

C9. COST ESTIMATES.

C9.1 Basis of Cost Estimate.

C9.1.1 The cost estimate for the selected plan was prepared utilizing M-CACES. However, all data for equipment, labor, and materials were manually entered in lieu of referencing the M-CACES unit price book and database. The cost estimate reflects current and applicable pricing and addresses specific construction procedures for the various line items in the estimate.

C9.1.2 The estimated costs were based upon an analysis of each line item evaluating quantity, production rate, and time, together with the appropriate equipment, labor, and material costs. In addition, these costs were based on actual in-house knowledge and experience by NOD cost engineers who either personally designed or estimated similar projects.

C9.1.3 All the construction work is common to NOD. In addition, some of the construction materials, including concrete, steel sheet piling; structural steel, timber piling and piping, are available locally. All construction material required for the project could be truck or barge delivered to the job site.

C9.2 Contingencies.

C9.2.1 Contingencies for the cost estimates were based upon similar cost estimates that had a risk analysis performed using the Range Estimating computer program.

C9.2.2 Contingencies for engineering and design are based on uncertainties involved in the preparation of plans and specifications, and in engineering during construction. These include cost of field data collection; unanticipated design problems; change in design based on the review of the report, due to information from surveys and soil borings and changes in design criteria; and changes in overhead rates.

C9.2.3 Contingencies for construction management were provided by Construction Division, and are based on using a historical average of time growth for similar type contracts in the area. The time growth includes additional duration for unusually severe weather and unknown changes to the contracts.

C9.3 Detailed Estimate. The project cost estimate for the selected plan in M-CACES format is included in Volume 5 of this report. The project estimate of first cost, which includes costs for lands and damages, and real estate costs during construction, as well as construction costs, is \$78,946,490. Construction cost estimates for all alternatives studied are also included in Annex 1 to this volume.