Contract Report HL-94-1 Ajoril 1994



US Army Corps of Engineers Waterways Experiment Station



Improvement of Operations and Management Techniques Research Program

Corps of Engineers Operations and Maintenance Budget Decision Support System (COMB_DSS): System Concept, Design, and Prototype Evaluation Volume II: Appendixes B Through G

by Craig A. Strus, Russ E. Robinson Planning and Management Consultants, Limited

Richard M. Males RMM Technical Services, Inc.

Michael R. Walsh U.S. Army Engineer Institute for Water Resources

Connie L. Raaymakers, Edward J. Japel U.S. Army Construction Engineering Research Laboratory

	_					and the second s
	-	-	-		and the local division of the local division	
-	-	-	-			
		-	-			-
_		-	-			
The statement of the st	-	-	and the second s	and the second se		
-		_	-	ACCRET AND ADDRESS OF		
-		-		-	Concession in the local division of the loca	The second value of the se
-	-	_		_		
-		-		-		
-	-	_	_	-		
and the second se		_		-		
_		_			-	

Approved For Public Release; Distribution Is Unlimited





Prepared for Headquarters, U.S. Army Corps of Engineers

The contents of this report are not to be used for advertising, publication, or promotional purposes. Citation of trade names does not constitute an official endorsement or approval of the use of such commercial products.



,

٠

Improvement of Operations and Management Techniques Research Program Contract Report HL-94-1 April 1994

Corps of Engineers Operations and Maintenance Budget Decision Support System (COMB_DSS): System Concept, Design, and Prototype Evaluation Volume II: Appendixes B Through G

by Craig A. Strus, Russ E. Robinson

Planning and Management Consultants, Limited Route 9, Box 15 (Highway 51 South) PO Box 1316 Carbondale, IL 62903

Richard M. Males

RMM Technical Services, Inc. 3319 Eastside Avenue Cincinnati, OH 45208

Michael R. Walsh

U.S. Army Engineer Institute for Water Resources Casey Building, #2594 Fort Belvoir, VA 22060-5586

Connie L. Raaymakers, Edward J. Japel

U.S. Army Construction Engineering Research Laboratory PO Box 9005 Champaign, IL 61826-9005

Final report

Approved for public release; distribution is unlimited

Prepared for U.S. Army Corps of Engineers Washington, DC 20314-1000

Under IOMT Work Unit 32717

Monitored by U.S. Army Engineer Waterways Experiment Station 3909 Halls Ferry Road, Vicksburg, MS 39180-6199



Waterways Experiment Station Cataloging-in-Publication Data

Corps of Engineers Operations and Maintenance Budget Decision Support System (COMB_DSS) : system concept, design, and prototype evaluation / by Craig A Strus ... [et al.] ; prepared for U.S. Army Corps of Engineers ; monitored by U.S. Army Engineer Waterways Experiment Station.

2 v. : ill. ; 28 cm. — (Contract report ; HL-94-1) Includes bibliographical references.

1. Decision support systems — Evaluation. 2. United States. Army. Corps of Engineers — Appropriations and expendatures — Automation. 3. COMB_DSS (Information retrieval system) I. Strus, Craig A. II. United States. Army. Corps of Engineers. III. U.S. Army Engineer Waterways Experiment Station. IV. Improvement of Operations and Management Techniques Research Program. V. Series: Contract report (U.S. Army Engineer Waterways Experiment Station) ; HL-94-1. TA7 W34c no.HL-94-1

Appendix B Micro-ABS/ Mainframe ABS Data Dictionary and Reports

Acces	sion For	
NTIS	GEA&I	e
DIIC	TAB	
Unsale	ounced	
JUEL	cleation.	
B		
Distr	Saticn/	
ÉT:	lability	Cedes
	Avail 80	d/or
Dist	Specia	1
0.1		
r ·		
		- 3

Appendix B Micro-ABS/Mainframe ABS Data Dictionary and Reports

Micro-ABS/Mainframe ABS Data Dictionary

Following is a complete list of all data elements (fields) contained in the nine micro-ABS database files. A field name may be up to ten characters long and is of type character, numeric, date, logical, or memo. Lengths for each field are also supplied, as well as any decimal places for numeric fields. Fields that are not numeric will always have a DEC length of zero.

Filename	:	CATFEAT.DBF
Memo File?	:	No
Last Update	:	09/21/89
Records	:	120

Field	<u>Name</u>	<u>Type</u>	Len	Dec
001	CATCODE	Character	3	ō
002	CATDESC	Character	70	0
003	FEATCODE	Character	5	0
004	FEATCAT	Character	12	0
005	FEATDESC	Character	36	0

Total Record Length: 127 Bytes

Filename	:	CATEXC.DBF
Memo File?	:	No
Last Update	:	03/02/89
Records	:	25
Records	:	25

<u>Field</u>	<u>Name</u>	<u>Type</u>	<u>Len</u>	Dec
001	CATCODE	Character	3	0

Record Length: 4 Bytes

Filename	:	CE_COST.DBF
Memo File?	:	No
Last Update	:	05/07/91
Records	:	1

<u>Field</u>	<u>Name</u>	<u>Type</u>	<u>Len</u>	<u>Dec</u>
001	YEAR	Numeric	2	0
002	CWIS	Numeric	5	0
003	FUNCID	Numeric	4	0
004	CE_FIELD	Character	10	0
005	BREAK_FLD	Character	10	0
006	BREAK_COST	Numeric	8	0

Record Length: 40 Bytes

Filename	:	NAV_DET.DBF
Memo File?	:	No
Last Update	:	05/20/91
Records	;	4

Field	<u>Name</u>	Туре	Len	Dec
001	CWIS	Numeric	5	0
002	REACH	Numeric	4	Ō
003	REACHTYPE	Character	1	0
004	REACHDESC	Character	64	Ó
005	HISTDEPTH	Numeric	4	0
006	HISTWIDTH	Numeric	4	0
007	BYDEPTH	Numeric	4	0
800	BYWIDTH	Numeric	4	0
009	PLANDEPTH	Numeric	4	0
010	PLANWIDTH	Numeric	4	0
011	AUTHDEPTH	Numeric	4	0
012	AUTHWIDTH	Numeric	4	0
013	TONNAGE	Numeric	8	0
014	SELFPROPEL	Numeric	8	0
015	NONSELFPRO	Numeric	8	0
016	SLIPS .	Numeric	8	0
017	PASSENGERS	Numeric	8	0
018	LAUNCHINGS	Numeric	8	0
019	TONMILES	Numeric	8	0
020	CRAFTVALUE	Numeric	8	0
021	INTEREST	Character	1	0
022	POLITICIAN	Character	64	0
023	REMARKS	Character	64	0
024	DRAFT	Numeric	4	0
025	TRIPS	Numeric	8	0
026	CUYDREDBY1	Numeric	8	0
027	CSTDREDBY1	Numeric	8	0
028	CUYDREDBY3	Numeric	8	0
029	CSTDREDBY3	Numeric	8	0
030	CUYDREDBY4	Numeric	8	0
031	CSTDREDBY4	Numeric	8	0
032	APPROP	Character	1	0
033	EROC	Character	2	0

Record Length: 363 Bytes

Appendix B Micro-ABS/Maintrame ABS Data Dictionary and Reports

•

Filename	:	NAV_PWW.DBF
Memo File?	:	No
Last Update	:	05/15/91
Records	:	4

<u>Field</u>	<u>Name</u>	<u>Type</u>	Len	Dec
001	CWIS	Numeric	5	0
002	REACH	Numeric	4	0
003	WWCODE	Numeric	4	0
004	PORTCODE1	Numeric	5	0
005	PORTCODE2	Numeric	5	0

Record Length: 24 Bytes

Filename	:	ORGFILE.DBF
Memo File?	:	No
Last Update	:	05/06/91
Records	:	2

- -

_ _

Field	<u>Name</u>	Type	Len	Dec
001	ORGCODE	Character	4	ō
002	ORGDESC	Character	36	Ō
003	PCNUM	Numeric	2	Õ
004	NUMREC	Numeric	4	Ō

