

Design Basis Scoping Paper

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Outline

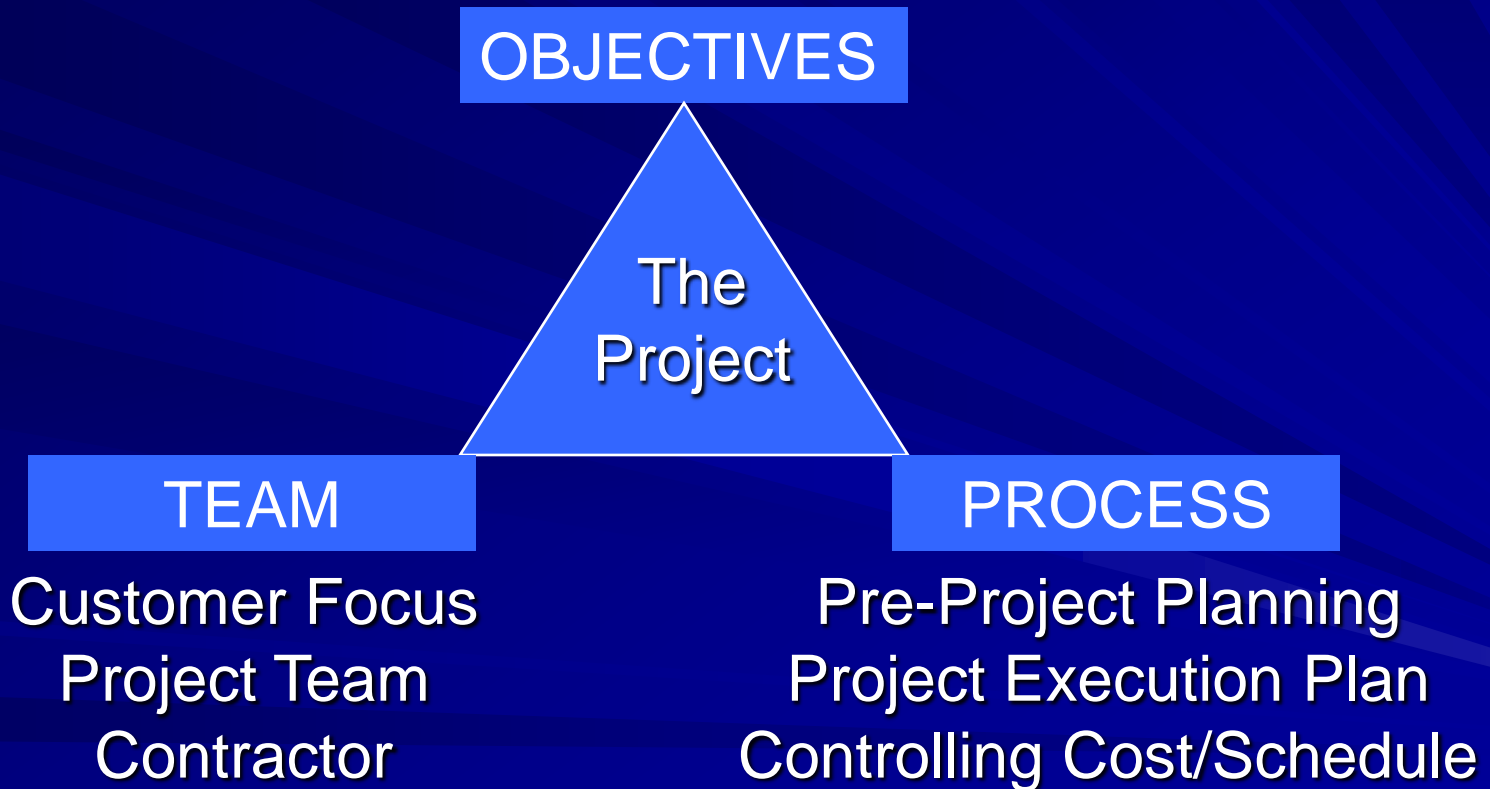
- Introduction
- Definition
- Purpose
- Involved Organizations
- DBSP Content
- Examples
- Development Process
- Conclusions
- Questions

Six Phases of a Project

- 1. Enthusiasm**
- 2. Disillusionment**
- 3. Panic**
- 4. Search for the Guilty**
- 5. Punishment of the Innocent**
- 6. Praise and Honor the Non-Participants**

Elements of Project Success

Understand Business Objectives
Strategy for Project Goals
Risk and Uncertainty



Definition

- DBSP is a contract between the signatories to further develop the proposed project in a manner that will ensure that the project's stated Business Objective is achieved in a cost effective manner.

