

CHAPTER V PLAN FORMULATION APPROACH

PLAN FORMULATION RATIONAL

The fundamental plan formulation rationale being followed for the Shasta Lake Water Resources Investigation consists of:

- Identifying existing and projected future resource conditions without implementation of a project.
- Defining the water resources problems and needs to be addressed.
- Developing the planning objectives, constraints, and criteria, and an overarching Mission Statement.
- Formulating potential alternative plans to meet the study objectives.
- Comparing and evaluating the alternative plans.
- Selecting a plan for recommended implementation.

The strategy developed for this investigation has defined the above process in four basic phases. As can be seen in **Figure 5**, the four basic phases consist of:

- **Mission Statement Phase** – Identify without-project future conditions, define resulting resources problems and opportunities, define a specific set of planning objectives, identify the constraints and criteria in addressing the planning objectives, and develop a concise mission statement based on the study objectives.
- **Initial Plans Phase** – Identify potential resource management measures to address the study objectives and formulate, coordinate, and compare an initial set of potential alternative plans.
- **Alternative Plans Phase** – From the initial plans, formulate specific alternative plans to address the planning objectives; evaluate, coordinate, and compare the plans; and identify a plan for tentative recommendation.
- **Recommended Plan Phase** – Complete development of a tentatively recommended plan and prepare, coordinate, and process supporting decision documentation.

A summary of existing and potential future without-project conditions and problems and needs (similar to the NEPA Baseline) is included in Chapters III and IV. Following are the identified planning objectives, constraints, criteria, and Mission Statement.

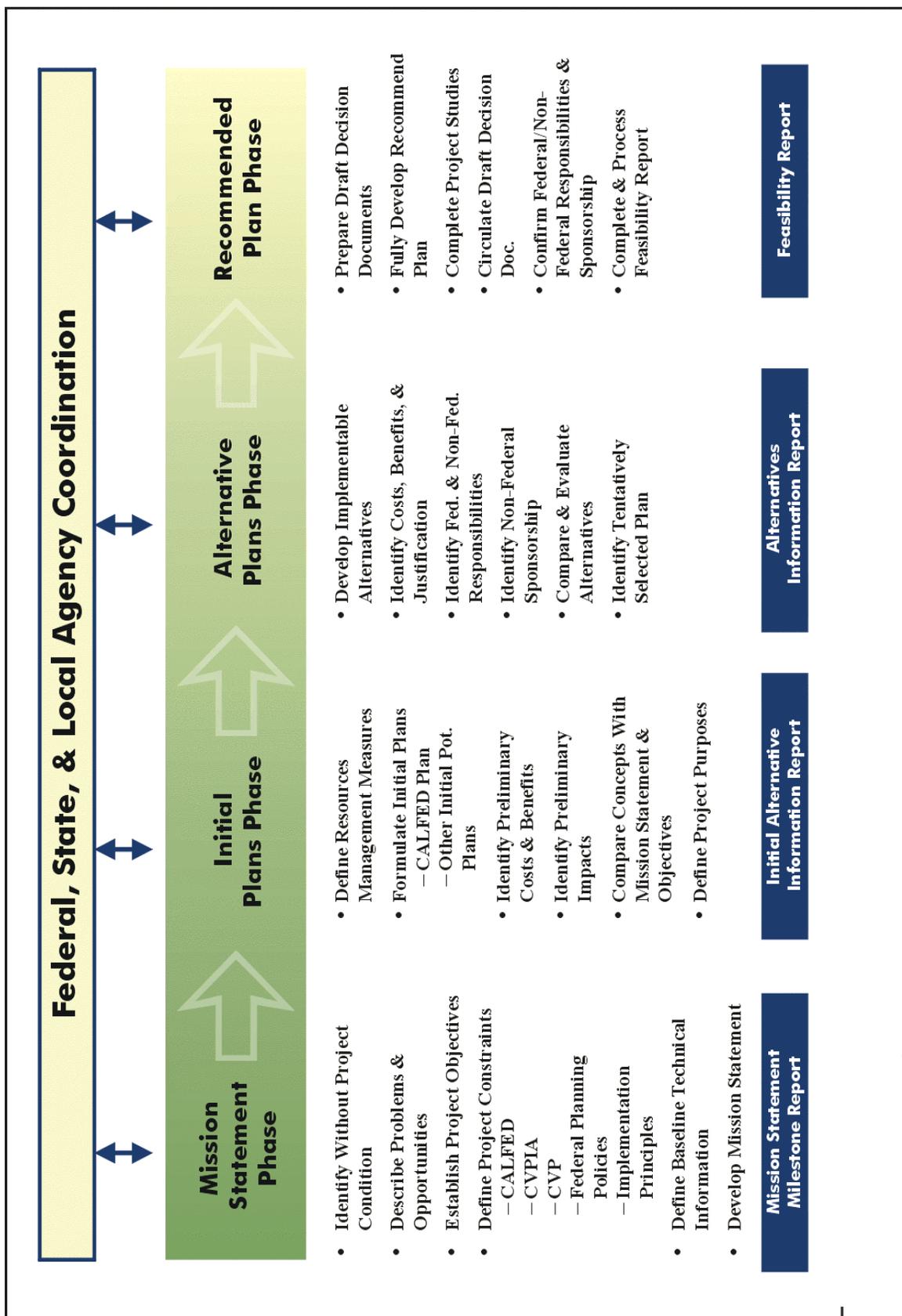


Figure 5 – Plan Formulation Process

PLANNING OBJECTIVES

On the basis of the previously identified and defined problems and needs in the study area and in relation to the study authorities, the following planning objectives were developed. These objectives are to be used to help guide the formulation of alternatives to address the problems and needs. They are separated into primary and secondary objectives. Primary objectives are those for which specific alternatives would be formulated to address. Secondary objectives are opportunities that should be considered in the plan formulation process, but only to the extent possible through pursuit of the primary planning objectives.

