

# Project Time Management

Prepared by Dr. Amira Elfekky

**PMG 212**

**Lecture 6**



# Agenda

- Purpose of a Performance Measurement Baseline
- Components of the Performance Baseline
- Components and Assembly of the Performance Baseline
- Scope
- Contract Terms and Conditions (CTC)
- Project Execution Plan (PEP)
- Schedule
- Work Breakdown Structure
- Work Breakdown Structure Benefits
- Organizational Breakdown Structure
- WBS/OBS Diagram
- Ownership
- The Concept of Rolling Wave Planning

## Agenda

- **Purpose of a Performance Measurement Baseline**
- Components of the Performance Baseline
- Components and Assembly of the Performance Baseline
- Scope
- Contract Terms and Conditions (CTC)
- Project Execution Plan (PEP)
- Schedule
- Work Breakdown Structure
- Work Breakdown Structure Benefits
- Organizational Breakdown Structure
- WBS/OBS Diagram
- Ownership
- The Concept of Rolling Wave Planning

## **Purpose of a Performance Measurement Baseline**

- Roadmap for project execution
- Integration of project components
- Basis for change management
- Project communication
- Basis for project status and metrics

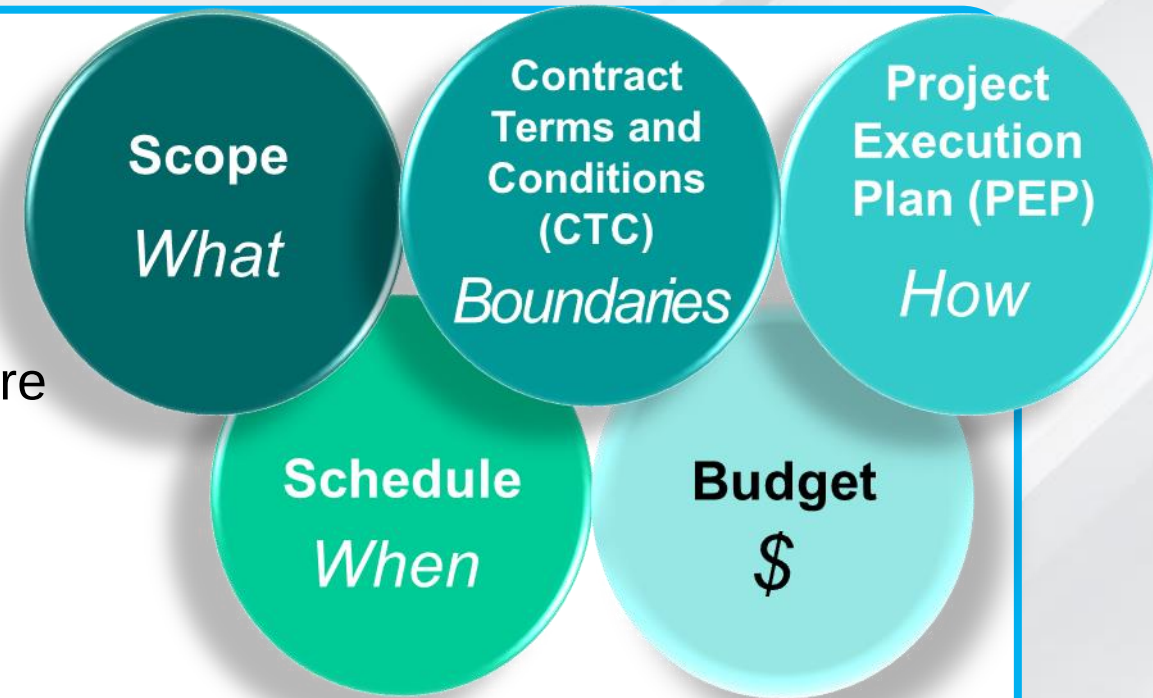
# Agenda

- Purpose of a Performance Measurement Baseline
- **Components of the Performance Baseline**
- Components and Assembly of the Performance Baseline
- Scope
- Contract Terms and Conditions (CTC)
- Project Execution Plan (PEP)
- Schedule
- Work Breakdown Structure
- Work Breakdown Structure Benefits
- Organizational Breakdown Structure
- WBS/OBS Diagram
- Ownership
- The Concept of Rolling Wave Planning

## Chapter 06

# Components of the Performance Baseline

- All five components interact and must be combined in baselining.
- Project team members must be made aware of the components within their area of responsibility.

