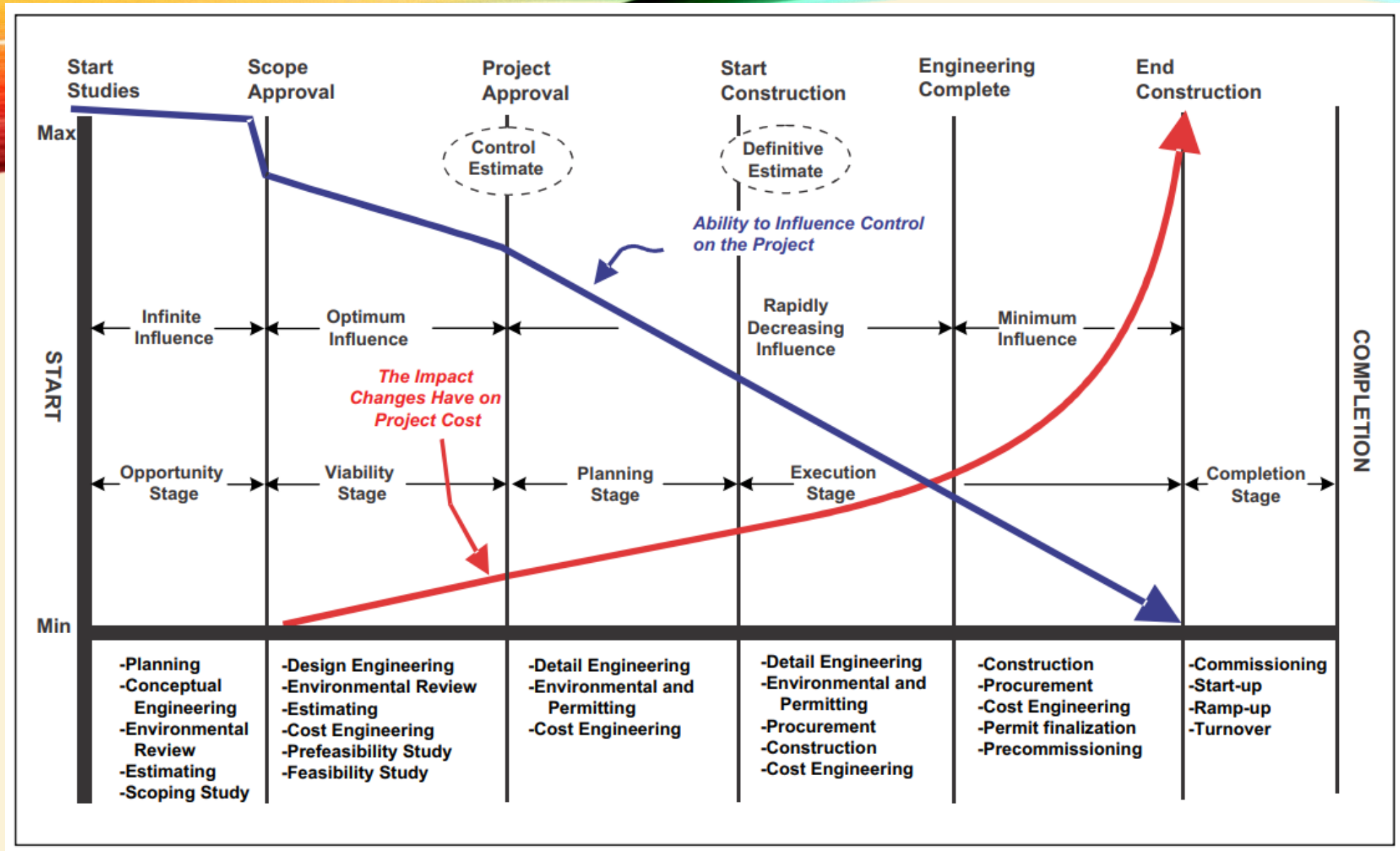


Figure 2: Profile of Project Management control influence

The Successful Project Manager

It would be nice to be able to insert a list of ingredients that make up the perfect project manager for a mining project; but reality is that no such recipe exists. Examination of the makeup and resumes of the more successful mining project leaders does, however, reveal some common characteristics:

- Experience, experience. This is not their first "rodeo." The successful, effective project manager will have served in the same role on numerous, similar projects.
- The best project managers have taken their projects through the complete project journey, from scoping study, data gathering, feasibility, board approval, hiring of staff and contractors, residence in the engineering office, building the plant in the field, through to commissioning and operations start-up.

