



## Initial Alternatives Evaluation

**Purpose:** To evaluate and compare Initial Alternatives and select a range of feasible alternatives to move forward for analysis in EIS/EIR that:

- Meet most of the Purpose and Need/Project Objectives (Settlement Requirements); and,
- Can avoid or substantially lessen one or more of the significant effects

### 1. Project Objectives:

- All alternatives meet some of the project objectives
- It is not necessary to meet all objectives because some are mutually exclusive

### 2. Technical Feasibility:

Technical Feasibility		Alternative 1			Alternative 2	Alternative 3	Alternative 4		
		B	C	D	A	A	A	B	C
Untested Technology in Similar Conditions	Number of Structures								
Estimate of Complexity (High, Med, Low)									

**Legend:**

= High      = Medium      = Low

### 3. Environmental Acceptability:

#### 3.a. Biological Effects

- Disturbed vegetation includes all vegetation within proposed levees that could be affected by dust, noise, vibration, physical damage from equipment etc.
- Source: 2002 DWR vegetation surveys using 1998 aerial photos with little field verification

Disturbed Vegetation		Alternative 1			Alternative 2	Alternative 3	Alternative 4		
		B	C	D	A	A	A	B	C
Total Acres									

Source: DWR 2002

**Legend:**

= High      = Medium      = Low

**3.b. Physical Effects**

- Total number of acres and number of parcels affected by the project (land within Reach 4B1 levee alignments)

Affected Land	Alternative 1			Alternative 2	Alternative 3	Alternative 4		
	B	C	D	A	A	A	B	C
Total Acres	Low	Medium	High	Low	Low	Low	Low	Medium
Number of Parcels	Low	Medium	High	Low	Low	Low	Low	Medium

**Legend:**

= High
  = Medium
  = Low

**3.c. Social Effects**

- All agricultural lands within Reach 4B1 proposed levee alignments
- Source: USDA NASS 2011 Cropland Layer Data

Agricultural Lands Removed from Production (Based on 2011 Crops)	Alternative 1			Alternative 2	Alternative 3	Alternative 4		
	B	C	D	A	A	A	B	C
Total Acres	Medium	Medium	High	Low	Low	Low	Medium	Medium

**Legend:**

= High
  = Medium
  = Low

- Source: USDA NASS 2011 Cropland Survey Data and Merced County 2010 Report on Agriculture for cost per acre by crop type
- This is not meant to establish the real value of the crops that would be removed; it is only meant to provide a means to compare each of the Initial Alternatives

Loss of Agricultural Production in 2010 Dollars	Alternative 1			Alternative 2	Alternative 3	Alternative 4		
	B	C	D	A	A	A	B	C
Total Value	Medium	Medium	High	Low	Low	Low	Medium	Medium

**Legend:**

= High
  = Medium
  = Low

**3.d. Regulatory Constraints**

- Project will require CWA 404 permit for impacts to wetlands and other waters of the U.S., as well as USC 408 approval for modifications to existing flood control projects authorized by the United States

Channel/Structure	Alternative 1			Alternative 2	Alternative 3	Alternative 4		
	B	C	D	A	A	A	B	C
Disturbed waterway in SJR (Miles)	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Disturbed waterway in Bypasses (Miles)	Low	Low	Low	Medium	Medium	Medium	Medium	Medium
Total Disturbed Waterway (Miles)	Medium	Medium	Medium	High	High	High	High	High
Number of Modified Flood Control Structures	Low	Low	Low	High	Medium	High	High	High

**Legend:**

= High
  = Medium
  = Low

**4. Cost:**

- Preliminary costs developed by Reclamation’s Technical Services Center (TSC)
- Do not include long-term O&M costs, land acquisition costs, or revegetation

Cost (in millions of dollars)	Alternative 1			Alternative 2	Alternative 3	Alternative 4		
	B	C	D	A	A	A	B	C
Construction Cost	Low	Medium	High	Low	Low	Low	Medium	Medium

**Legend:**

= High
  = Medium
  = Low

**5. Flood Control:**

- The Reach 4B Project has a constraint that it cannot affect flood control capacity or operational flexibility
- The pre-design process has required all alternatives to meet this constraint
- This evaluation focuses on improvements to operational flexibility

Flood Control	Alternative 1			Alternative 2	Alternative 3	Alternative 4		
	B	C	D	A	A	A	B	C
Increased Flood Control Flexibility								

<b>Legend:</b>
<span style="display: inline-block; width: 15px; height: 15px; background-color: #0070C0; margin-right: 5px;"></span> = Substantial Increase <span style="display: inline-block; width: 15px; height: 15px; background-color: #00BFC4; margin-left: 20px; margin-right: 5px;"></span> = Some Increase <span style="display: inline-block; width: 15px; height: 15px; background-color: #70AD47; margin-left: 20px; margin-right: 5px;"></span> = Minimal Increase