

Technical Review Checklist for ATR		Review Date:	-----
Form Date: 26 Feb 2008 – rev 09 Jul 08		Rev_ Date:	-----
BASELINE COST ESTIMATE SUPPORTING A FEASIBILITY REPORT			
FOR:	-----		
PROJECT:	-----		
WORK REQUEST NUMBER	-----	WORK REQUEST DATE	-----
SCOPE OF WORK / PROJECT DESCRIPTION			

To be completed - - -

REGULATION AND GUIDANCE FOR COST ENGINEERING ATR

- ER 1105-2-100, Planning Guidance Notebook
- ER 1110-2-1150, Engineering and Design for Civil Works Projects
- ER 1110-1-1300, Cost Engineering Policy and General Requirements
- ER 1110-2-1302, Civil Works Cost Engineering
- EI 01D010, Engineering Instructions, Constr Cost Estimates (or soon to be UFC 3-740-05)
- EC 1110-1-105, Independent Technical Review
- EC 1105-2-408, Peer Review of Decision Documents
- Engineering & Construction Bulletin, 11 June 06, MCACES
- CECW-CP Memorandum, Peer Review Process, 30 Mar 2007
- Engineering & Construction Bulletin, 10 Sep 07, RISK ANALYSIS
- EC 11-2-187, Corps of Engineers Civil Works Direct Program, Program Development Guidance, Fiscal Year (*specific for budget year*)
- ER 1165-2-131, Local Cooperation Agreements for New Start Construction Projects
- EC 1105-2-410, Review of Decision Documents

LIST OF DOCUMENTS RECEIVED

- Yes___ No___ Main Report
- Yes___ No___ Cost Appendix
- Yes___ No___ Engineering Appendix
- Yes___ No___ Adequate Scoping Information
- Yes___ No___ Estimates of recommended plan in electronic format for MCACES MII and dredging (CEDEP)
- Yes___ No___ District Cost Engineering internal cost review documentation (DQC – See Draft EC 1105-2-410)
- Yes___ No___ Total Project Cost Sheet – all Feature accounts
- Yes___ No___ Total Project Schedule – all Feature accounts
- Yes___ No___ Risk Analysis for projects (Required for Project >\$40M)
- Yes___ No___ Labor funding to provide review

FEASIBILITY REVIEW COMMENTS

**[note to reviewer; copy paste these comments to DrCheck's or other document submitted to the customer
Ensure comments are denoted as critical or non-critical.]**

Cost Summary

\$	RECOMMENDED PLAN CONSTRUCTION ESTIMATE (excluding contingency)
%	% CONTINGENCY
\$	TOTAL RECOMMEND PLAN CONSTRUCTION COST
	PRICE LEVEL DATE OF THE RECOMMENDED PLAN CONSTRUCTION COST
\$	TOTAL PROJECT COST (CONSTANT DOLLARS
	PRICE LEVEL DATE OF THE TOTAL PROJECT COST (constant dollars)
\$	TOTAL PROJECT COST INFLATED THROUGH THE PROJECT SCHEDULE

1. REPORT CONTENT COMMENTS

----- (comments with the corresponding line reference numbered 1.XX)

2. COMPARATIVE COST ESTIMATES COMMENTS

----- (comments with the corresponding line reference numbered 1.3XX)

3. RECOMMENDED PLAN CONSTRUCTION COST ESTIMATE REVIEW COMMENTS

----- (comments with the corresponding line reference numbered 2.XX through 6.XX)

4. CONSTRUCTION AND PROJECT SCHEDULE REVIEW COMMENTS

----- (comments with the corresponding line reference numbered 7.XX)

5. TOTAL PROJECT COST SUMMARY REVIEW COMMENTS

----- (comments with the corresponding line reference numbered 8.XX through 10.XX)

PROJECT DESCRIPTION

----- (brief summary description)

COST ENGINEERING TECHNICAL REVIEW

CHECKLIST

INSTRUCTIONS: Check items that are approved by the technical review as “Yes” or “No”. Check “N/P” for items not provided, “N/A” for lines that do not pertain to the level of estimate being reviewed; for items that are not complete “No”. Fill out "Comment Review Form" or "Dr Checks" with the corresponding line reference number. Indicate whether the comments have been submitted in Dr. Checks.