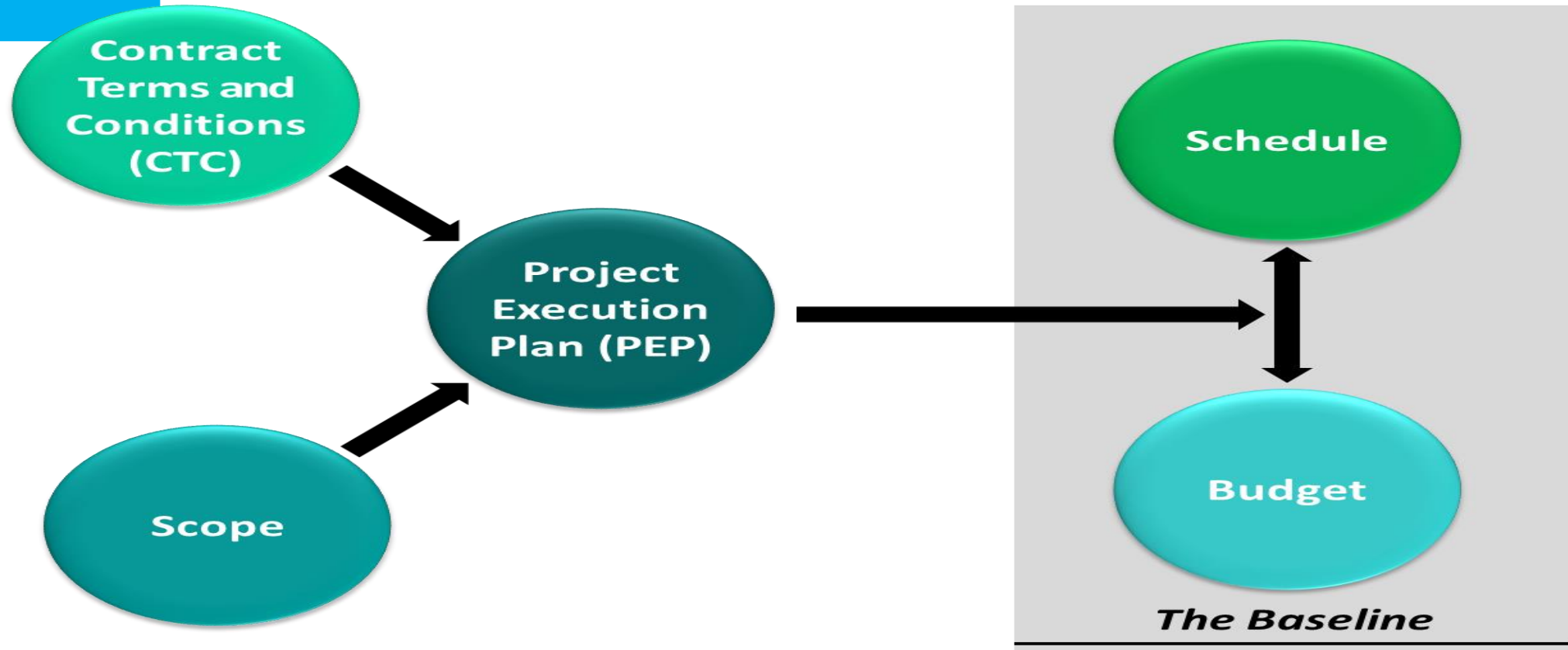


## Agenda

- Purpose of a Performance Measurement Baseline
- Components of the Performance Baseline
- **Components and Assembly of the Performance Baseline**
- Scope
- Contract Terms and Conditions (CTC)
- Project Execution Plan (PEP)
- Schedule
- Work Breakdown Structure
- Work Breakdown Structure Benefits
- Organizational Breakdown Structure
- WBS/OBS Diagram
- Ownership
- The Concept of Rolling Wave Planning

Chapter  
**06**

# Components and Assembly of the Performance Baseline

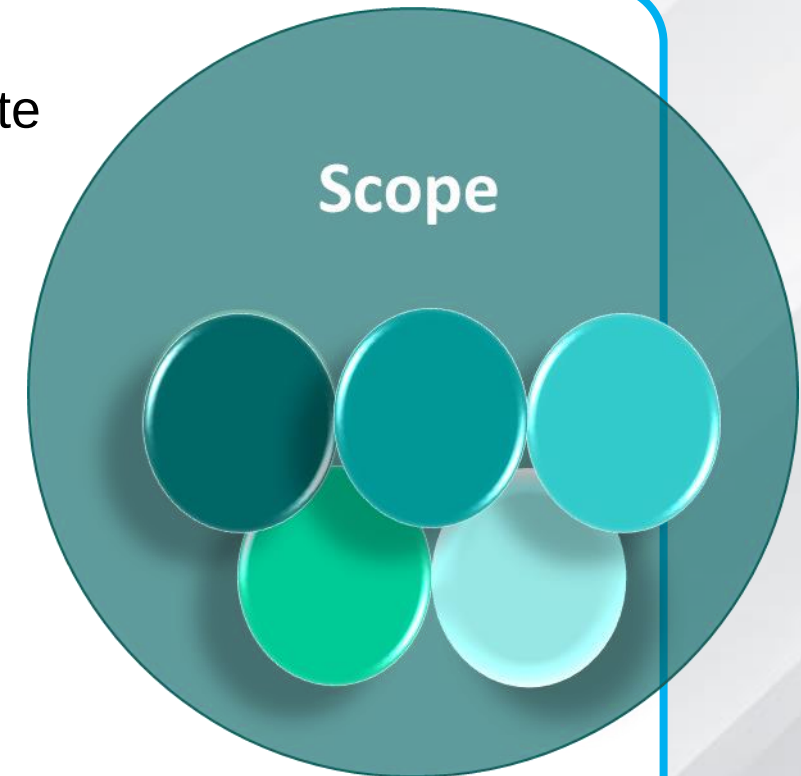


# Agenda

- Purpose of a Performance Measurement Baseline
- Components of the Performance Baseline
- Components and Assembly of the Performance Baseline
- **Scope**
- Contract Terms and Conditions (CTC)
- Project Execution Plan (PEP)
- Schedule
- Work Breakdown Structure
- Work Breakdown Structure Benefits
- Organizational Breakdown Structure
- WBS/OBS Diagram
- Ownership
- The Concept of Rolling Wave Planning

## Scope

- ❑ Defines the work the contractor or supplier is required to complete
  - Statement of Work
  - Scope determines the cost and schedule
  - Creation of Work breakdown structure



## Scope – Case study -1

### 2 SCOPE OF WORK

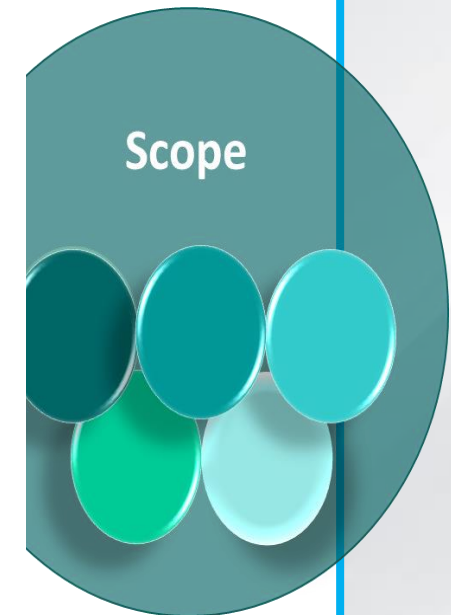
#### Description

The CONTRACTOR's scope of works is the erection of the outstanding structural steel members within the Utilities plant Project (KUT)

These members vary in size, location and elevation and are a mixture of cable tray/HVAC ducting supports and structural steel members. Appendix 1 shows a breakdown of the steelwork by geographical area within the plant.