Record Length: 47 Bytes

Filename	:	PRJFILE.DBF
Memo File?	:	No
Last Update	:	10/02/91
Records	:	47

<u>Field</u>	<u>Name</u>	Туре	Len	Dec
001	CWIS	Numeric	5	0
002	PRJNAME	Character	48	0
003	STATE	Character	2	0
004	PRJCLASS	Character	2	0
005	EROC	Character	3	0
006	SURVEYS	Numeric	4	0
007	TENYRAVE	Numeric	8	0
008	APPROP	Character	1	0
009	WETSLIPS	Numeric	4	0
010	DRYSTORE	Numeric	4	0
011	INTERCODE	Character	1	0
012	POLITICIAN	Character	40	0

Record Length: 123 Bytes

: STATEFIL DBF Filename Memo File? : No Last Update : 03/25/87 Records : 55 Field Name Dec Туре Len 001 STATE 2 Character 0 002 **STATEDESC** Character 14 0 Record Length: 17 Bytes Filename : WRKFILE.DBF Memo File? : No Last Update : 10/01/91 Records : 66 **Field** Name **Type** <u>Dec</u> Len 001 **CWIS** Numeric 5 0 002 **FUNCID** Numeric 4 0 003 PRJRANK Numeric 4 0 004 PRJNAME Character 48 0 005 **FUNDLEVEL** Character 1 0 006 CATCODE Character 3 0 007 TOTALCOST Numeric 8 0 008 ORGCODE Character 4 0 009 DESCWORK Character 56 0 010 COFMARID Numeric 6 0 011 **FUNDARG1** Character 64 0 012 **FUNDARG2** Character 64 0 013 FEATCODE Character 5 0 014 CONTRACTS Numeric 8 0 015 DIRLABOR Numeric 8 0 016 OTHER Numeric 8 0 017 EDCONTRACT Numeric 8 0 018 **EDCORPS** Numeric 8 0 019 SACONTRACT Numeric 8 0 020 SACORPS Numeric 8 0 021 DREDCUYD Numeric 8 0 022 TYPEDRED Character 2 0 023 MAINTCSTSV 8 Numeric 0 024 VALCONTCTR Numeric 8 0 025 CUMRCNSTCD Character 1 0 026 DISTRANK Numeric 4 0 027 OUTMEASURE Numeric 8 0 028 YEAR 2 Numeric 0 029 REACH Numeric 4 0 030 INSPECCODE Character 7 Ø 031 **ADPWRKCODE** Character 15 0 032 ADVDATE Date 8 0 033 BIDDATE Date 8 0 034 OPERACCT Character 1 0

Appendix B Micro-ABS/Mainframe ABS Data Dictionary and Reports

B5

035	DISTFLAG	Numeric	2	0
036	UPFLAG	Character	1	0
037	NUMFUND	Numeric	1	0
038	APPROP	Character	1	0
039	EROC	Character	2	0
003			-	

Record Length: 420 Bytes

Following is a more detailed description of individual data elements (fields). Data <u>must</u> be entered in fields that are denoted as "mandatory." The following field descriptions are generic to explain fields in mainframe ABS, as well as the abbreviated 1 - 10 character field names as listed above for micro-ABS.

Project Level Data Element Definitions

The following alphabetized definitions define data elements used at the project level. References to marginal navigation projects mean those projects whose work functions must be placed in funding Level 3 or 4.

• BENEFIT-COST RATIO - The benefit-cost ratio for the project. It will appear on the WCC computer with the decimal point (e.g., 3.1).

• COMMERCIAL TONNAGE ON NAVIGATION REACH (derived from Waterborne Commerce Statistics database) - A decimal number representing the amount of commercial tonnage - in thousands of dollars that moved within the navigation reach within the prior calendar year i.e., if the navigation reach is to be dredged in fiscal year 1991, the prior calendar year for reporting will be 1987.

• CWIS (mandatory for all projects) - 5 digit CWIS number for the project.

• NAVIGATION REACH INTEREST CODE (required for shallow draft and minor draft navigation reaches only) - A one letter code indicating special interest groups concerned with the maintenance of the reach:

CODE TITLE

- M Military Installation
- C Coast Guard Station
- P Political Interest

NUMBER OF PASSENGERS CARRIED ON NAVIGATION

REACH (derived from Waterborne Commerce Statistics database) - An 8 digit integer representing the number of passengers carried by vessels moving on the navigation reach within the prior calendar year i.e., if the navigation reach is to be dredged in fiscal year 1991, the prior calendar year for reporting will be 1987.

• NUMBER OF PROJECT CONDITION SURVEYS (mandatory for project condition survey projects) - The number of sediment condition surveys to be conducted within the budget year as part of the project condition surveys activity. Number of project condition surveys is entered as an integer under both systems.

• POLITICIANS INTERESTED IN NAVIGATION REACH (required for shallow draft and minor deep draft navigation reaches only if interest code is "P") - A 64 character entry indicating the names of Senators, Congressmen and other elected officials interested in the maintenance of the navigation reach.

• **PROJECT NAME** (mandatory for new navigation projects) - the authorized project name for the project.

• STATE (mandatory for new navigation projects) - 2 letter state code representing the state in which the project is located.

• TEN YEAR AVERAGE MAINTENANCE COST PER TON (mandatory for marginal navigation projects) - the ten-year average maintenance cost per ton for the project. It will appear on the WCC computer with the decimal point (e.g., 1.5).

Work Function Level Definitions

Definitions for work function data required for budget submission.

• ADP WORK CODE (optional) - The COEMIS ADP Work-code for the activity represented by the work function.

• CATEGORY CODE (mandatory) - the 3-letter code corresponding to the category of work to which the function belongs. Categories of work are determined from the Performance Level Matrix published in the budget EC. The Performance Matrix also lists the 3-letter codes assigned to each category of work.

• COFMAR ID - The Catalog of Maintenance and Repair (COFMAR) identifier if the work function has been identified by CECA-OM as being part of COFMAR during a previous budget cycle. It is comprised of the last two digits of the budget year in which the work function became part of COFMAR concatenated with the WORK FUNCTION ID of the work function.

• CONTINUING CONTRACT - For budget year work functions involving contracts which will extend beyond the BY, enter the dollar value (in thousands of dollars) of only that portion of the contract which extends into BY + 1, BY +2, etc. For example, a two year contract is to be awarded mid-BY at an estimated cost of \$200,000. That portion which extends into the out-years is \$150,000. The continuing cost, therefore, is \$150,000.

• CONTRACT ADVERTISEMENT DATE (mandatory for all prior budget year work functions with contract costs greater than \$100,000) -The data that the contract will be advertised in the Commerce Business Daily.

• CONTRACT BID OPENING DATE (mandatory for all prior budget year work functions with contract costs greater than \$100,000) - The date that bids will be accepted for the contract.

• CONTRACT COST - The cost estimate for work performed by non-Corps Government agencies or contractors. This includes the cost of contractor-furnished material, plant and supplies. This entry will not contain any supervision and administration or engineering and design costs for work performed by non-Corps entities.

• CONTRACT ENGINEERING AND DESIGN COSTS - The cost estimate for any engineering and design work (normally entered under feature cost 34) performed by non-Corps government agencies or by contract.

• CONTRACT SUPERVISION AND ADMINISTRATION COSTS -The cost estimate for any supervision and administration work (normally entered under feature cost codes 19 and 35) performed by non-Corps agencies or by contract.

• CONSTRAINT (mandatory for FUNDING LEVEL 9 COFMAR work functions) - Some work functions that are part of the Catalog of Maintenance and Repair (COFMAR) and that have been placed in funding Level 9 have certain legal or environmental restrictions preventing their being performed. Enter one of the following codes to indicate whether or not a constraint exists:

- Y Constraints exist
- N Constraints do not exist

• CORPS ENGINEERING AND DESIGN COSTS - The cost estimate for any engineering and design work (normally entered under feature cost codes 34) performed by Corps personnel.