Purpose

The purpose of the DBSP is to:

- Define the main elements of the project scope of work (What will be built)
- Define the limits of the project scope of work
- Provide the design contractor definitive information to independently develop the project scope
- Provide the Construction Agency the information to effectively plan and execute the project
- Provide a cost estimate (+/-40%) for budgeting purposes

Involved Organizations

- **Planning Organization**
- **Proponent or End User**
- **Construction Agency**
- **Environmental Protection Organization**
- **Estimating**

Planning Organization

- Leads the DBSP preparation effort
- Clarifies the definition of the project's Business Case
- Insures adequate justification for scope elements
- Describes in broad terms the facilities to be provided
- Controls scope
- Describes specific studies to be preformed during Preliminary Design
- Issues DBSP for review and approval

Proponent

- Provides supporting information
- Reviews scope elements
- Provides support to establish interface points
- Signs DBSP for endorsing project scope

Construction Agency

- **Reviews schedule**
- **Reviews scope elements**
- **Reviews constructability**
- **Reviews study requirements**
- **Signs DBSP for schedule considerations**

Environmental Protection Organization

- **Reviews project's environmental implications**
- **Signs DBSP for environmental considerations**

Estimating

- Prepares budgetary cost estimate
- Estimate Accuracy is +/- 40%

DBSP Content

- **Purpose of Facilities**
- **Present Situation**
- **Location Analysis**
- **Interfaces**
- **Design Objectives**
- **General Project Design Basis**

DBSP Content (cont'd)

- **Description of Proposed Facilities**
 - **Type of facility**
 - **Corresponding technical design basis**
 - **Specific facility attributes**

DBSP Content (cont'd)

- **Scope Evaluation to Date**
- **Additional Study Requirements during Preliminary Design**
- **Constructability and Logistical Assessment**
- **As-Built Drawing Assessment**
- **Value Engineering Study**
- **Project Schedule**
- **Appendices**

What to Include in DBSP

What's IN?

- ✓ Preliminary description of facility to be provided
- ✓ Evaluation of existing conditions
- ✓ Results of previous studies
- ✓ Scope of Work of Project organized by discipline
- ✓ Limits of scope of work for the Design Engineer
- ✓ Design bases
- ✓ Utility sources and interface points
- ✓ Conceptual layout of equipment
- ✓ Schematics and Process Flow Diagrams
- ✓ List of major equipment

What NOT to include in the DBSP

What's OUT?

- Exact size of equipment
- Type of valves, flow meters, levels, etc.
- Name of manufacturer
- Final layout, Sections, P&ID, etc.
- Detailed design calculations
- Detailed specifications
- Project cost

Example 1

Building

- Location
- Site conditions
- Type of construction
- Built-up Area
- Number of persons
- Sizing criteria
- Preliminary layout
- Utility requirements



Example 2

Sewage Treatment Plant

- Location
- Capacity
- Level of Treatment
- Treatment Process
- Treatment Facilities
- Design Criteria
- Electrical and Instrumentation
- Process Flow Diagram
- Conceptual Layout