The steelworks can be divided into two categories :-

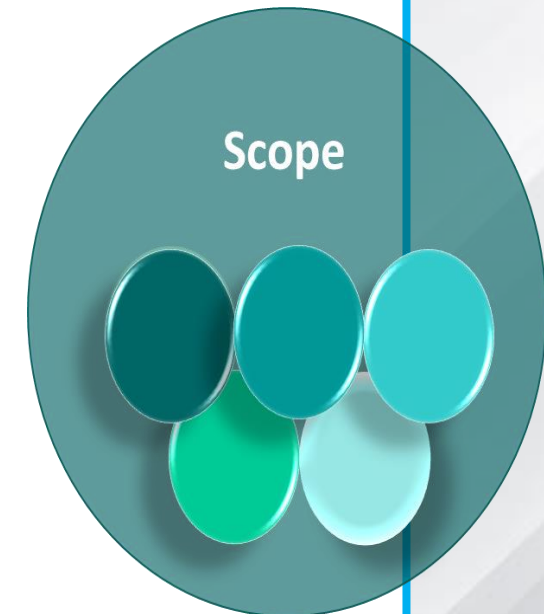
- New steelwork that is presently under manufacture in Turkey and which is due for delivery to site during July 2009
- Steelwork already available at site, but which is in varying stages of completion



**2 SCOPE OF WORK****Description**

- Line checking, punch clearing of all items categories including those items may require minor construction activities for the completion of piping circuit.
- Conduct any required types of testing such as Hydro, Pneumatic, Visual and or leak testing.
- Reinstatement of test packs post hydro testing including bolt tightening and tensioning.

| ACTIVITY                                   | ESTIMATED QUANTITY      |
|--------------------------------------------|-------------------------|
| Line Checking And Punch Clearing           | 720 Test Packs          |
| Testing (Hydro, Pneumatic, Visual Or Leak) | 720 Test Packs          |
| Reinstatement                              | 720 Test Packs          |
| <b>TOTAL</b>                               | <b>2,160 Test Packs</b> |



## Agenda

- Purpose of a Performance Measurement Baseline
- Components of the Performance Baseline
- Components and Assembly of the Performance Baseline
- Scope
- **Contract Terms and Conditions (CTC)**
- Project Execution Plan (PEP)
- Schedule
- Work Breakdown Structure
- Work Breakdown Structure Benefits
- Organizational Breakdown Structure
- WBS/OBS Diagram
- Ownership
- The Concept of Rolling Wave Planning

## Contract Terms and Conditions (CTC)

❑ Contract terms and conditions address:

- Rights and obligations
- Contract form and function
- Risk allocation
- Contract management process, including dispute resolution



Chapter  
**06****Contract Terms and Conditions (CTC)**

- ❑ Contract terms and conditions address:
  - Payment terms
  - Quality requirements
  - Acceptance and testing requirements
  - Reporting requirements



## Agenda

- Purpose of a Performance Measurement Baseline
- Components of the Performance Baseline
- Components and Assembly of the Performance Baseline
- Scope
- Contract Terms and Conditions (CTC)
- **Project Execution Plan (PEP)**
- Schedule
- Work Breakdown Structure
- Work Breakdown Structure Benefits
- Organizational Breakdown Structure
- WBS/OBS Diagram
- Ownership
- The Concept of Rolling Wave Planning

## Project Execution Plan (PEP)

- ❑ Defines the execution approach
  - Identifies how engineering will be carried out
  - Identifies how equipment and materials will be acquired
  - Identifies how construction will be completed



## Project Execution Plan (PEP)

- ❑ Defines the execution approach
  - Identifies what all functions (E, P, C, PC, Contracts, Startup, and others) will do in delivering the project and how they will do it
  - Describes how handoffs, interfaces, and integration between functions will work