• CORPS SUPERVISION AND ADMINISTRATION COSTS - The cost estimate for any supervision and administration work (normally entered under feature cost codes 19, 35, and 16.2) performed by Corps personnel.

• CUBIC YARDS DREDGED (mandatory for the dredging work functions with categories D01 and F05 categories) - The estimated number of cubic yards of material that will be dredged on the navigation reach represented by the work function.

• CWIS number (mandatory) - the CWIS number of the project in which the work function is to be performed. This CWIS number must exist in the project file on the database.

• DESCRIPTION OF WORK FUNCTION (mandatory) - A concise description of the work to be accomplished in the work function. This should not be a reiteration of the work function category description. Rather, it should provide, whenever possible, information on the location and/or quantity of work. Examples of good descriptions are as follows:

Major structural repairs to lower mitergate-Meldahl Operate Meldahl lock 3 shifts 24 hrs./day, 7 days/week

Navigation project work function descriptions should identify the segment to which the work function belongs. Engineering and design work for work to be accomplished in the fiscal year following budget year should be so indicated in the DESCRIPTION OF WORK FUNCTION FIELD e.g., "P&S for dredging Anahuac Channel in BY + 1". The cost breakout for this work will be entered under CORPS E&D or CONTRACT E&D.

• DIRECT LABOR COSTS - The cost estimate for all Corps hired labor costs paid from project funds with the exception of District overhead costs for supervision and administration or engineering and design. It includes technical indirect labor costs chargeable to a specific feature cost code (except feature cost codes 19, 35, and 34).

• FEATURE COST CODE (mandatory) - The feature cost code corresponding to the work function category code (see the Performance Level Matrix). This is the feature cost code which best classifies the work function. Feature cost codes 19, 35, and 34 are not allowed in this block.

• FUNDING ARGUMENT (optional for prior year and budget year work functions with categories E06, E10, E13, E20, F01, F02, H01, H03, M02, M02, N01, P01, S02, S04, X01, X02, X03, X04, and X05) - Two 64 character entries explaining the reason for funding the work function. For Level 1 work functions, these entries will consist of a list of the various work items or tasks that comprise the work function. For lower level work functions, these entries will consist of a concise argument that either explains the adverse impacts of not funding the work function or the added benefits of funding it. The funding argument should parallel the rationale contained in the Performance Level Matrix, but contain specific descriptions of any impacts or benefits.

• FUNDING LEVEL (mandatory) - A one-position code which represents the funding level in which the work function is to be placed. To determine what funding level is appropriate, refer to the Performance Level Matrix in the budget EC and correspondence from CECW-OM. • INSPECTION CODE (mandatory for budget year work functions with categories E06 or E20) - A seven character code giving information about periodic inspections. The structure is a follows:

<u>CODE</u>	EXPLANATION
B	Bridge Structure
0	Other Type of Structure
H	High Travel Costs
L	Low Travel Costs
D	De-watering of Lock Required
Ν	No De-watering Required
	Last two digits of last year
	that structure was inspected
	last two digits of year of
	inspection prior to last
	inspection
	CODE B O H L D N

• MAINTENANCE COST SAVINGS - For work functions in funding Levels 3 and 4 which involve significant maintenance activity, enter the estimated dollar increase (in thousands of dollars) of the real (non-inflated) cost of implementing a deferrable maintenance function if the function is delayed for 1 year. For example, a paved road with small cracks that are left unattended for a year may develop potholes after a freeze-thaw cycle. The real cost of repair would increase because of the accelerated deterioration.

• NAVIGATION REACH IDENTIFIER - a 4-digit code uniquely identifying the navigation reach on which the dredging activity represented by the work function is to be performed. A record with this same navigation reach identifier should also be present in the navigation information file.

• NUMBER OF EMPLOYEES EXAMINED (mandatory for budget year work functions with category S05) - The number of Occupational Safety and Health Act medical examinations to be performed if the work function is funded.

• NUMBER OF PROJECTS INSPECTED (mandatory for budget year work functions with category E13) - The number of non-federal flood control projects to be inspected as part of the Inspection of Completed Works or Inspection of Non-Federal Levees program if the work function is funded. This entry is made under OUTPUT MEASURE.

• NUMBER OF REAL ESTATE INSPECTIONS (mandatory for budget year work functions with category P01) - The number of real estate inspections to be performed if the work function is funded. This entry is made under OUTPUT MEASURE.

• ORGANIZATION CODE - An alphanumeric code corresponding to the District organizational element performing the work function. This code is for the District's use and is not required by CECW-OM. Therefore, if you

want to use this data element you may devise any system of codes which meets your needs. We recommend use of this data element for keeping track of each organization element's portion of the O&M, General budget.

• OTHER COSTS - The costs estimate for materials and supplies and all other expenses needed to support the in-house effort except those associated with the pay of government personnel. It includes any nonhired labor technical indirect costs chargeable to a specific feature cost code (except feature cost codes 19, 35, and 34).

• **PROJECT NAME** (mandatory) - The authorized project name of the project in which the work function is to be performed. Project name entries do not have to agree on work function records within the same project.

• RANK IN PROJECT (mandatory) - The priority assigned to the work function within the project to which it belongs.

• TOTAL COST OF WORK FUNCTION (mandatory) - The total cost of the work function.

• TYPE OR DREDGE (mandatory for the dredging work functions with categories D01 and F05) - A two letter code indicating the class of dredge to be used on the dredging activity represented by the work function:

CODE TYPE OF DREDGE

- HS Corps Hopper dredge, small class (less than 2,000 cy)
- HM Corps Hopper dredge, medium class (2,000-6,000 cy)
- HL Corps Hopper dredge, large class (over 6,000 cy)
- SC Corps sidecaster dredge
- AL All other Corps dredges
- CA Non-Hopper contract dredge
- CS Contract Hopper dredge, small class (less than 2,000 cy)
- CM Contract Hopper dredge, medium class (2,000-6,000 cy)
- CL Contract Hopper dredge, large class (over 6,000 cy)

• WORK FUNCTION ID (mandatory) - A 1 to 4 digit number that uniquely identifies the work function within the project. This entry cannot be changed after the work function record has been entered into the computer.

• YEAR (mandatory) - A two digit integer for the last two digits of the fiscal year the work function is being funded or submitted as part of the

budget. The database will contain three fiscal years: the budget year (BY), the prior budget year (BY - 1) and the current year (BY - 2).

Micro-ABS Reports

Table B1 is a list of the available reports on the Micro-ABS system. These reports are briefly described in this appendix, and when applicable, a comparison to a comparable WCC report will be made. See Table B2 for a list and description of WCC mainframe reports.

TABLE B1LIST OF MICRO-ABS REPORTS

MICRO-ABS REPORTS

- Abbreviated Ranking List
- Cumulative Work Function Report
- Detailed Ranking List
- District Organizational Summary Report
- Navigation Detail Report
- Navigation Screen Report
- Navigation Waterway and Port Code Report
- Project Historical Cost Report
- Project Screen Report
- Project Summary Report
- Tabulation I Report
- Tabulation II Report
- Work Allowance Project Summary Report
- Work Function Screen Report

• Abbreviated Rankin * List - This report prints two line per work function selected on micro-ABS, supplying organization code, District rank, cost and cumulative cost, CWIS number, project rank, work function id, category and feature cost codes, funding level, project name and work function description.

• Cumulative Work Function Report - This is a comprehensive report, and can be very large. Since each work function spans seven lines, only about five work functions will fit on each page. Care should be used to confine it to a manageable length if it is to be printed on the desk top printer.

Information in the report includes project category, class, name, state and CWIS number, the District rank, the work function cost, cost breakout, feature cost and category codes, output measure and inspection code, description, arguments and cumulative costs.

This report can be run for a single project or for all the projects, and may select only operations, only maintenance or both operations and maintenance.

• Detailed Ranking List - This is a "nine line per work function" report, with organization code and project name, District rank, cost and cumulative cost, CWIS and function id, project rank, funding level, category, description and arguments. You may report on all projects or a single project, and the report may be sorted by District rank only or by District rank within organization code.