Y	N	N/P	N/A	Categories/Questions	
				1.00	Basic Information For Reviewer – SCOPE AND FORM
				1.10	Draft Feasibility Report, General
				1.101	Is the complete Feasibility Report provided for this cost review? As a minimum this should include the main body of the report, the engineering appendix, all cost tables or appendices, and the project schedule. Electronic format is recommended.
				1.102	Is the detailed construction cost estimate for the recommended plan provided in electronic format? Current software is MCACES-MII or CEDEP.
				1.103	Does the executive summary clearly present the “Total Project Cost inflated through the project schedule”? Upon project approval, this Total Project Cost is the “Baseline Cost Estimate” subject to cost limits of Section 902 of WRDA 1986. (ER 1105-2-100)
				1.104	
				1.20	Draft Feasibility Report, Cost Estimate Report Section
				1.201	Does the report include separate sections summarizing the development of screening comparative estimates, the construction cost estimate for the recommended plan, and Total Project Costs?
				1.202	Does the cost estimate report section summarize and describe the basis and development of the comparative estimates, such as describing the method of construction, assumptions used in developing the estimate, and the technical/design data available? (ER 1110-2-1302, 3.a.)
				1.203	Does the cost estimate report section clearly indicate, summarize and describe development of the recommended plan construction cost estimate?
				1.204	Does the cost estimate report section summarize the uncertainties associated with major cost items in the recommended plan estimate? (ER1105-2-100, App. E)
				1.205	Does the cost estimate report section summarize the cost risk and resulting contingency development for the recommended plan construction cost estimate?
				1.206	Does the report describe the development of the recommended plan construction schedule and where applicable, development of multiple construction contract schedules?
				1.207	Does the cost estimate report section summarize and describe the basis and development of Total Project Costs, such as the source and basis of; engineering and design (Feature 30), construction management (Feature 31), other pertinent feature costs, the price level of the constant dollar estimates (preparation date and program year date), and basis of cost indexes for inflating the project costs (inflated dollar basis) through the project schedule?
				1.208	
				1.30	Comparative Construction Cost Estimates
				1.301	Is the technical/design data, method of construction, and assumptions used for developing the comparative estimates included and described? (ER 1110-2-1302)

Y	N	N/P	N/A		Categories/Questions
				1.302	Are all comparative cost estimates at the same price level?
				1.303	Is the total project cost of each comparative estimate accurately used in the economic analysis comparisons, such as costs and benefits at the same price level? (ER 1105-2-100)
				1.304	
				1.40	Recommended Plan - Construction Cost Estimate
				1.401	Does it appear that the scope of the recommended plan has been adequately captured and presented in the construction estimate? If not, provide specific examples.
				1.402	Is the construction cost estimate prepared using current estimating tools in MCACES? Currently MII and Corps of Engineers Dredge Estimating Program (CEDEP). Engineering & Construction Bulletin, 11 June 06, MCACES
				1.403	Are construction cost estimates at current price levels for the recommended plan?
				1.404	Has the estimate been previously reviewed and checked? (ER 1110-1-1300) (EC 1105-2-410)
				1.405	Has estimate been approved by Chief, Cost Engineering Branch/Section? (ER 1110-1-1300)
				1.406	
				1.50	Construction Schedule(s)
				1.501	Is(are) the construction schedule(s) based upon the scope of design and details in the cost estimate for the recommended plan?
				1.502	
				1.60	Project Schedule – Baseline Project Schedule
				1.601	Has a total baseline project schedule been provided indicating pre-construction and post-construction award activities, including all Feature Accounts?
				1.602	Does the project schedule clearly show decision points associated with project authorization and construction funding for the non-Federal sponsor's investment decisions and forecasting the final Total Project Cost inflated through the project schedule? (ER 1110-2-1150, ER 1165-2-131)
				1.603	Is/Are the construction schedule(s) clearly presented in the project schedule?
				1.604	
				1.70	Total Project Cost Summary - Baseline Cost Estimate (BCE)
				1.701	Are the costs for lands and damages, all construction features, planning-engineering and design (PED), and construction management, and all project management included in the total project cost?
				1.702	Are appropriate contingencies included?
				1.703	Are two total project cost estimates displayed in the feasibility report; one based on constant dollars and one based on projected inflation rates? (ER 1105-2-100, ER 1105-2-100, 4.3., ER 1110-2-1302)

