
CHAPTER 2

IDENTIFICATION OF FLOOD PROTECTION ALTERNATIVES

Flood protection alternatives for the Pajaro River were developed by the interagency Staff Working Group at a focused project workshop. The goal of the workshop was to identify multi-objective projects that, taken in combination, would provide 100-year flood protection while enhancing opportunities for water supply, environmental restoration, groundwater protection, and intergovernmental participation. The focus of the workshop was to identify alternatives that maximize the benefits to the Valley. Many alternatives were identified at the workshop and others were developed from the initial alternatives. The alternatives were subjected to a cursory examination for feasibility, magnitude of benefits, and implementation constraints.

This chapter introduces the alternatives and provides a summary of the basic project concepts, feasibility, and benefits. Each of the projects is described in greater detail in Chapter 3. This chapter also includes a brief description of the land acquisition and/or land management alternatives that may be necessary for the various alternatives.

The general conclusions of the cursory examination of the project alternatives are as follows:

- A few single projects, reservoirs or conveyance structures, may completely protect against flooding, but most projects will provide only an incremental level of flood protection
- New dams or the raising of existing dams involve significant environmental limitations.
- Each alternative will require acquisition of land for either construction of the project alternatives or for floodplain easements.

2.1 Preliminary Identification of Alternatives

The Phase 1 models were used to identify the flood protection benefits possible through implementation of a particular alternative. Three types of alternatives were reviewed, including upstream flow retention/detention, downstream flow management flood protection, and sediment management for potential erosion/sediment control. These are described below.

Upstream Alternatives

These alternatives generally rely on flow detention or retention to improve flood protection. Flow detention attenuates the peak flow through storage of flood flows, creating a lower peak flow at a later time in the storm. Flow retention uses the capture of peak flows to prevent high flow rates from occurring in the downstream channels. Examples of these alternatives are new detention and retention in new developments, increased regional detention and retention capabilities at existing locations (i.e. expansion of Soap Lake or raising of existing dams), and construction of a new detention and retention facilities, such as new dams on the Pajaro or San Benito River.

Downstream Alternatives

These alternatives require the modification of downstream channels and floodplains to reduce risk of flood damage. The most common type of improvement is to increase downstream channel capacity. Channel improvement may be structural, as in the case of increased levee heights or floodwalls, to provide sufficient capacity to convey the expected peak flow event. Alternatives may also be non-structural, such as dedication of