• District Organizational Summary Report - This report is only on micro-ABS; it is not available on the WCC mainframe. it was developed in response to requests for a report which allowed display of the direct labor breakouts in the modify procedures. In organization code and CWIS order, all costs are displayed for BY -2, BY -1, and the first three levels of the budget year. The report can be limited to a single project, and only operations or maintenance activities may be chosen.

• Navigation Detail Report - This is the most comprehensive of the navigation reports. It delivers one or two pages per navigation reach. All dimensions, waterborne commerce statistics and other usage information, interested parties, dredging and cost history available are presented in a single record. This report may be run for a single project or for all.

• Navigation Screen Report - This is the form designed to aid input in the "modify" system. On one page per reach, it presents all the information (waterway code, port codes, etc.) required by the micro-ABS system for each navigation reach. It may be run for all projects or for only one.

• Navigation Waterway and Port Code Report - This is a very short 1 page or less report (for most Districts) which prints waterway and port codes for all reaches in reach number within CWIS order. It can be selected for all projects or for only one.

• Project Historical Cost Report - This report presents, generally in two pages per project, information by feature cost code for the two years prior to the budget year and for the first three levels of the budget year. It differs from the mainframe version in that the micro-ABS report does not display actual expenditure data from the most recent available year, while the mainframe report does include this data. This report may be run for a single project, or for all projects.

• Project Screen Report - This report presents most project level data (CWIS, state, project class, surveys, bc-ratio and ten year cost average) in a "three projects per page" format. Once the project screen report is chosen from the menu, the numerical range of CWIS numbers is shown, and you may select any range for the report. You may not, however, select individual projects (except by specifying a narrow range) or more than one range per report.

• Project Summary Report - This report prints out one or two pages per project. Data is in feature cost code order, and costs are collected in four columns; contract costs, other costs, personnel and total costs. It may be printed for all projects, a single project or any consecutive range of projects.

• Tabulation I Report - This is a "one page per project" report which gives you a preview of the items and amounts represented in your work allowance. It is the same as the report of the same name on the WCC mainframe. The micro-ABS version serves a very specific function. Before BY -1 is uploaded to the WCC mainframe, this report should be run to ensure that the year's data is correct.

• Tabulation II Report - This report is very similar to the Tab II report run off the WCC mainframe. It displays the District's work allowance "100K list" and should be run by the District prior to a final upload of BY -1 data.

• Work Allowance Project Summary Report - This is a brief "several projects per page" report, useful along with the Tab I report, for checking the projected work allowance data for BY -1 before upload. It is presented in Project Category Class / Subclass Code order, with one line (matching the bottom line on Tab I) per project and totals. No option exists to limit its size, but this should not be a problem, since the entire report would seldom exceed five or six pages.

It can be requested for a single project or for all projects. It can be sorted by District rank alone or by District rank within organization code. This option, along with the large number of data elements presented in a relatively short report, make it a valuable summary tool for project managers or organizational components.

• Work Function Screen Report - This is the report designed to accompany the work function "modify" procedure screens. On one page

per work function, it displays all the work function level information which may be changed in the modify process. It may be sorted in any one of four (District rank, CWIS and project rank, category then District, rank and organization) ways to suit the purpose for which it is intended and can be run for any consecutive range of CWIS numbers.

WCC Mainframe Standard Reports

The standard reports for the Operation and Maintenance contain information retrieved from the databases that were previously created. These reports can be used during the budget cycle to determine the impact of prioritization by the District, Division or HQUSACE. All these reports may be generated for a specific range of headquarter's ranks. Division may also select data from just one District when generating the report. Following is a brief description of each report. Table B2 is a complete list of the following reports.

• Abbreviated Ranking List - This report is similar to the Detailed Ranking list. However, it does not show the work function description funding argument.

• Capability Report - This report shows all work functions that have qualified for inclusion into Corps wide capability program. The total amount shown on this report must agree with the Division Engineer's testimony before Congress concerning the Division's capability in the area of Operation and Maintenance.

• COFMAR Detail Report - This report shows the individual work functions that are included in the Catalog of Maintenance and Repair.

• Correction Report - After the Division office has made adjustments to the District budget data, this report will show what adjustments have been made, when they were made, the type of correction and when the correction was applied to the Division database.

• Detailed Ranking List - This report shows the work function description and funding argument in OCE rank order. Included in this report are the project name, CWIS number, rank in project Division ranks, the work function category, and work function costs. Also shown is the cumulative cost of work at each OCE rank. You may also generate separate ranking lists for each work function category. This report is useful for updating and checking Division or District rank assignments.

• District Organizational Summary Report - This report summarizes contract costs, direct labor costs, engineering and design costs, supervision and administration costs and other costs by project and by organizational element code. This report would be useful only if the District decided to enter organization codes with its budget submission data.

TABLE B2 LIST OF WCC MAINFRAME REPORTS

WCC MAINFRAME REPORTS

- Abbreviated Ranking List
- Capability Report
- COFMAR Detail Report
- Correction Report
- Detailed Ranking List
- District Organizational Summary Report
- Division OCE Correction Report
- Dredging Summary Report
- Estimated Expenditure Report
- Feature Cost Summary Report
- Justification of Estimates Report
- Navigation Reach Information Report
- Project Historical Cost Summary Report
- Project Summary Report
- Work Allowance Contract Priority Report
- Work Allowance Summary Report
- Work Function Category Summary Report
- Work Function Cumulative Report
- Work Function Detail Report

• Division OCE Correction Report - During the review process conducted by the Division office and by HQUSACE, certain work functions may be flagged for correction. This report will display information about these work functions and show what will be corrected.

• Dredging Summary Report - This report summarizes cubic yards dredged and the cost of dredging for work functions within a specified range of OCE ranks. It is useful for determining the makeup of a dredging program. • Estimated Expenditure Report - (Tabulation I) This report is run during the preparation of the work allowances. It shows the estimated or approved initial work allowances for each project. Costs are broken down into ongoing contract costs, new contracts under \$100,000, hired labor hopper dredging costs, hired labor costs for non-hopper dredges, all other hired labor costs, and all other costs. Descriptions and Division rank assignments for ongoing contracts are displayed for each project.

• Feature Cost Summary Report - This report summarizes contract costs, personnel costs, other costs and total cost for all work functions within a specified range of OCE ranks. It is useful for determining the makeup of various programs, such ass recreation or dredging.

• Justification of Estimates Report - All totals shown for other report do not correspond to Budget Authority because they do not include credits and income. This report shows total budget authority for each project. It also shows subtotals for each project category and class. Use this report when preparing your Justification of Estimate sheets.

• Navigation Reach Information Report - This program will generate one to three reports which will show all information pertaining to each navigation reach in the database file.

• Project Historical Cost Summary Report - This report summarizes actual expenditures from the prior year (BY -3), estimated obligations from the current year (BY -2), estimated obligations from the prior budget year (BY -1) and estimated obligations from the first three funding levels of the budget year. It is often used for comparing budget cost estimates with historical costs.

• Project Summary Report - This report summarizes feature cost data for each project by feature cost code. Also displayed is data related to the project such as project class, project category, waterway and port codes. Knowing the OCE ranks in which you will be funded, will allow this report to determine the impact that the funding level will have on each of your projects.

• Work Allowance Contract Priority Report - This report is run during the preparation of the work allowances. It lists data on work functions for contracts greater than \$100,000 in Division rank priority. It is similar to the Abbreviated Ranking List.

• Work Allowance Summary Report - This report is run by District and Division offices to view their approved initial work allowances for each project. It is similar to the Justification of Estimate sheet report.

• Work Function Category Summary Report - This report summarizes contract cost, personnel cost, other costs and total cost for all work functions within a specified range of OCE ranks. It is useful if you want to determine the impact that funding at a certain level will have on major programs in your District or Division.