Y	N	N/P	N/A	Categories/Questions	
				1.704	Is each contract and/or element of the recommended plan escalated for inflation according to the baseline project schedule?
				1.705	Are the Federal and non-Federal cost share percentages shown and total costs separated accordingly?
				1.706	Is the non-Federal sponsor's obligations clearly shown?
				1.707	
				1.80	Engineering Appendix
				1.801	Does the design package clearly meet the requirements of ER 1110-2-1150 E&D for Civil Works Projects – Feasibility Stage (Section 13 – Engineering During Feasibility Stage)? http://www.usace.army.mil/publications/eng-regs/cecw.htm
				1.802	Scope is extremely important as it affects cost, schedule and contingency. Has the scope been adequately captured and presented at the prescribed level in accordance with ER 1110-2-1150?
				1.803	Does Reviewer have a clear Definition of Scope? Provide general comment regarding your confidence in the scope quality provided. - -- - -- - --
				1.804	Does the package meet the requirements within ER 1105-2-100, Exhibit G of the Planning Guidance Notebook?
				1.805	
				2.00	Project Description (General Construction Details And Narrative) In The Construction Cost Estimate Project Notes
				2.100	Basis of Cost Estimate Notes
				2.101	Do the project notes present a clear understanding and definition of Scope?
				2.102	Is the scope in the project notes consistent with the scope of the recommended plan?
				2.103	Do the project notes identify documents used as the basis for this estimate?
				2.104	Are the major project features identified?
				2.105	Do the project notes identify Federal and Non-Federal cost sharing requirements?
				2.106	Do the notes address significant volatile cost items in the project scope?
				2.107	Do the project notes describe risk analysis for establishing contingencies?
				2.108	Do the project notes clarify major assumptions such as acquisition strategy, expected bid competition, prime and subcontractor assignments, major cost quotes, major construction processes, construction phasing and/or sequencing.
				2.109	
				2.20	Basis of Construction Schedule Notes
				2.201	Is the construction schedule consistent with the baseline project schedule?
				2.202	Are Dates for completion given, milestone dates set?
				2.203	Are construction windows or limitations considered and documented?
				2.204	Do the notes identify inflation points (beginning or mid-point of construction) consistent with the project schedule?
				2.205	Do the notes address number of crews, shift work, overtime?

Y	N	N/P	N/A		Categories/Questions
				2.206	
				2.30	Construction Estimate Notes
				2.301	Are general assumptions noted in the project notes and are they reasonable?
				2.302	Is site access considered and presented in the notes?
				2.303	Are borrow areas needed and identified?
				2.304	Are unusual conditions (soil, water and water diversion, weather) considered and documented in the estimate notes?
				2.305	Are unique construction techniques considered and documented?
				2.306	Do the notes address equipment availability and distance traveled?
				2.307	Do the notes address labor availability and distance traveled?
				2.308	Do the notes address material availability and distance traveled?
				2.309	Are environmental concerns during construction documented in the notes?
				2.310	Is there an Acquisition Plan? (When and method of acquisition)
				2.311	Is there a Sub-Contracting Plan and subcontract crafts identified?
				2.312	Are Effective Dates for pricing labor, equipment, and material given?
				2.313	Are estimate supporting databases listed?
				2.314	Are estimate supporting databases current and up-to-date for the location?
				2.315	
				2.4D	Dredging Estimate Notes
				2.4D1	Do the project notes include a narrative presenting the rationale used by the cost engineer for dredging equipment selection?
				2.4D2	Do the project notes describe the basis for production rates?
				2.4D3	
				2.40	Question, at this point do you, the reviewer, have a good understanding of the project?
				3.00	General Estimate Layout - Title Structure (WBS)
				3.01	Is the estimate in proper Work Breakdown Structure format in accordance with all guidelines?
				3.02	Does the WBS adequately reflect all project scope?
				3.03	Are the title structure and the descriptions adequate to determine what was being estimated?
				3.04	Were good unit title task costs / assemblies developed to depict a complete estimate?
				3.05	Were good unit title task costs / assemblies developed to demonstrate reasonable costs?
				3.06	Were good unit title task costs / assemblies developed to support the development of a reasonable construction schedule?
				3.07	
				4.00	Construction Estimate Details – UPB/CIS Items Used To Develop Assemblies
				4.10	General Details
				4.101	Is the estimate detail traceable back to the scope package?