- The project manager understands the balance and trade-offs that engineers have to make in order to design an operable and maintainable plant.
- The project manager has dealt with the logistics issues that accompany materials and equipment deliveries in harsh, remote locations.
- The successful project manager has lived in the construction camp world, from mobilization day to demobilization, and understands the rigors.
- The project manager is a leader who can motivate all members of the project team.
- The project manager can create and maintain an enabling work environment.

Project management is not a technical science; it is a behavioural science. The project manager requires business acumen and people skills to accomplish the project goals. Sophisticated programs for cost estimation, scheduling, procurement tracking, status analysis, and communications all facilitate the execution of project management, but they do not supplant it—they are no more than the tools of the project manager's trade.

In summary, successful project managers are motivational leaders with significant relevant project experience who can immediately take on the mantle of project champion.

They are the ones willing to "eat, breathe, and sleep" the project. They commit to completing the job.

Measurement o f a project's success

The following standards have become established as measures of mining project success:

Feasibility Study success

The project feasibility study is considered to be a success when it has been deemed “bankable” by external financial institutions.

Project Success

A project can be called successful if it has met the following criteria:

- The project has been completed within the approved capital budget.
- Handover to Operations is on or ahead of schedule.

- There are no surprises or unanticipated issues for the project team during project execution.
- Sustained design annual production and quality are achieved at the constructed facility.
- Operational unit cash costs are as predicted in the feasibility study.
- Construction has been conducted safely, with no lost time accidents (LTAs) and zero citations.
- Compliance with sound international environmental and sustainability standards has been met.
- Social acceptance has been achieved from stakeholders and the neighbourhood communities.
- Admiration and pride are invoked throughout the mining community.

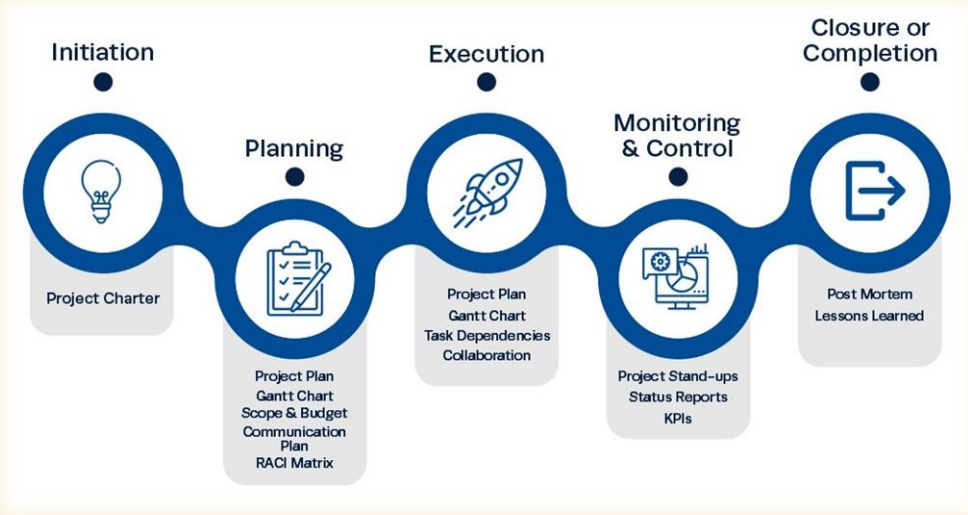
These accomplishments can only be effectively measured at project completion. Consequently, additional procedures and gauges are necessary to assess the project during its life stages and to determine the real likelihood of the goals being met, that is, whether the project is truly on a path to a successful conclusion.

Thus, a formal evaluation process measuring project performance, and by extension project success, is required throughout the project life and after the project's completion.

Project Stages Timeline

The five major project stages is broken out as a section:

1. Opportunity.
2. Viability.
3. Planning.
4. Execution.
5. Closure or Completion.



All projects are generally executed in this sequence from the idea stage through closeout. Each major stage is distinct, and each stage serves a different purpose.

Project Stages Timeline

Before the planning and execution stages can be carried out, the early opportunity development and proof of viability stages must be done. These two stages are each followed by a management review (or a “stage gate” review) in which the project is vetted and has to be confirmed as meeting the corporate goals and financial hurdles required by the mining company executive body before it can be formally approved to enter the next stage.