• Work Function Cumulative Report - This report shows the descriptions for each work function in OCE rank order within each project. Also shown are the Division and District ranks, the work function category, the cost of each work function and the cumulative cost of all work functions within a project. With this report, you can determine in which funding levels certain work functions were placed. You can also determine which work functions were included in budget after the Division or OCE has assigned its final rankings.

• Work Function Detail Report - Each page of this report shows all the information for a given work function that is stored in the database. Work functions are shown in OCE rank order. At the bottom of the report, the feature cost breakout for the work function is shown. This report can serve as the hard copy by District and Division offices when they were assigning ranks to each work function. You also can print this report in four sort sequences.

Appendix C Minutes of Project Team Meetings and Technical Memos

Appendix C Minutes of Project Team Meetings and Technical Memos

mo to ABS File From: R. Males Date: 10/2/91 Re: examples, description of tables in ABS.RBF Tables in the Database DSSABS Table Columns Rows Usage catfeat 2 119 correspondence between category and fccd corresp. betw. project, category classes, titles fundlev , year type cross-reference cat_tit 5 91 class 3 33 correct 41 77 change records giving old/new info district 7 80 district code, ercc, program type, div dst names text description for dredge type code 2 dredge 9 feat tit fundIev text title for each FCCD (feature cost code) 2 102 fundlev code, year type cross-reference expenditure by FCCD, CWIS District in a year code lookup for interest code description 2 17 history 5 3769 interest 2 5 primary table for work function ranking info project info table (by district, cwis number) lookup table for text, sort order for segno ?? [shows prior to particular change - per NRW] 7377 omb92 31 projct 14 3 196 purpose rankhist 16 113 21 22 reason 82 text for each integer reascode year correspondence between year and year type 4 Note that category titles are in close correpondence with fccd titles, but are not exactly the same OMB92 - total cost does not appear to be sum of other costs. Funding level codes (from documentation, p.84) code year meaning 1 BY Minimum Funding Level Adequate Funding Level Normal and Customary Funding Level 2 BY -3 BY First Enhancement Funding Level 4 BY 5 BY Second Enhancement Funding Level 67 BY Used to denote major rehab. work BY "Deleted" Work Function prior F Funded Hired Labor Ó prior Ongoing Contract Contract over \$100k included in Division recommended program Contract over \$100k above Division recommended program prior R T prior п prior "Deleted" Work Function project class appears to be a code that may combine two c/c/s codes[e.g. MN, MP both 300] (but is usually one to one) TABLE: CATFEAT 1 category TEXT 3 2 fccd TEXT 5 correspondence between category and fccd category fccd 90 C01 D01 33.11

DO2 33.3 **E**01 02.4 07.53 202 E03 07.13 E04 07.11 E05 07.12 206 07.23 TABLE: CAT_TIT TEXT 1 category 2 cat_tit 3 TEXT 77 3 descrip req TEXT 1 4 argum_req TEXT 1 5 output_tit 35 TEXT lookup table given info about a category code (title, various switches) category cat tit descrip_ argum_re output tit NO1 LOCK OPERATIONS NN-**X01 DAM OPERATIONS** NN-X02 RESERVOIR OPERATIONS S09 EFFECIENCY REVIEW N N -YY-E12 WATER QUALITY ANALYSIS AND STUDIES E13 INSPECTION OF COMPLETED WORKS YY-N N Number of Projects Inspected SO7 ENERGY CONSERVATION REPORTS Y Y -S10 PROJECT MOBILIZATION PLANS ¥ ¥ -SO3 OSHA INSPECTIONS YY-POS TIMBER HARVEST X06 DAM MAINTENANCE YY -YY SO5 OSHA DEFICIENCIES AND MEDICAL EXAMS Y Y Number of Employees Examined TABLE: CLASS 1 projcls TEXT 2 2 catclass INTEGER 3 class TEXT 50 correspondence between project class, category class, and class title (category class codes are similar to those in Forcon for appropriation code C (O&M General) projcls catclass class --------EC. 520 CONTINUITY OF GOVERNMENT PREPAREDNESS 540 NATIONAL EMERGENCY FACILITIES 510 MOBILIZATION PREPAREDNESS 27 EP EW 530 EMERGENCY WATER PREPAREDNESS 220 FLOOD CONTROL - CHANNELS FC FF 212 MAJOR REHABILITATION OF FLOOD CONTROL RESERVOIRS 223 MAJOR REHAB. OF CHANNEL IMPROVEMENT PROJ. FG FH 213 COST SHARED RECR. DEVEL. - FLOOD CONTROL RESERV FI 221 INSPECTION OF NON-FEDERAL LEVEES TABLE: CORRECT 1 corrdate INTEGER 2 olddistrict TEXT 3 3 oldcwis INTEGER

INTEGER
INTEGER
TEXT 3
INTEGER
INTEGER
INTEGER
INTEGER
TEXT 3
INTEGER
TEXT 1
TEXT 1
TEXT 3
TEXT 3
TEXT 5
TEXT 5
INTEGER
INTEGER
CURRENCY
TEXT 2
TEXT 7
TEXT 56
TEXT 56
TEXT 64
TEXT 64
TEXT 64
TEXT 64
INTEGER
INTEGER
INTEGER