Y	N	N/P	N/A		Categories/Questions
				4.102	Does the estimate separate and include all major items scoped in the recommended plan?
				4.103	Does the estimate detail the assumptions made for development of the detailed cost items?
				4.104	Do quantities appear reasonable and consistent with the recommended plan?
				4.105	Are note fields used to briefly explain the detail costs?
				4.106	Does the estimate organize and present a logical sequence of work?
				4.107	Are critical quantities and costs identified in the estimate details?
				4.108	Does the estimate contain specific detail to make judgment on whether costs are reasonable?
				4.109	
				4.20	Labor and Equipment
				4.201	Are the actual labor rates reasonable? Check specific rates.
				4.202	Do the labor rates reflect current market and locale such as rural or metro availability?
				4.203	Review the estimate settings for overtime and any other modifiers. Is any overtime used judiciously for critical-path elements?
				4.204	Are the actual equipment rates reasonable? Check specific rates.
				4.205	Does crew makeup look reasonable?
				4.206	Are crew production rates reasonable?
				4.207	Were equipment fuels updated to current rates?
				4.2D1	Does the estimate clearly indicate that the costs for dredge plant are based on historical data or CEDEP?
				4.30	Materials
				4.301	Are appropriate allowances applied to items where loss due to handling, placement, cutting, transportation, contamination, etc.?
				4.302	Does earthwork consider BCY, LCY and ECY?
				4.303	Are critical or volatile materials and quantities identified at the detail level?
				4.304	Are major material quotes identified?
				4.305	Does the estimate clarify/include transport costs?
				4.306	
				4.40	Mobilization - Preparatory Work, Demobilization – Cleanup
				4.401	Are mobilization and demobilization costs detailed?
				4.402	Does the total mobilization and demobilization cost appear reasonable?
				4.403	
				4.4D1	For dredging work does the estimate include preparation of dredge attendant plant for transfer, the cost to move all plant and equipment return of tug or towing vessel, and preparation of the plant to start work?
				4.4D2	Does the estimate clearly include a construction support site?
				4.4D3	Does the estimate present the reasons for using a different distance for demobilization?
				4.4D4	Does the estimate include all costs to secure machinery and equipment for storage?

Y	N	N/P	N/A	Categories/Questions	
				4.4D5	Does the estimate clearly include indirect costs in the mobilization and demobilization pay item?
				4.4D6	
				4.50	Miscellaneous Estimate Details
				4.501	Are volatile cost items identified? Check major items that effect cost?
				4.502	Do major cost items reflect a reasonable unit of measure to ascertain a unit cost?
				4.503	Do major unit prices appear reasonable for the locale? (concrete, steel, earthwork, etc.)
				4.504	Are major construction concerns considered such as site access, care and diversion of water, etc.
				4.505	Are any costs developed for HTRW concerns?
				4.506	
				4.5D1	Where applicable, are pipeline dredging gross production costs consist of costs associated with dredging time, not by element of work?
				4.5D2	Where applicable, are hopper and mechanical dredge gross production costs based on excavation time, transport time, and disposal time?
				4.5D3	
				4.60	Subcontracting
				4.601	Are subcontractor assignments and markups reasonable?
				4.602	Does the estimate identify subcontract quotes (dependent on type of estimate.)?
				4.603	Has an appropriate consideration been made in addressing multi-tier subcontracting for specialty items?
				4.604	
				5.00	Construction Cost Summary, Including Indirect & Markups
				5.01	Are appropriate taxes included or excluded as may be required?
				5.02	Is the field office overhead reasonable for this project?
				5.03	Does the home office overhead look reasonable for this type of work?
				5.04	Is profit reasonable and was the weighted guideline method used to calculate it?
				5.05	Does Bond seem reasonable?
				5.06	Are all costs at the same price level?
				5.07	
				6.00	Risk Analysis And Contingency (required over \$40M)
				6.10	Risk Analysis
				6.101	Does the estimate include a discussion of the uncertainties associated with each major cost item? (ER 1105-2-100 APP E)
				6.102	Was a risk analysis completed and documented using accepted software?
				6.103	Was the analysis supported by market research?
				6.104	Did the PDT provide input for the Risk Analysis?
				6.105	Are key variables identified and considered?
				6.106	Is Scope quality and detail addressed?
				6.107	Are key Design elements considered within the study?