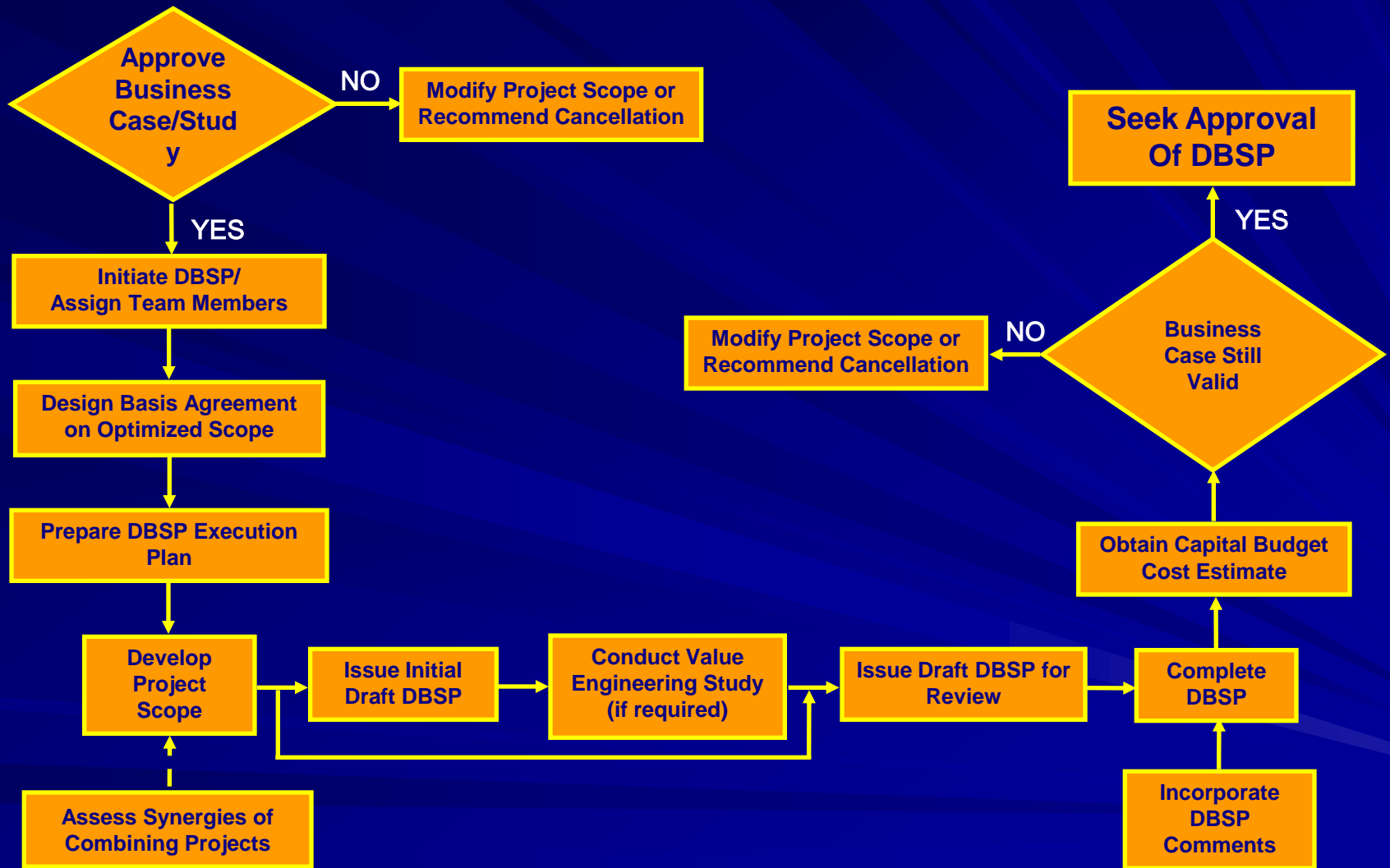
Example 3

Water Supply Network

- Location
- Number of persons
- Water requirement
- Piping material
- Preliminary pipe sizing
- Preliminary layout
- Pumping and storage facilities



Development Process



Conclusions

- **DBSP is a critical document in every project cycle**
- **DBSP requires proper and timely input from involved organizations**
- **A GOOD DBSP will put the project on track (scope, cost and schedule), and prevent future issues and conflicts**
- **A POOR DBSP will hinder the project design and execution phases, and negatively impact the project cost and schedule**