Appendix C Minutes of Project Team Meetings and Technical Memos

<

change reco	ada sivina					
	IEUR GIVIIG	old/new i	nfo			
COLLGGIE	olddistr o	ldcwis	oldyear	fundcid	newdia	itr newcwis
900725 CB2	1	63	92	305	CB2 CB2	63
900725 CB2	1	2440	92	305	CB2 CB2	2440
900725 CB2		7760	92	300	CB2	7760
900725 CB3	l	2700	92	385	CB3	2700
900725 CB3	l	11370	92	540	CB3	11370
900725 EB4	•	7090	92	50	EB4	7090
900726 CB2		6200	92	25	CB2	6200
900726 CB3		2560	92	445	CB3	2560
		research				
newyeet	News under d	Teascode	COFFEYPE	appiyoa	ce fundie	
92	305	10 D	EL	900810	-	1
92	65	10 D	EL	900810	-	ī
92	305	10 D	el	900810	-	1
92	300	10 D	el	900810	-	1
92	385	8 D	EL	900810	-	3
92	540	8 D	EL	900810	-	3
72	50	55 C	NG	900810	-	2
74	43	55 C	au HG	000010 200010	-	2
~~				200010		•
category ol	dcat fcc	d oldf	ccd divra	nk ds	trank t	otcost
- R1	0 -	24.1		11077	10550	\$0.00
- R1	0 -	24.1		11062	10510	\$0.00
- R1	0 -	24.1		11059	10505	\$0.00
- RI	0 - 7 -	24.1		11032	10600	\$0.00
- RU	· -	24 1	4	30052	35990	\$0.00
- R0	1 -	05.1		20546	21245	\$0.00
- NO	3 -	22.1		10897	10425	\$100.00
R10 R0	1 24.	05.1		28130	23050	\$0.00
					-	
Oldcost	CONTR	ACTS	diriador	01	ther	contred
\$50.00		\$0.00	SO .	00	\$0.00	\$0.00
\$250.00		\$0.00	\$0.	00	\$0.00	\$0.00
\$150.00		\$0.00	\$0.	00	\$0.00	\$0.00
\$30.00		\$0.00	\$0.	00	\$0.00	\$0.00
\$60.00		\$0.00	\$0.	00	\$0.00	\$0.00
\$400.00		\$0.00	\$0.	00	\$0.00	so.oo
\$84.00		515.00	\$ 32 -	00	630 00	
\$100.00				<u>^</u>	\$20.00	\$0.00
	e	\$0.00	\$80.	00	\$10.00	\$0.00 \$0.00
4107.00	\$	\$0.00 100.00	\$80. \$0.	00 00	\$20.00 \$10.00 \$0.00	\$0.00 \$0.00 \$0.00
corpsed	S	\$0.00 100.00	\$80. \$0. corpssa	00 00 to	\$10.00 \$10.00 \$0.00	\$0.00 \$0.00 \$0.00 \$0.00
corpsed	S contre	\$0.00 100.00	\$80. \$0. corpssa	00 00 to	\$20.00 \$10.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg
corpsed \$0.00	S. contra	\$0.00 100.00 50.00	\$80. \$0. corp ssa \$0.	00 00 00 00	\$20.00 \$10.00 \$0.00 ptdreg \$0.00	\$0.00 \$0.00 \$0.00 typdreg
corpsed \$0.00 \$0.00	S. contra	\$0.00 100.00 a \$0.00 \$0.00 \$0.00	\$80. \$0. corpssa \$0. \$0.	00 00 00 00 00	\$20.00 \$10.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg
corpsed \$0.00 \$0.00 \$0.00 \$0.00	\$: 	\$0.00 100.00 a \$0.00 \$0.00 \$0.00 \$0.00	\$80. \$0. corpssa 50. \$0. \$0.	00 00 00 00 00 00 00	\$20.00 \$10.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg
\$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	S: contri	\$0.00 100.00 a \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$80. 50. corpssa 50. \$0. \$0. \$0. \$0. \$0. \$0.	00 00 00 00 00 00 00 00 00 00	\$20.00 \$10.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg
corpsed \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	S: 	\$0.00 100.00 8 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$80. \$0. corpssa \$0. \$0. \$0. \$0. \$0. \$0. \$0. \$0. \$0.	00 00 00 00 00 00 00 00 00	\$20.00 \$10.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg
corpsed \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$ contr	\$0.00 100.00 50.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$80. \$0. corpssa \$0. \$0. \$0. \$0. \$0. \$0. \$0. \$17.	00 00 00 00 00 00 00 00 00 00	\$20.00 \$10.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg
corpsed \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	S. contro	\$0.00 100.00 50.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$80. \$0. \$0. \$0. \$0. \$0. \$0. \$0. \$	200 200 200 200 200 200 200 200 200 200	\$20.00 \$10.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg
Corpsed \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	S. 	\$0.00 100.00 a \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$80. \$0. \$0. \$0. \$0. \$0. \$0. \$0. \$0. \$17. \$10. \$7.	200 200 200 200 200 200 200 200 200 200	\$20.00 \$1.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg
corpsed \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	S 	\$0.00 100.00 a \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$80. \$0. \$0. \$0. \$0. \$0. \$0. \$0. \$	00 00 00 00 00 00 00 00 00 00 00 00 00	\$20.00 \$10.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg
Corpsed \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	S	\$0.00 100.00 a \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$80. \$0. \$0. \$0. \$0. \$0. \$0. \$0. \$	00 00 00 00 00 00 00 00 00 00 00 00 00	\$20.00 \$10.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg
Corpsed \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	S	\$0.00 100.00 a \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$80. \$0. \$0. \$0. \$0. \$0. \$0. \$0. \$	00 00 00 00 00 00 00 00 00 00 00 00 00	\$20.00 \$10.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg
Corpsed \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$ 	\$0.00 100.00 50.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$80. \$0. \$0. \$0. \$0. \$0. \$0. \$0. \$	00 00 00 00 00 00 00 00 00 00 00 00 00	\$20.00 \$10.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg
Corpsed \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	S. contr	\$0.00 100.00 50.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$80. \$0. \$0. \$0. \$0. \$0. \$0. \$0. \$	00 00 00 00 00 00 00 00 00 00 00 00 00	\$20.00 \$1.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg
Corpsed \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	S. contro	\$0.00 100.00 a \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$80. \$0. \$0. \$0. \$0. \$0. \$0. \$0. \$0. \$17. \$10. \$7.	00 00 00 00 00 00 00 00 00 00 00 00 00	\$20.00 \$1.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg
Corpsed \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	S	\$0.00 100.00 a \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$80. \$0. \$0. \$0. \$0. \$0. \$0. \$0. \$	20 20 20 20 20 20 20 20 20 20 20 20 20 2	\$20.00 \$10.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg
Corpsed \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	S	\$0.00 100.00 a \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$80. \$0. \$0. \$0. \$0. \$0. \$0. \$0. \$	00 00 00 00 00 00 00 00 00 00 00 00 00	\$20.00 \$10.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg
Corpsed \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	S	\$0.00 100.00 a \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$80. \$0. \$0. \$0. \$0. \$0. \$0. \$0. \$	00 00 00 00 00 00 00 00 00 00 00 00	\$20.00 \$10.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg
Corpsed \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$	\$0.00 100.00 50.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$80. \$0. \$0. \$0. \$0. \$0. \$0. \$0. \$	00 00 00 00 00 00 00 00 00 00 00 00	\$20.00 \$10.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg
Corpsed \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	S.	\$0.00 100.00 50.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$80. \$0. \$0. \$0. \$0. \$0. \$0. \$0. \$	00 00 00 00 00 00 00 00 00 00 00 00 00	\$20.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg
Corpsed \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	S. 	\$0.00 100.00 a \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$80. \$0. \$0. \$0. \$0. \$0. \$0. \$0. \$	00 00 00 00 00 00 00 00 00 00 00 00 00	\$20.00 \$10.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg
Corpsed \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	S	\$0.00 100.00 a \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$80. \$0. \$0. \$0. \$0. \$0. \$0. \$0. \$	00 00 00 00 00 00 00 00 00 00 00 00	\$20.00 \$10.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg
Corpsed \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	S	\$0.00 100.00 a \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$80. \$0. \$0. \$0. \$0. \$0. \$0. \$0. \$	20 20 20 20 20 20 20 20 20 20 20 20 20 2	\$20.00 \$10.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg
Corpsed \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	S. 	\$0.00 100.00 50.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$80. \$0. \$0. \$0. \$0. \$0. \$0. \$0. \$	00 00 00 00 00 00 00 00 00 00 00	\$20.00 \$10.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg
Corpsed \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$	\$0.00 100.00 a \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$80. \$0. \$0. \$0. \$0. \$0. \$0. \$0. \$	00 00 00 00 00 00 00 00 00 00 00 00 00	\$20.00 \$10.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg
Corpsed \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$	\$0.00 100.00 a \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$80. \$0. \$0. \$0. \$0. \$0. \$0. \$0. \$	00 00 00 00 00 00 00 00 00 00 00 00 00	\$20.00 \$1.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00 \$0.00	\$0.00 \$0.00 \$0.00 typdreg

Appendix C Minutes of Project Team Meetings and Technical Memos

```
inspecto descrip olddescrip
            ----
----
                         CONSTRUCTION OF BAPTISTE COLLETTE DELTA SPLAY
                         MARSH CREATION
-
             -
                         MARSH CREATION, SABINE NATIONAL WILDLIFE REFUGE
_
             -
                         MARSH CREATION
                         FISH MIGRATION AND SURVIVABILITY STUDY
             -
_
                         ENV ISSUES - MGNT OF NAT RES CALHOUN PT RESTORATION
MGT OF NATURAL RESOURCES
-
             -
_
                         FENDER SYSTEM & OTHER MISC REPAIRS
-
                         RESTORE MARGINAL & ERODED LANDS - 15 SEPARATE LOCATIONS
arguml
                          _
FUNDS REQUIRED TO PERFORM FISH & WILDLIFE HABITAT
oldarguml
DIVERT FRESH WATER TO RESTORE MARSH & DECREASE WETLAND LOSS.
ADDITIONAL COSTS INCURRED TO USE MAINTENANCE DREDGING MATERIAL
ADDITIONAL COSTS INCURRED TO USE MAINTENANCE DREDGING MATERIAL
PUMP DREDGED MATERIAL FROM MI 0-10 TO SHALLOW OPEN WATER AREAS
COOP STUDY TO DETERMINE THE MIGRATION & SURVIVABILITY OF TAGGED
COOP STUDY TO DETERMINE THE HIGRATION & SURVIVABILITY OF TAGGED
RESTORATION OF WETLAND COMPLEX PHASE 2 TO INCLUDE SILT DEFLEC
MOT OF NATURAL RESOURCES TO OFF-SET LOSSES IN UPPER YAZOO BASIN
PERFORM MAINTENANCE THAT WILL PROVIDE BENEFITS BEYOND THE BUDGET
REFORESTATION AND CONVERSION OF MARGINAL AND ERODED PUBLIC LAND
argum2
RESTORATION & MGHT, & FOREST MGHT ACTIVITIES
oldarom2
                                                                                             output mea
                               ----
(SEE DREDGING WF ID 5)
                                                                                                          0
FOR CREATION OF MARSH (PART OF DREDGING CONTRACT-WF ID 10)
                                                                                                          0
FOR CREATION OF MARSH (PART OF DREDGING CONTRACT-WF ID 10)
FOR CREATION OF 150 ACRES OF MARSH. (SEE DREDGING WF ID 50)
TO CREATE MARSH. (SEE DREDGING WF ID 20)
BASS 6-8 IN LONG IN THE AREA ABOVE & BELOW THE RAILROAD TRESSEL
DIKES, INTERIOR DREDGING ISLAND CREATION
PROJ ACCORDING TO MITIGATION PLAN
                                                                                                          0
                                                                                                          0
                                                                                                          0
                                                                                                          0
                                                                                                          ٥
YEAR.
                                                                                                          ٥
TO NATIVE WARM SEASON GRASSES IN ACCORDANCE WITH PL 86-717
                                                                                                          õ
TABLE: DISTRICT
# Name
                              Type
TEXT
                                            Index Expression
1 district
                                         3
2 dstnam
                              TEXT
                                         32
3 eroc
                              TEXT
4 progtyp
5 divnam
                            . TEXT
                                          з
                                          3
                              TEXT
```

