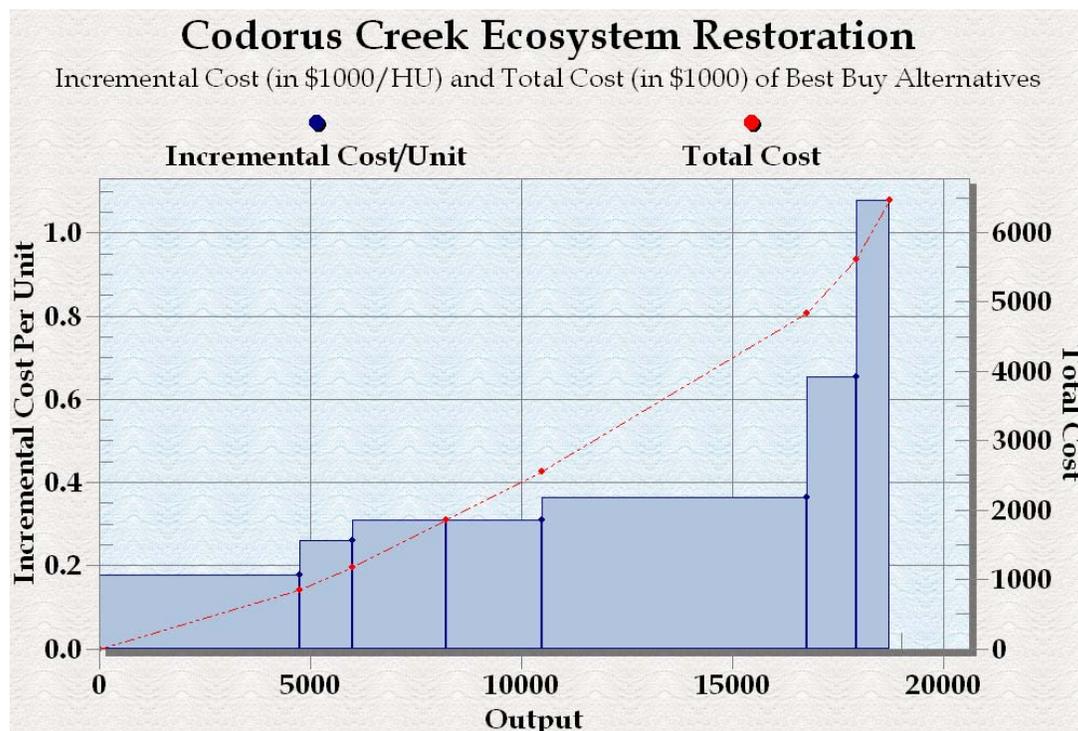




# IWR Planning Suite

### Description

The Institute for Water Resources (IWR) Planning Suite decision support software assists in formulating and comparing alternative water resources plans. It can assist with plan formulation by combining solutions to planning problems and calculating the additive effects of each combination, or “plan.” It can also assist with plan comparison by conducting cost effectiveness and incremental cost analyses (CE/ICA), procedures required for U.S. Army Corps of Engineers ecosystem restoration projects that identify the plans which are the best financial investments, and by displaying the effects of each plan on a range of decision variables. The system, using management measures and their characteristics as defined by planners, formulates alternative combinations of up to 52 solutions (each with up to 20 scales) and compares their effects on any number of user-specified decision parameters. Derived parameters can be defined that are formulaic



combinations of other decision variables. Constraints can be set, specifying minimum and maximum acceptable values for each decision variable. A sensitivity function allows decision variable estimates to vary. “Plans of interest” can be identified and displayed throughout the analyses regardless of cost effectiveness. Automated editing enables the user to account for nonadditive plan effects. Multiple planning sets can be examined from a single set of input data. Planning sets may differ as to what decision variables are included in the cost effectiveness analyses, what solutions are included, what sensitivity values are used, what constraints are applied, what plans of interest are included, and whether automated edits are applied. The results from different planning sets can be

compared. A variety of graphing and reporting options are available. All graphs and data in an IWR Planning Suite file are directly exportable to other programs to assist with reporting. To speed data entry, data may be imported from Excel spreadsheets. IWR Planning Suite comes with an on-screen help system which provides instruction for all forms and functions in the program. An example IWR Planning Suite graph is shown in the figure, displaying the incremental cost per unit of output of “best buy” ecosystem restoration plans resulting from incremental cost analysis, as well as their total costs.

**Benefits** IWR Planning Suite software can reduce the time and costs for Corps project planning. It facilitates the planning process by helping planners identify the cost effective alternatives and the incremental costs associated with varied levels of expenditures. It helps to assure that the Federal government and taxpayers are at least getting the most output for the least cost. Ultimately, the software’s CE/ICA capability assists in making better decisions regarding efficient investments, particularly for ecosystem restoration projects.

**Status** IWR Planning Suite version 1.05 is presently available for use. Research continues to improve and enhance model capabilities and periodic model upgrades are anticipated, such as an “Annualizer” module that annualizes costs and outputs based on user-provided implementation costs, discount rate, periodic O&M costs, period of analysis, benefits streams, ecological response rates, etc.

**Distribution Source(s)** IWR Planning Suite software and User’s Guide may be downloaded from the IWR-Plan Web site at <http://www.pmcl.com/iwrplan/>

**Available Documentation** IWR Planning Suite documentation includes a user’s guide, student tutorials, and a series of instructional and background PowerPoint presentations, as well as a number of conference abstracts and presentations. Model certification in compliance with the requirements of the Planning Model Improvement Program (PMIP) is currently in progress.

**Available Training** IWR Planning Suite training has been delivered to USACE Galveston District, Headquarters CECW, and ASA (CW) during FY 2007. Training for USACE Northwestern Division is scheduled for FY 2008. Additional training can be arranged on a District or regional basis upon request on a reimbursable basis. Costs vary based on client needs.

**Available Support** Application support can be obtained by contacting Leigh Skaggs at CEIWR-GW.

**Application** A list of District users can be obtained by contacting Leigh Skaggs, CEIWR-GW. The software has been used by District planners (including plan formulators, economists, biologists) nationwide. Notable projects for which IWR Planning Suite has been employed include the Comprehensive Everglades Restoration Plan, Upper Mississippi River Environmental Management Program, Coastal Louisiana projects, several Salt River, Arizona ecosystem restoration projects, and Puget Sound, Washington ecosystem restoration projects. IWR Planning Suite was instrumental in providing information to assist in plan selection for three large CERP projects authorized in WRDA 2007 at a cost of over \$1.8 billion: Indian River Lagoon – South, Picayune Strand, and Site 1 Impoundment Project.

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**Partners** Software beta testers from USACE Chicago, Rock Island, Philadelphia, and Jacksonville Districts.