Y	N	N/P	N/A		Categories/Questions
				6.108	Is Volatile pricing considered?
				6.109	Is Material availability and transport considered?
				6.110	Is Unique construction considered?
				6.111	Is Schedule (restrictive or permissive) considered?
				6.112	Are there any other key variables requiring consideration?
				6.113	Does risk consider acquisition strategy?
				6.114	Does the analysis consider potential savings such as VE and alternatives?
				6.115	Are the contingency allowances a result of a risk analysis?
				6.116	Does the contingency address a confidence value near 80%?
				6.20	Contingency
				6.201	Do the applied contingency rates appear reasonable for each major cost item?
				6.202	Does the overall contingency rate appear reasonable?
				6.203	
				6.204	
				7.00	Schedules
				7.10	Construction Schedule
				7.101	Are construction schedules clearly presented in the Feasibility Report?
				7.102	Does the schedule identify critical aspects of the construction?
				7.103	Are key milestones depicted?
				7.104	Does the construction schedule reflect reasonable logic of activities?
				7.105	Does the construction schedule indicate a likely critical path?
				7.106	Are all activities tied?
				7.107	Does the construction schedule consider crew sizes, numbers of crews, related productivity?
				7.108	Do construction schedules make distinction between single shift and double shift?
				7.109	Does the estimate and risk analysis reflect the schedule (i.e., overtime usage, numbers of crews, numbers of shifts, critical delivery aspects, concurrent activities, etc.)?
				7.110	Do construction schedules depict critical or time-sensitive orders or procurements?
				7.111	
				7.20	Project Schedule
				7.201	Does the Project Schedule in the Feasibility Report include all activities following completion of the Feasibility Report? i.e. review and approval, planning, engineering and design, advertising and award, construction, close-out and turn-over to sponsor.
				7.202	Does the project schedule clearly present dates to determine inflation based on escalation indexes? i.e. the activity beginning date or the activity mid-point.
				7.203	
				8.00	Total Project Cost Summary In Constant Dollars
				8.01	Is there a proper Total Project Cost Worksheet?
				8.02	Is the price level date shown and is it consistent with the estimate preparation date?
				8.03	Are the Civil Works Work Breakdown Codes (Feature Codes) shown in the Total Project

Y	N	N/P	N/A		Categories/Questions
					Cost Summary?
				8.04	Do the lands and damages cost (01 Feature) provided by Real Estate Division include contingencies?
				8.05	Are relocations (02 Feature) accurately separated and shown?
				8.06	Are Costs for cultural resource preservation (18 Feature) included?
				8.07	Is the basis of the cultural resource preservation costs noted?
				8.08	<i>Question Removed</i>
				8.09	<i>Question Removed</i>
				8.10	Is the basis of the 30 and 31 feature costs noted?
				8.11	Does the E&D clearly include costs for PM, P&E, E&D, ITR & VE, Contracting, reprographics, EDC, Planning during construction?
				8.12	Are reasonable percentages used to develop costs for Engineering and Design (30 Feature Code)?
				8.13	Are reasonable percentages used to develop costs for Construction Management (31 Feature Code)?
				8.14	Are contingencies separately shown for each Feature?
				8.15	
				9.00	Total Project Cost Inflated (using escalation indexes) To The Project Schedule
				9.01	Is the contingency allowance consistent with the total project cost in current dollars?
				9.02	Are the work breakdown codes (Feature Codes) shown in the inflated total project cost summary?
				9.03	Are all features and elements inflated through the project schedule?
				9.04	Are the escalation dates shown for each inflated feature?
				9.05	Are the escalation dates consistent with the project schedule?
				9.06	Are inflated total project costs based on price indexes from the current CWISS ER 1110-2-1304?
				9.07	Are inflation percentage rates shown for each feature?
				9.08	Are inflation percentages calculated correctly?
				9.09	Does the inflated total project cost include any escalation beyond CWISS guidance based on market research?
				9.10	Does the feasibility report present the basis and rationale for inflating the project cost using something other than CWISS guidance?
				9.11	<u>Section 902 Limit ONLY</u> ; If lands and damages are inflated, is the escalation for inflation based on the Consumer Price Index? (ref. ER 1105-2-100, Determining Section 902 Limit)
				9.12	
				10.00	Federal And Non-Federal Costs
				10.01	Are the Federal and non-Federal cost share percentages shown?
				10.02	<i>Question Removed</i>
				10.03	Is the project cost share percent consistent with the Feasibility Cost Sharing Agreement?
				10.04	If applicable, is the cost/value of non-Federal in-kind services shown?
				10.05	Are cost shares calculated correctly?
				10.06	

Y	N	N/P	N/A		Categories/Questions