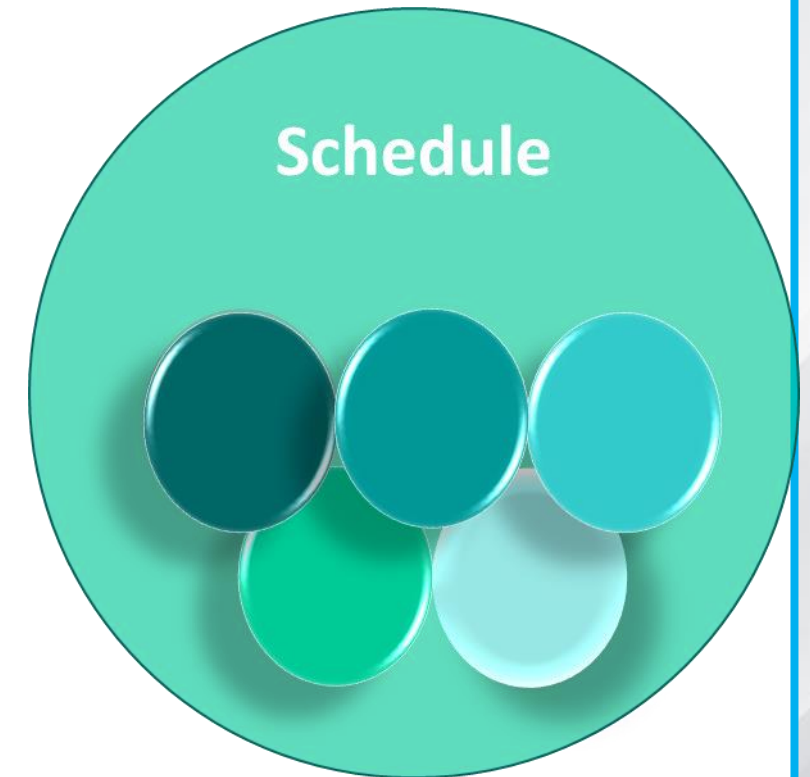


# Agenda

- Purpose of a Performance Measurement Baseline
- Components of the Performance Baseline
- Components and Assembly of the Performance Baseline
- Scope
- Contract Terms and Conditions (CTC)
- Project Execution Plan (PEP)
- **Schedule**
- Work Breakdown Structure
- Work Breakdown Structure Benefits
- Organizational Breakdown Structure
- WBS/OBS Diagram
- Ownership
- The Concept of Rolling Wave Planning

Chapter  
**06****Schedule**

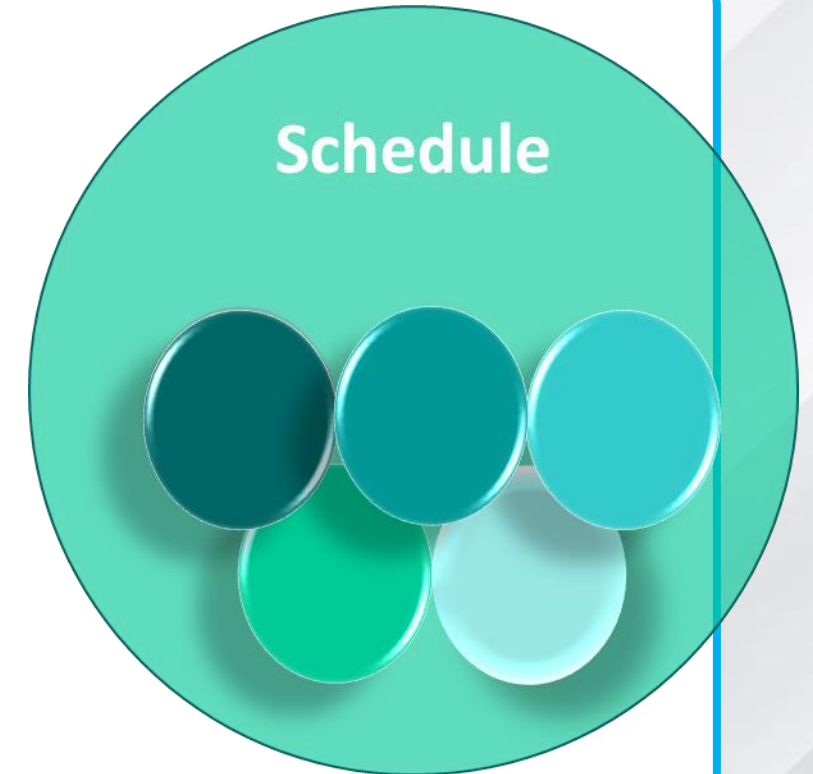
- ❑ Management Schedule (Level I) includes:
  - Major milestones
  - Long lead items
- ❑ Control Schedule (Level III)
  - Part of the contract
  - The CS is a package containing:
    - Major milestones
    - Engineering Work Packages (EWP)
    - Procurement and Long lead items



## Schedule

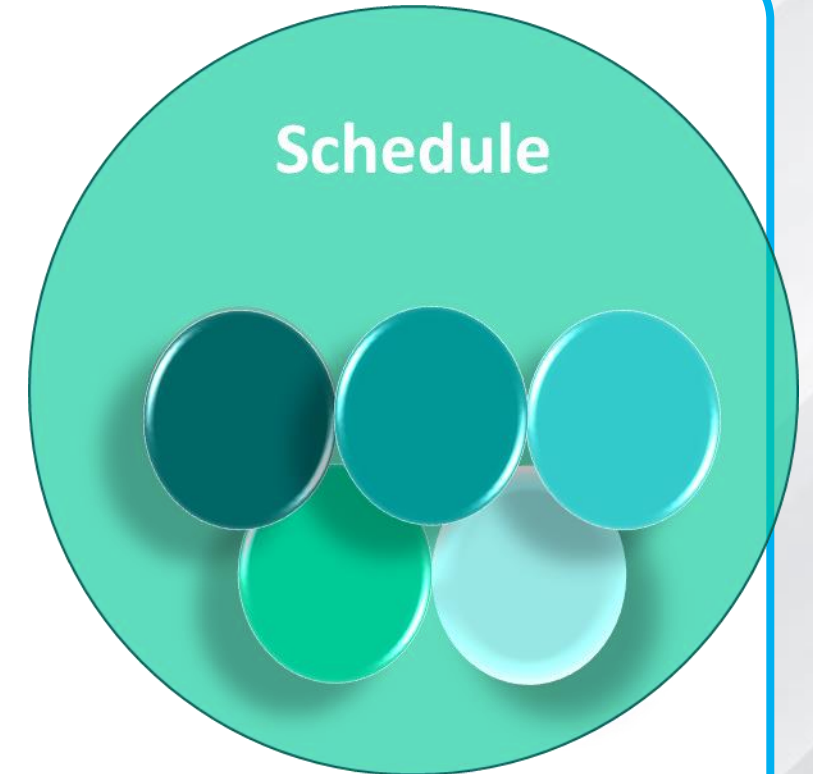
### ❑ Control Schedule (Level III)

- The CS is a package containing:
  - Construction Work Packages
  - Critical path activities
  - Resources loaded schedule
  - Progress curves
  - Bulk commodity curves (concrete, structural steel, piping, wire & cable, etc.)



