RECLAMATION
Managing Water in the West

U.S. Department of the Interior
Bureau of Reclamation

ODESSA SUBAREA SPECIAL STUDY
Columbia Basin Project

STUDY UPDATE
November 2007

This Study Update supplements information provided to you in October 2007.

STUDY BACKGROUND

The Odessa Subarea Special Study involves investigation of continued phased development of the Columbia Basin Project (Project) for the purpose of replacing groundwater currently used for irrigation in the Odessa Ground Water Management Subarea with Project surface water. Additional information about the Study is available at our website: www.usbr.gov/pn/.

Reclamation has completed appraisal-level engineering investigation of four water delivery alternatives and six water supply options. Reclamation presented appraisal-level investigation analyses, including preliminary cost estimates, at public meetings in October 2007. A Study Update, available at http://www.usbr.gov/pn/programs/ucao_misc/odessa/index.html, also summarizes the engineering investigation results. In response to recent public input, Reclamation is providing a summary breakdown of the cost estimates to supplement the information presented last month.

APPRAISAL-LEVEL COST ESTIMATE BREAKDOWN

The tables that follow provide additional information about the cost components comprising the total cost estimate ranges provided in October 2007. Table 1 provides a summary cost estimate breakdown for the four water delivery alternatives. Tables 2 and 3 provide summary cost estimate breakdowns for the water supply options, including using existing storage facilities and constructing new storage facilities, respectively. Please refer to the October 2007 Study Update for a more detailed description of the water delivery alternatives and water supply options. The cost estimate information presented here are preliminary and are not suitable for determining actual construction costs, or requesting construction fund appropriations from the Congress. The cost estimates do not reflect costs associated with land acquisition, utility relocation, or mitigation. These will be calculated in the next Study phase (feasibility).

COMMENT DEADLINE EXTENDED

Reclamation has requested written comment about the appraisal-level investigation results, including input on the criteria we should consider when selecting alternative(s) for study at the feasibility-level. To allow opportunity to review the supplemental information provided here, we are extending the written comment deadline to ***December 15, 2007***. Please provide your written comments to Ellen Berggren, Study Manager, by mail (Bureau of Reclamation, 1150 North Curtis Road, Suite 100, Boise, Idaho 83706); e-mail (StudyManager@pn.usbr.gov); or facsimile (208-378-5102).

Table 1. Water Delivery Alternatives – Summary of Appraisal-level Cost Estimate Breakdown.

Cost Component	Alternative A[1] *Construct East High Canal*	Alternative B [1] *Northern portion of East High Canal/ enlarge and extend East Low Canal*	Alternative C *Enlarge East Low Canal*	Alternative D *Use existing East Low Canal configuration*
Canals, Laterals and Pipe Distribution	$1,226,454,000 - $2,452,908,000	$921,320,000 - $1,616,316,000	$351,401,000 - $516,642,000	$120,555,000 - $195,695,000
Siphons	$419,470,000 - $838,940,000	$300,460,000 - $600,920,000	$61,668,000 - $70,918,000	- - - -
Tunnels	$83,700,000 - $167,400,000	$43,600,000 - $87,200,000	- - - -	- - - -
Pumping Plants	$46,140,000 - $92,280,000	$142,448,000 - $209,017,000	$152,319,000 - $203,472,000	$82,773,000 - $110,864,000
Transmission Lines, Substations, etc.	$24,236,000 - $48,472,000	$20,652,000 - $35,723,000	$13,421,000 - $19,385,000	$9,076,000 - $13,109,000
Mobilization @ ± 5%	[1]	[1]	$29,200,000 - $41,000,000	$10,500,000 - $16,000,000
Unlisted Items @ ± 10-15%	[1]	[1]	$61,991,000 - $128,583,000	$27,096,000 - $54,332,000
Subtotal (Contract Costs) [2]	- - - -	- - - -	***$670,000,000 - $980,000,000***	***$250,000,000 - $390,000,000***
Contingencies @ ± 20-30%	[1]	[1]	$130,000,000 - $290,000,000	$40,000,000 - $110,000,000
Field Cost Total [3]	**$1,800,000,000 - $3,600,000,000**	**$1,620,000,000 - $2,960,000,000**	**$800,000,000 - $1,270,000,000**	**$290,000,000 - $500,000,000**
Non-Contract Costs	$360,000,000 - $1,080,000,000	$324,000,000 - $888,000,000	$200,000,000 - $444,500,000	$87,000,000 - $200,000,000
TOTAL CONSTRUCTION COST [4]	**$2,160,000,000 - $4,680,000,000**	**$1,944,000,000 - $3,848,000,000**	**$1,000,000,000 - $1,714,500,000**	**$377,000,000 - $700,000,000**