TEXT 6 distitle TEXT 35 divtitle district code, eroc, program type, div dst names (why is this not the standard 3 character code?) (note that district code is eroc prefixed with C, F, E to distinguish program type - C = GEN, E = MRT, F = GRF) [table not normalized). Example: district eroc divnam divtitle detnam progtyp distitle CB1 LAM B1 GEN LAD Nemphis District CB2 LAN B2 GEN LAD New Orleans District CB3 LAS B3 GEN LAD St. Louis District CB4 LAG B4 GEN LAD Vicksburg District CB4 LAG B4 GEN LAD Vicksburg District CC1 MRK C1 GEN MRD Kansas City District Missouri River Division CC2 MRO C2 GEN MRD Omaha District Missouri River Division EB1 LNH B1 MRT LND Memphis District Lower Mississippi Valley Division EB2 LNN B2 NRT LND New Orleans District EB3 LNS B3 NRT LND St. Louis District EB4 LNK B4 NRT LND Vicksburg District Lower Mississippi Valley Division TABLE: DREDGE 1 typdreg 2 dredge TEXT 2 60 TEXT DREDGE 2 9 text description for dredge type code (typdreg) typdreg dredge RS Corps Hopper Dredge, Small Class (less than 2,000 cy) Corps Hopper Dredge, Medium Class (1995 than 2,000 Cy) Corps Hopper Dredge, Medium Class (2,000 - 6,000 cy) Corps Sidecaster Dredge HM HL SC AL All Other Corps Dredges CA Non-Hopper Contract Dredge Contract Hopper Dredge, Small Class (less than ...,000 cy) Contract Hopper Dredge, Medium Class (2,000 - ...000 cy) Contract Hopper Dredge, Large Class (greater than 6,000 cy) CS CH CT. TABLE: FEAT TIT 1 FCCD TEXT 5 2 feat tit TEXT 56 text title for each FCCD (feature cost code) FCCD feat_tit 01.1 LOCK OPERATIONS 01.2 DAM OPERATIONS 01.3 RESERVOIR OPERATIONS 02.1 OPERATION OF SERVICE FACILITIES - ROADS AND BRIDGES OPER. OF SERVICE FACILITIES - BLDGS, GROUNDS & UTILITIES OPERATION OF SERVICE FACILITIES - PERM. OPER. EQUIP. 02.2 02.3 OPERATION OF LEVEES AND FLOODWALLS OPERATION OF PUMPING PLANTS OPERATION OF POWER PLANT 03.1 03.2 04 05.1 MGMT OF NATURAL RESOURCES EXCLUDING FISH HATCHERIES

Appendix C Minutes of Project Team Meetings and Technical Memos

OPERATION OF FISH MATCHERIES FISH HAULING ACTIVITIES MGMT OF ARCHABOLOGICAL & CULTURAL RESOURCES 05.2 05.3 05.4 TABLE: FUNDLEY # Hane Type TEXT Index Expression 1 fundlev 1 2 year type TEXT 4 alpha code for fundlev , year type cross-reference 1-7,9 = BY F,O,R,T,U = BY-1, BY-2 fundlev year_typ 1 BY BY 23467 BY BY BY BY 9 BY 2 BY-1 0 8Y-1 BY-1 RTUF BY-1 BY-1 BY-2 ō BY-2 RTU BY-2 BY-2 BY-2 TABLE: HISTORY 1 district TEXT 3 2 cwis INTEGER 3 year 4 PCCD TEXT 2 TEXT 5 5 expend DOUBLE expenditure by FCCD for a given CWIS and District in a year (currently all 89) district cwis year FCCD expend **CB1** 7440 89 TC 301.8 CB1 CB1 7440 89 7440 89 7440 89 07.11 07.24 09.21 0.5 CB1 CB1 20.8 7440 89 7440 89 7440 89 7440 89 8180 89 8180 89 8180 89 19.2 6.9 243.8 18.5 CB1 33.12 CB1 35.1 TC 07.22 CB1 116. CB1 65.6 CB1 CB1 CB1 CB1 CB1 CB1 CB1 10.11 10.21 49.8 8180 89 0.6 13430 89 13430 89 13430 89 13430 89 13430 89 TC 301.5 07.11 0.1 07.24 19.2 6.9 CB1 33.12 274.2 **CB1** 13430 89 35.1 18.3

.

.

```
TABLE: INTEREST
```

.

1 interest_tit 2 interst_tit TEXT TEXT 1 25

code lookup for interest code description

interest interst_tit

С	Coast Guard Installation
x	Military Installation
7	Commercial Fish Area
0	Only Access to Area
P	Political

TABLE: OKB92

primary table for work function ranking information, containing oce, division, and district ranks for a given work function for a cwis, district, year, plus additional info (possibly separate out into separate tables, one for live ranking, one for info that will not change). (what is primary key for omb92 table??)

1 distri 2 cwis 3 year 4 funció 5 rank 6 cofmar 7 orgood 8 distrar 9 divrar 10 ocera 11 fundi 12 categ 13 focd 14 totoo 15 contr 16 dirla 17 contr 20 corps 21 totor 22 typdr 23 inspe 24 descr	ict i i i i i i i i i i i i i i i i i i		TEXT INTEG TEXT INTEG INTEG INTEG INTEG INTEG INTEG TEXT TEXT TEXT CURR CURR CURR CURR CURR CURR CURR CUR	GER ER ER ER ER ER ER ER ER GER S ENCY ENCY ENCY ENCY ENCY ENCY ENCY ENCY							
25 argus 26 argus 27 conto 28 const 29 outpu 30 bidda 31 advda district cwis	al contr craint it meas ite ite year func	ure ra: :id.co	TEXT TEXT CURRI TEXT INTE INTE INTE	64 64 ENCY 1 JER JER JER Or det	gcode ran diy	vrank	ocerank fundl	C.	Etego fcc	ry	toto
CB1 744 CB1 744 CB1 744 CB1 744 CB1 744	0 90 0 90 0 90 0 90 0 90 0 90	5 1 10 3 15 4 20 2 5 1	900005 900010 900015 900020 910005	NAV NAV NAV NAV NAV	10040 20170 30290 10120 10040	10189 20021 30012 10852 10048	3010189 3020021 3030012 3010852 3010048	F O R F F	E04 D01 D01 E05 E04	07.11 33.11 33.11 07.12 07.11	530 530 530 530 530 530