## Schedule

- ❑ Always provide the Basis of Schedule (assumptions, exclusions, allowances, etc.).
- ❑ Level II Summary Schedules and Level IV Medium Term Schedules are used when needed.



# Agenda

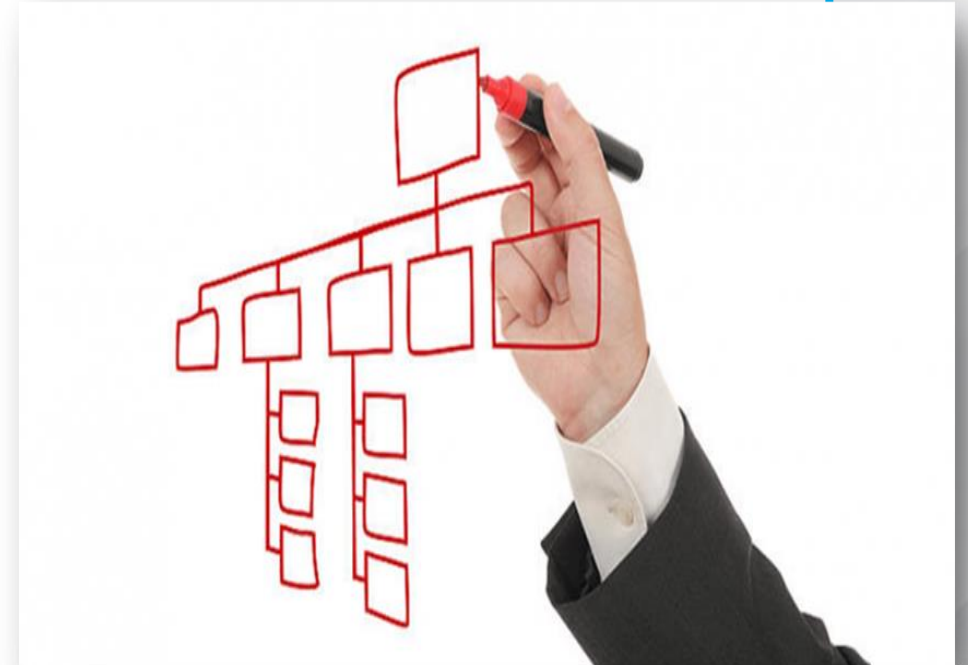
- Purpose of a Performance Measurement Baseline
- Components of the Performance Baseline
- Components and Assembly of the Performance Baseline
- Scope
- Contract Terms and Conditions (CTC)
- Project Execution Plan (PEP)
- Schedule
- **Work Breakdown Structure**
- Work Breakdown Structure Benefits
- Organizational Breakdown Structure
- WBS/OBS Diagram
- Ownership
- The Concept of Rolling Wave Planning

Chapter  
**06**

## Work Breakdown Structure

The Work Breakdown Structure (WBS) is a hierarchical code structure representing the entire work scope of a project. The WBS:

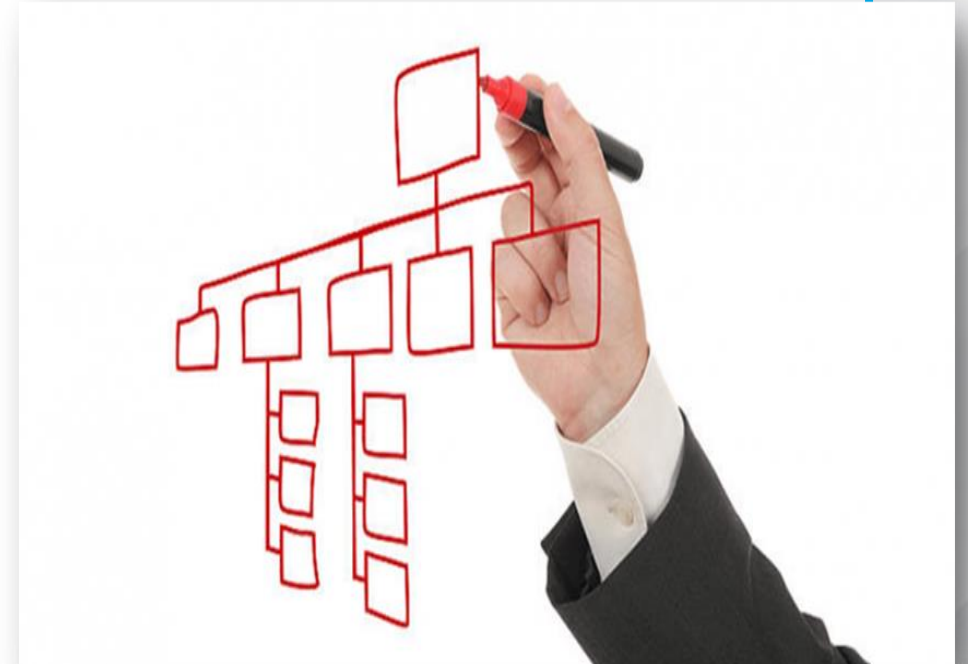
- Integrates project data from Engineering, Procurement, Construction, and Startup.



Chapter  
**06**

## Work Breakdown Structure

- Is used to separate project scope into manageable subsections, facilitate communication, and identify integration points for project plans.
- Provides a systematic approach to ensure key scope and activities are not omitted.