- **Primary Objectives** –

- Increase the survival of anadromous fish populations in the Sacramento River primarily upstream from the RBDD.
- Increase water supplies and water supply reliability for agricultural, M&I, and environmental purposes to the CVP to help meet future water demands with a primary focus on modification of Shasta Dam and Reservoir.

- **Secondary Objectives** – To the extent possible through pursuit of the primary planning objectives, include as opportunities, features to help:

- Preserve and restore ecosystem resources in the Shasta Lake area and along the upper Sacramento River.
- Reduce flood damages along the Sacramento River.
- Develop additional hydropower capabilities at Shasta Dam.
- Provide additional water-related recreational opportunities in the Shasta Lake area.

PLANNING CONDITIONS

Constraints

Fundamental to the plan formulation process is the identification and development of basic constraints specific to this investigation and general criteria to be used to help compare and evaluate alternative plans. Planning constraints include Congressional direction; current applicable laws, regulations, and policies; guiding principals specific to the investigation; and existing water resource projects and programs such as CALFED and CVPIA. Several major constraints in formulating and ultimately implementing a plan to meet study objectives are as follows:

- **Study Authorization** – The fundamental authority for this investigation is described in Chapter I. Basically, the authorization provides for an investigation of the potential benefits for enlarging or replacing Shasta Dam and Reservoir.

- **Laws, Regulations, and Policies** – Numerous laws, regulations, Executive Orders, and policies need to be considered, including the NEPA, Fish and Wildlife Coordination Act, Clean Air Act, Clean Water Act, ESA, CEQA, and the CVPIA.
- **CALFED ROD** – The CALFED ROD includes program goals, objectives, and projects primarily to benefit the Sacramento/San Joaquin Bay-Delta System. The ROD has been adopted by various State and Federal agencies for further consideration. In addition to enlarging Shasta Reservoir, the PPA includes four other surface water storage projects and groundwater storage projects to help reduce the discrepancy between water supplies and projected demands. The program also includes numerous other projects to help improve the ecosystem functions of the Bay-Delta System. Developed plans should be cognizant of the goals, objectives, and programs/projects of the CALFED ROD.

Guiding Principals

The following are fundamental principals intended to help guide development of solutions to the identified problems. They are based primarily on local, project-specific conditions including consideration of ongoing projects and programs.

- All alternative plans considered should address each of the identified primary planning objectives and, to the extent possible, the secondary planning objectives.
- Primary consideration should be given to recommendations in the CALFED ROD with at least one of the alternatives developed, or major element of an alternative, being the enlargement of Shasta Lake by approximately 300,000 acre-feet feet through raising Shasta Dam 6.5 feet.
- Measures and alternatives to address the planning objectives should consider:
 - Enhancing water management flexibility in the Sacramento Valley to facilitate changing diversion patterns during critical fish migration periods.
 - Providing opportunities for enhancing water management programs.
 - Including opportunities for conjunctive use including groundwater banking and storage in offstream surface water storage reservoirs.
 - Avoiding any reduction in flood control or hydraulic impacts to the areas downstream on the Sacramento River.
 - Minimizing the need for environmental mitigation associated with plan components through enhanced designs and construction methods.
 - Not precluding nor enhancing the potential for development of other elements of CALFED or other ongoing projects and programs.

Criteria

Potential alternative plans would need to be measured against several primary criteria, including those presented in the Federal Water Resources Council's *Principles and Guidelines*. The most significant criteria applicable to development of alternatives and plan selection are:

- **Completeness** – Completeness is the extent to which a given alternative plan provides and accounts for all necessary investments or other actions to ensure realization of planned effects.
- **Effectiveness** – Effectiveness is the extent to which an alternative plan alleviates the specified problems and achieves the specified objectives.
- **Efficiency** – Efficiency is the measure to which a plan is the most cost-effective means of alleviating the identified problems while realizing the specified objectives. One measure of efficiency is monetary costs versus benefits. Another measure includes contributions to ecosystem restoration.
- **Acceptability** – Acceptability is the workability and viability of the alternative plan with respect to acceptance by State and local governments and the public and compatibility with existing laws, regulations, and public policies. This includes a requirement for a non-Federal sponsor to share in the implementation cost for a potential project modification.

MISSION STATEMENT

On the basis of the identified problems and needs, primary and secondary planning objectives, relationship to other programs and projects, and Federal planning guidance, the following draft Mission Statement was developed.

“To develop an implementable plan primarily involving the modification of Shasta Dam and Reservoir to promote increased survival of anadromous fish populations in the upper Sacramento River; increased water supply reliability to the Central Valley Project; and to the extent possible through meeting these objectives, include features to benefit other identified ecosystem, flood control, and related water resources needs.”