NOTES:

1. All or portions of cost estimate were indexed (40+ years) from feasibility cost estimates calculated in the 1970s. Indexed costs incorporated allowances for mobilization, unlisted items, and contingencies into each infrastructure cost component in the table.

2. Contract costs represent the estimated cost of the contract at the time of bid or contract award and include additives for mobilization and unlisted items. Mobilization involves costs associated with mobilizing contractor personnel and equipment to the project site during initial project startup, calculated at ± 5 percent. Additives for unlisted items are used to account for the confidence level in the estimates based on data available and level of detail, calculated at ± 10-15 percent. Unlisted items provide a contingency for minor design changes and for minor pay items that have not been itemized, but will have some influence on the total cost.

3. Field costs include the direct contract cost of materials and services for construction of facilities and include construction contract costs and contingencies. Contingencies are funds used after construction starts and not for design changes during project planning. The contingency funds are used to pay contractors for overruns on quantities, changed site conditions, change orders, etc., calculated at ± 20-30 percent of the total estimated contract costs.

4. Total construction cost includes field costs and non-contract costs. Non-contract costs include investigations, designs and specifications, and construction engineering and supervision, calculated at ± 20 to 40 percent of the total estimated field costs.

Table 2. Water Supply Options, Using Existing Storage Facilities – Summary of Appraisal-level Cost Estimate Breakdown

Cost Component	Banks Lake Drawdown *(No structural modifications to dams required)*	Banks Lake Raise	Potholes Reservoir Reoperation
Canals and Road Modifications	$0	$6,152,000 - $8,323,000	- - - -
Dam Modifications	$0	$4,147,000 - $55,298,000	$1,146,000 - $30,560,000
Canal Radial Gates Modifications	$0	$885,000 - $1,071,000	- - - -
Mobilization @ ± 10 %	$0	$560,000 - $3,200,000	$57,000 - $1,550,000
Unlisted Items @ ± 10-15%	$0	$1,256,000 - $10,108,000	$97,000 - $4,890,000
Subtotal (Contract Costs) [1]	***$0***	***$13,000,000 - $78,000,000***	***$1,300,000 - $37,000,000***
Contingencies @ ± 20-30%	$0	$2,500,000 - $22,000,000	$300,000 - $11,000,000
Field Cost Total [2]	**$0**	**$15,500,000 - $100,000,000**	**$1,600,000 - $48,000,000**
Non-Contract Costs	$0	$3,100,000 - $30,000,000	$320,000 - $14,400,000
TOTAL CONSTRUCTION COST [3]	**$0**	**$18,600,000 - $130,000,000**	**$1,920,000 - $62,400,000**

NOTES:

1. Contract costs represent the estimated cost of the contract at the time of bid or contract award and include additives for mobilization and unlisted items. Mobilization involves costs associated with mobilizing contractor personnel and equipment to the project site during initial project startup, calculated at ± 5 percent. Additives for unlisted items are used to account for the confidence level in the estimates based on data available and level of detail, calculated at ± 10-15 percent. Unlisted items provide a contingency for minor design changes and for minor pay items that have not been itemized, but will have some influence on the total cost.

2. Field costs include the direct contract cost of materials and services for construction of facilities and include construction contract costs and contingencies. Contingencies are funds used after construction starts and not for design changes during project planning. The contingency funds are used to pay contractors for overruns on quantities, changed site conditions, change orders, etc., calculated at ± 20-30 percent of the total estimated contract costs.

3. Total construction cost includes field costs and non-contract costs. Non-contract costs include investigations, designs and specifications, and construction engineering and supervision, calculated at ± 20 to 40 percent of the total estimated field costs.