## Agenda

- Purpose of a Performance Measurement Baseline
- Components of the Performance Baseline
- Components and Assembly of the Performance Baseline
- Scope
- Contract Terms and Conditions (CTC)
- Project Execution Plan (PEP)
- Schedule
- Work Breakdown Structure
- **Work Breakdown Structure Benefits**
- Organizational Breakdown Structure
- WBS/OBS Diagram
- Ownership
- The Concept of Rolling Wave Planning

Chapter  
**06**

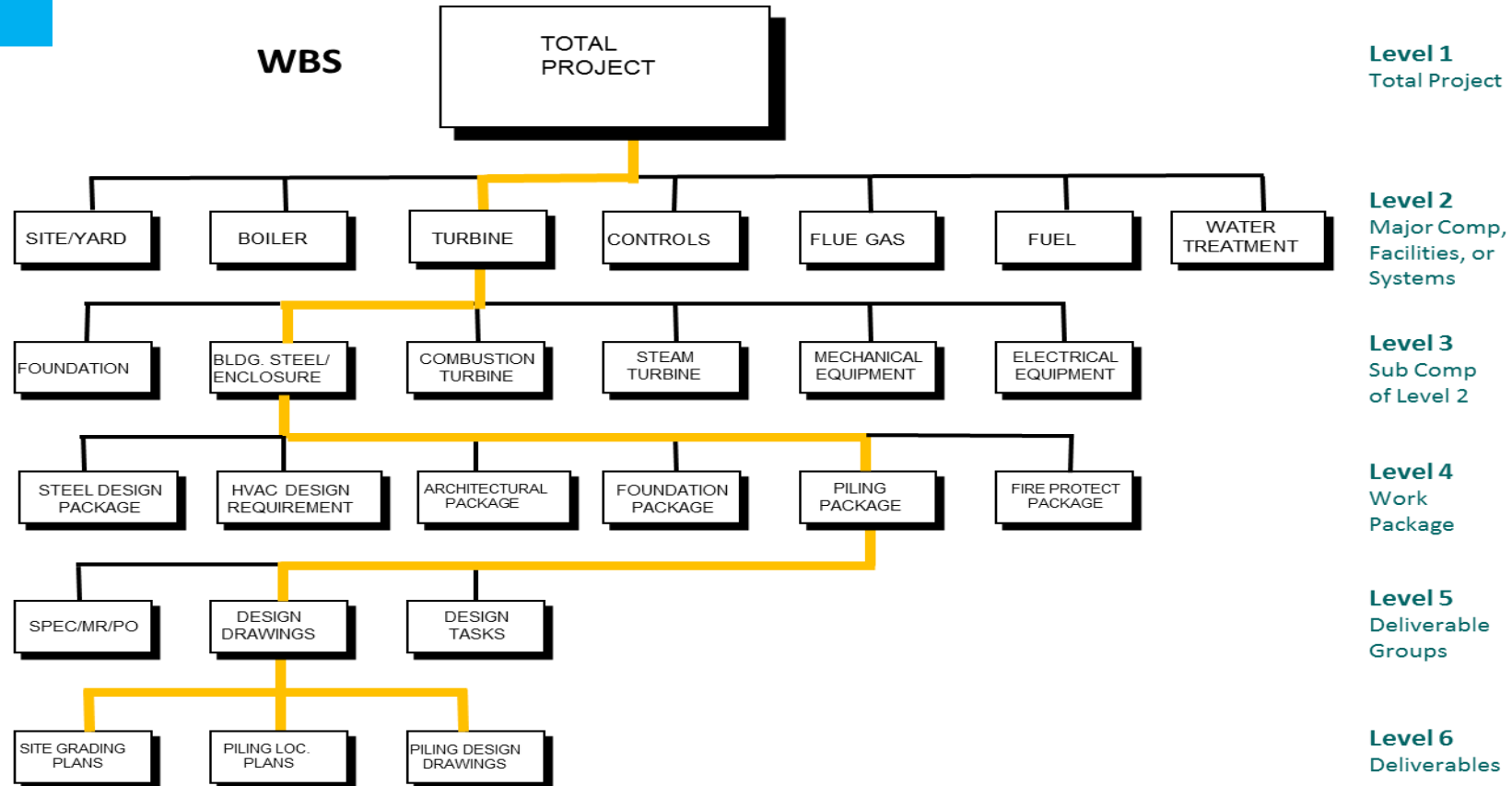
## Work Breakdown Structure Benefits

- Facilitates systematic planning
- Removes project complexity by allocating scope
- Provides a framework for:
  - Defining specific tasks
  - Linking activities and resources
  - Facilitating communication
  - Allowing integration of project plans