Each major stage in the project development process further comprises a unique set of sub stages or activity phases, each with its own deliverables. In recognition of these unique project activity phases, the chapters are laid out to each represent one of the phases (or steps). Figure 3 depicts these sequential project stages and phases (i.e., the chapters) in Gantt chart form.

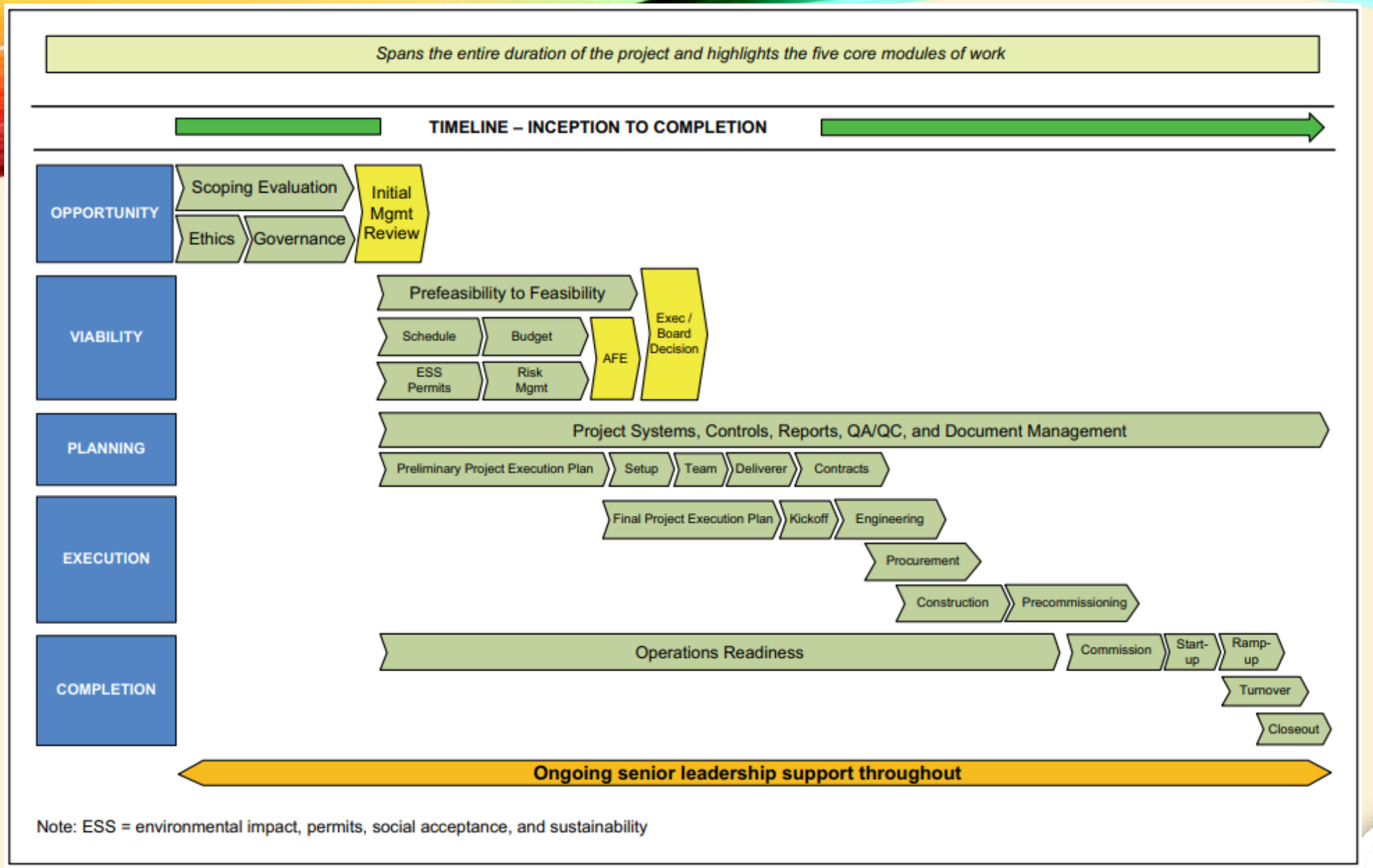


Figure 3: Project stages timeline