Table 3. Water Supply Options, Constructing New Storage Facilities – Summary of Appraisal-level Cost Estimate Breakdown

Cost Component	Dry Coulee Reservoir	Rocky Coulee Reservoir	Lower Crab Creek Reservoir (200,000 Acre-Feet)	Lower Crab Creek Reservoir (472,000 Acre-Feet)
Canals, Pumping Plant Structures, Control Structures, Bridges, etc.	$28,402,000 - $32,887,000	$21,882,000 - $30,391,000	$253,000 - $372,000	$458,000 - $531,000
Outlet Structures	$35,882,000 - $56,656,000	$6,102,000 - $8,992,000	$6,225,000 -$9,174,000	$12,894,000 - $20,359,000
Roads	$4,329,000 - $5,531,000	$3,669,000 - $4,689,000	$2,289,000 - $2,924,000	$2,289,000 - $2,924,000
Dam (s)	$516,804,000 - $820,806,000	$69,402,000 - $112,779,000	$137,743,000 - $223,832,000	$184,582,000 - $299,946,000
Mechanical	$1,283,000 - $1,426,000	$2,691,000 - $3,289,000	$361,000 - $401,000	$475,000 - $528,000
Gates	$11,388,000 - $12,654,000	$4,738,000 - $5,790,000	$2,886,000 - $3,207,000	$4,761,000 - $5,290,000
Radial Gates	$1,191,000 - $1,323,000	$478,000 - $585,000	$156,000 - $173,000	$218,000 - $242,000
Pumping Units	- - - -	$15,431,000 - $18,860,000	- - - -	- - - -
Outlet Steel Pipe / Valves	$10,545,000 - $11,717,000	$7,975,000 - $9,747,000	$1,148,000 - $1,276,000	$1,758,000 - $1,954,000
Electrical Plant	$199,000 - $221,000	$6,125,000 - $8,848,000	$50,000 - $73,000	$50,000 - $73,000
Transmission Lines, Substations, SCADA, etc.	$274,000 - $304,000	$1,247,000 - $1,802,000	$137,000 - $198,000	$137,000 - $198,000
Mobilization @ ± 5%	$31,000,000 - $47,000,000	$7,000,000 - $10,500,000	$7,600,000 - $12,000,000	$10,500,000 - $16,500,000
Unlisted Items @ ± 10-15%	$68,703,000 - $159,475,000	$13,260,000 - $33,728,000	$16,152,000 - $36,370,000	$21,878,000 - $51,455,000
Subtotal (Contract Costs) [1]	***$710,000,000 - $1,150,000,000***	***$160,000,000 - $250,000,000***	***$175,000,000 - $290,000,000***	***$240,000,000 - $400,000,000***
Contingencies @ ± 20-30%	$140,000,000 - $350,000,000	$35,000,000 - $70,000,000	$35,000,000 - $90,000,000	$50,000,000 - $120,000,000
Field Cost Total [2]	**$850,000,000 - $1,500,000,000**	**$195,000,000 - $320,000,000**	**$210,000,000 - $380,000,000**	**$290,000,000 - $520,000,000**
Non-Contract Costs	$170,000,000 - $450,000,000	$39,000,000 - $96,000,000	$42,000,000 - $114,000,000	$58,000,000 - $156,000,000
TOTAL CONSTRUCTION COST [3]	**$1,020,000,000 - $1,950,000,000**	**$234,000,000 - $416,000,000**	**$252,000,000 - $494,000,000**	**$348,000,000 - $676,000,000**

NOTES:

1. Contract costs represent the estimated cost of the contract at the time of bid or contract award and include additives for mobilization and unlisted items. Mobilization involves costs associated with mobilizing contractor personnel and equipment to the project site during initial project startup, calculated at ± 5 percent. Additives for unlisted items are used to account for the confidence level in the estimates based on data available and level of detail, calculated at ± 10-15 percent. Unlisted items provide a contingency for minor design changes and for minor pay items that have not been itemized, but will have some influence on the total cost.

2. Field costs include the direct contract cost of materials and services for construction of facilities and include construction contract costs and contingencies. Contingencies are funds used after construction starts and not for design changes during project planning. The contingency funds are used to pay contractors for overruns on quantities, changed site conditions, change orders, etc., calculated at ± 20-30 percent of the total estimated contract costs.

3. Total construction cost includes field costs and non-contract costs. Non-contract costs include investigations, designs and specifications, and construction engineering and supervision, calculated at ± 20 to 40 percent of the total estimated field costs.