Chapter  
**06**

# Work Breakdown Structure Example



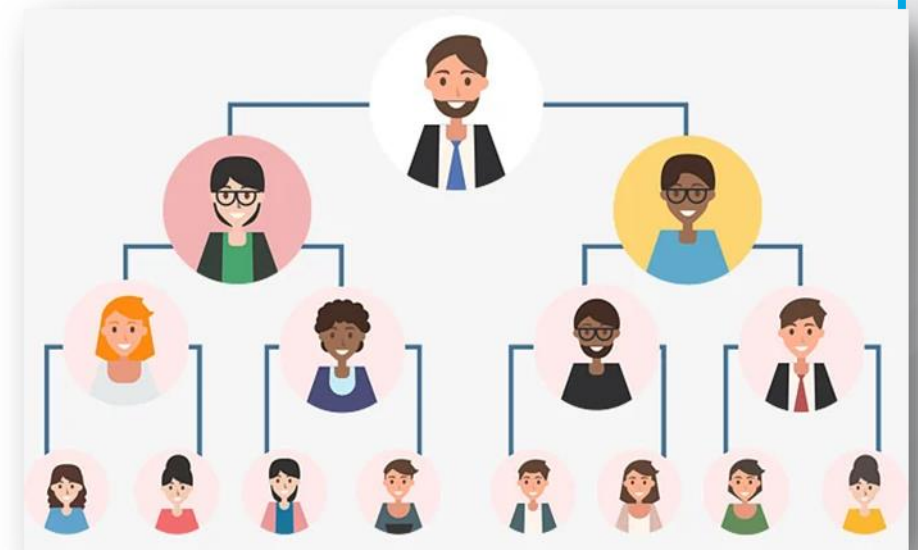
# Agenda

- Purpose of a Performance Measurement Baseline
- Components of the Performance Baseline
- Components and Assembly of the Performance Baseline
- Scope
- Contract Terms and Conditions (CTC)
- Project Execution Plan (PEP)
- Schedule
- Work Breakdown Structure
- Work Breakdown Structure Benefits
- **Organizational Breakdown Structure**
- WBS/OBS Diagram
- Ownership
- The Concept of Rolling Wave Planning

Chapter  
**06**

## Organizational Breakdown Structure

- Takes the WBS and merges with the organization and individuals assigned to the project
- Benefits:
  - Enables clear assignment of scope to team members
  - Facilitates ownership and accountability
  - Assures all project elements are accounted for



# Agenda

- Purpose of a Performance Measurement Baseline
- Components of the Performance Baseline
- Components and Assembly of the Performance Baseline
- Scope
- Contract Terms and Conditions (CTC)
- Project Execution Plan (PEP)
- Schedule
- Work Breakdown Structure
- Work Breakdown Structure Benefits
- Organizational Breakdown Structure
- **WBS/OBS Diagram**
- Ownership
- The Concept of Rolling Wave Planning

## WBS/OBS Diagram

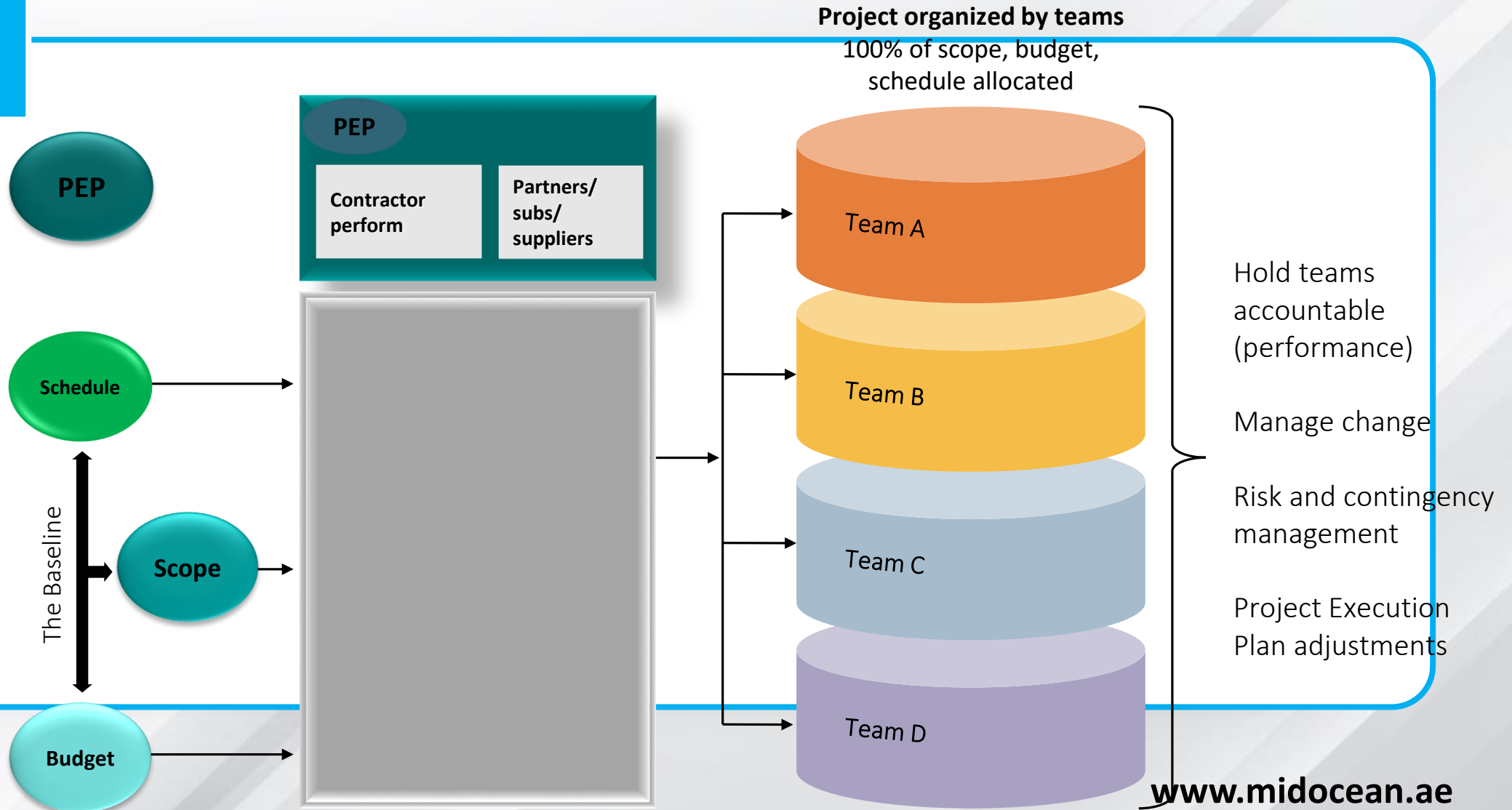


# Agenda

- Purpose of a Performance Measurement Baseline
- Components of the Performance Baseline
- Components and Assembly of the Performance Baseline
- Scope
- Contract Terms and Conditions (CTC)
- Project Execution Plan (PEP)
- Schedule
- Work Breakdown Structure
- Work Breakdown Structure Benefits
- Organizational Breakdown Structure
- WBS/OBS Diagram
- **Ownership**
- The Concept of Rolling Wave Planning

Chapter  
**06**

# Ownership



Chapter  
**06**

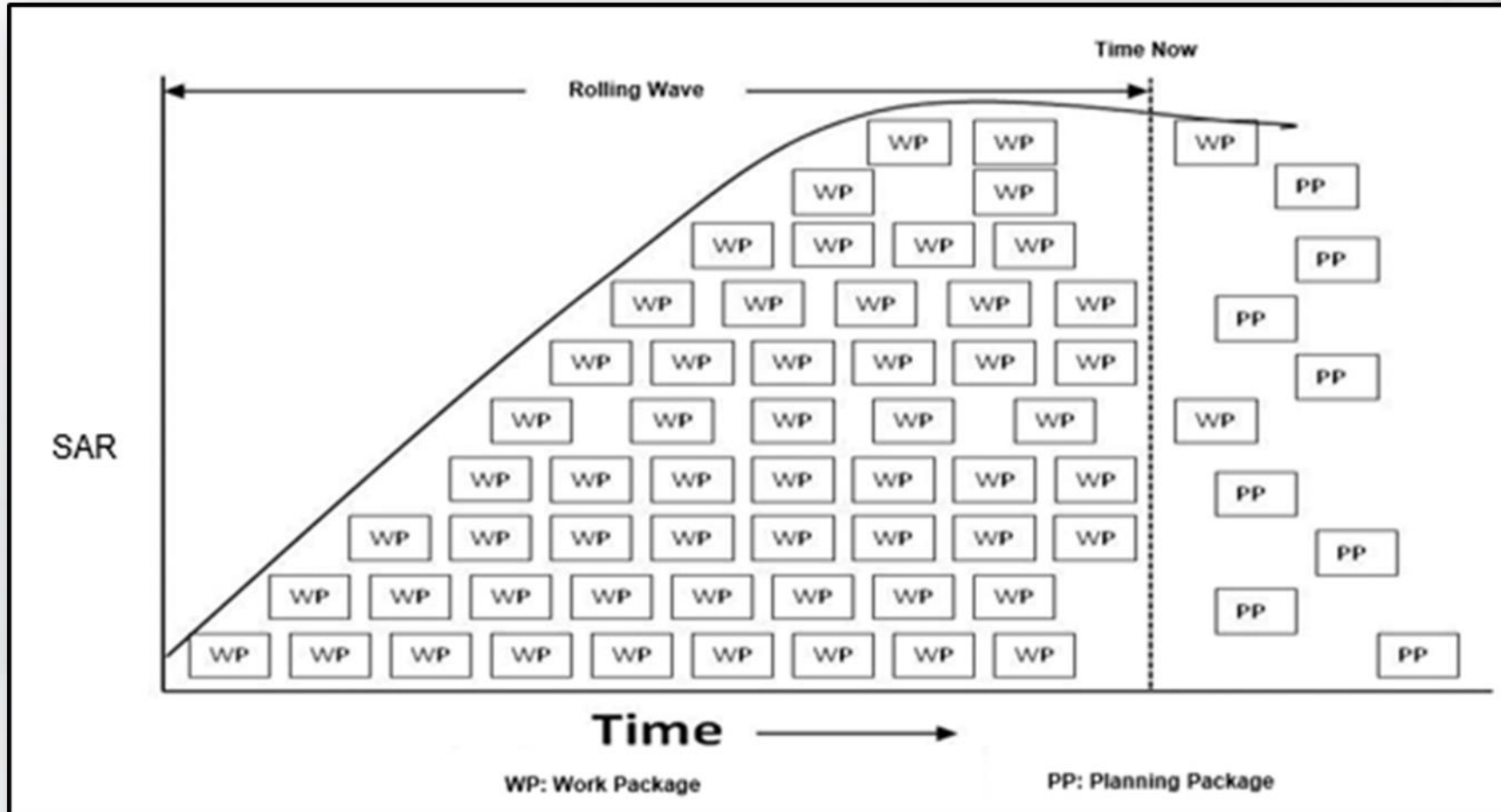
## Alignment and Ownership of the Baseline Benefits

- Ensure teams know and accept their scope, schedule, and budgets.
- Drive ownership.
- Ensure that stretch goals and targets are defined and accepted by the teams.
- Establish an environment of accountability.

## Agenda

- Purpose of a Performance Measurement Baseline
- Components of the Performance Baseline
- Components and Assembly of the Performance Baseline
- Scope
- Contract Terms and Conditions (CTC)
- Project Execution Plan (PEP)
- Schedule
- Work Breakdown Structure
- Work Breakdown Structure Benefits
- Organizational Breakdown Structure
- WBS/OBS Diagram
- Ownership
- **The Concept of Rolling Wave Planning**

# The Concept of Rolling Wave Planning



The Concept of Rolling Wave Planning

## The Concept of Rolling Wave Planning

- Rolling wave planning is a project management technique that involves progressive elaboration to add detail to the Work Breakdown Structure (WBS) on an ongoing basis.
- At the beginning of the project, near term deliverables are decomposed into individual components (work packages) and defined at the greatest level of detail.

## The Concept of Rolling Wave Planning

- Deliverables and schedule activities that will take place several reporting periods in the future are more broadly defined. For example, Phases 1-2 might be broken down fully in the WBS.
- Phases 3-6 might be outlined only to the level of subprojects.





**Thank You**