Appendix C Minutes of Project Team Meetings and Technical Memos

\$20.00 \$20.00 \$34.00 \$365.00 \$25.00 \$14.00

TO ACCONODATE EXISTING TRAFFIC TO PROVIDE WATER ANALYSIS - ELUTRIATE TEST - FISH SAMPLING TEST CHAMMEL PATROL REPORT TO PROJECT USERS CC DISTRIBUTIVE DEMOGILISATION COSTS TO ACCOMODATE EXISTING TRAFFIC TO PROVIDE WATER ANALYSIS - ELUTRIATE TEST - FISH SAMPLING TEST INSPECTIONS OF 6 PROJECTS WHICH HAVE EXPERIENCED RECENT INSPECTIONS OF 6 PROJECTS WHICH HAVE EXPERIENCED RECENT INSPECTIONS OF 6 PROJECTS WHICH HAVE EXPERIENCED RECENT argum2 ---_ --------_ TO COMPLY WITH STATE ENVIROMENTAL REGULATIONS PER SEC 404. --PROBLEMS. IN-DEPTH INSPECTIONS OF 29 PROJECTS. contcontr constrai output_mes biddate advdate \$0.00 -\$0.00 -\$25.00 -Ø 0 0 Ø 0 0 \$25.00 ŏ 32990 22690 -\$0.00 ō 0 0 \$0.00 -\$0.00 -\$25.00 -\$0.00 -\$0.00 -\$0.00 -\$0.00 -\$25.00 -Ö Õ ō Ō G Ô Õ 41191 30891 Ō 0 Ō Ō Ó 0 0000 00 0 0 \$0.00 -\$0.00 õ 0000 õ \$0.00 õ ō \$0.00 -Ō Ō ŏ \$0.00 -Ō Õ \$0.00 -6 29 0 0 0 TABLE: PROJCT 1 district TEXT 3 2 CWIE INTEGER 3 projels TEXT 2 4 projnam TEXT 48 5 state 6 feecode TEXT 2 TEXT 1 7 tenyrave DOUBLE

Appendix C Minutes of Project Team Meetings and Technical Memos

	8 814	TVOVA	THTROPH					
	9 10	MUSE	TEXT	ั่ 1				
	10 t	onnage	DOUBLE	:				
	11 1	nterset	TEXT	1				
	12 p	olitician	TEXT	40				
	14	uthevia	TRAT					
	proj	ect info table (by distr	ict,	owis	numbe	F)	
				state	termine		e loterest	
dist cui	is proje	:ls projnam			fee	-	terrage pol	litician auth proj
88929		UNDIA K. STSIEN UPERAT	ICH NEATER		- 0.	0 -	9. • •	COLUMBIA R. SYSTEM OPERATION REVIEW
CG1 340	HC ANC	NORAGE MARGOR		AK	A 0.6	12 -	2294.5	ANCHORAGE MARBOR, AK
631 631	NC THE	MAS BASIN (KETCHIKAN)		AK	A 0.	A Y	2004.9	
431 CG1 4800								
4800					P 12.1	~ *	a	FILLINGHAN SHALL BOAT WARSON, AK
- CG1 - 8180 75067	FI ING	PECTION OF COMPLETED W	CIRICS .	AK	- 0.	e -	0	INSPECTION OF COMPLETED WORKS
061 12640	NC NIN	ILCHIK MARBOR		AK	F 9999.6	2 7	0. P YOUNG	WINILCHIK MARBOR, AK
CE1 14400	PS PR0.	JECT CONDITION SURVEYS		AK		11 -	8	
14400							•	PROJECT CONDITION SURVEYS
17500		annisi 11 9		AK.	r 0.6	u ·	U.	WTIKINE RIVER SNAGGING, AK
CE1 21500 21500	IIC WRAS	NGELL NARBOR		AK	F 0.	8 Y	0	WRANGELL MARBOR, AK
EB2 23274	FC RIS	SISSIPPI BELTA REGION	- CAERILARVO	H LA	- 0.	0 -	0	NISSISSIPPI DELTA DEGICII - CAERMANNI
E83 19420	FR WAP	MPELLO LAKE NO		-	<u>م</u>	٥.	A	
58240					- -	• •	.	
1800	TH 185			NS 1	n 0.	• •	0. • -	ARKARUTLA LAKE, NS
ES4 1490 2980	FC YAZO	DO BASIN-BIG SUNFLOWER		HS I	N 0.	۰ ه	8	YAZOD BASIN-BIG SUNFLOWER, MS
EB4 5590	FR ENIO	LAKE		-	. 0.	e -	0	ENID LAKE, MS
16770 EB4 7050	FC YA20						• • •	
14100	-						v.	TAZOD WASIN-GREENWOOD, MS
21270	PR GREN	IADA LAKE		NB (I 0.	8 -	0	TAZOO BASIN-GRENADA LAKE, MS
EB4 10220	FC LOWE	ER RED RIVER - SOUTH BA	WK LEVEES		ı 0.	0 -	0	LOWER RED RIVER - SOUTH BANK LEVEES, LA
20440								
	TABLE	I PURPOSE						
	1	70	THEFTOPP					
	2 pur	pose	TEXT 5	5				
	3 801	t_order	TEXT	1				
	looku	p table for text	eort a		-		100000 000	b =
		b canne for cant	, ource	TOPI	tor	equo	(seens to	be duplicated)
	segno	purpose						sort ord
		1 TESTING POR	V 1002 B	11000	 A			
		2 CUT SAD ENVIR	ON DREDG	STU	DIES			A
		3 \$40 MILLION D	ECREMENT	LIS	T			D
		4 \$46 NILLION N	AINTENAN	icit c	TUT			D
		5 \$11 MILLION H	AINTENAN	CE C	UT			D
		7 S77 MILLION W	RILLION					D
		8 S(6 MILLION M	AINT CUT		01			D
		1 TESTING FOR P	¥ 1992 B	UDGE	T			ž
		2 CUT SAD ENVIR	ON DREDG	STU	DIES			λ
		2 940 MILLION D	SCRENT	LI S	T			α
								1
								4
								•
								ĺ
								1
								ļ
								1

4 \$46 MILLI 5 \$11 MILLI 6 AT LEAST 7 \$77 MILLI 6 WILLI	ON NAINTENANCE ON NAINTENANCE \$ 11 MILLION ON NAINTENANCE ON NAINTENANCE	CUT CUT CUT	D D D
B \${6 NITTION NVINI CAL			
TABLE: RANKHIST			
1 sequo 2 corrdate	Integer Integer		
4 newrank	INTEGER		
6 CWIS	INTEGER		
8 funcid	integer		
9 oldcost 10 newcost	CURRENCY CURRENCY		
11 oldreg 12 newdreg	CURRENCY CURRENCY		
13 contracts 14 dirlabor	CURRENCY CURRENCY		
15 other 16 controd	CURRENCY CURRENCY		
17 corpsed 18 contras	CURRENCY		
19 corpesa 20 descrip	CURRENCY		
21 category	TEXT 3		
???? [shows prior to particular change - per MRW]			
dist segno corrdate oldrank newrank cwis year funcid oldcost newcost olddreg			
3 901017 3000180 3 901017 3000185	3000180 CG2	3630 92 90	\$848.00 \$848.00 \$300.00 \$286.00 \$286.00 \$510.00
3 901017 3000190	3000190 CG2	16930 92 15	\$174.00 \$174.00 \$50.00
4 901102 2022220 4 901102 2022295	2022220 CG4 2022295 CG1	9860 92 165 12640 92 5	\$27.00 \$27.00 \$0.00 \$232.00 \$232.00 \$70.00
4 901102 2022305 8 901105 3000180	2022305 CG1 3000180 CG2	87246 92 5 3630 92 90	\$395.00 \$395.00 \$20.00 \$848.00 \$848.00 \$300.00
8 901105 3000185 8 901105 3000190	3000185 CG2 3000190 CG2	3900 92 5 16930 92 15	\$296.00 \$296.00 \$51.00 \$174.00 \$174.00 \$50.00
newdreg contractsdirlabor other contred corpsed contras corpses			
\$300.00 \$750.00	\$0.00 \$0	.00 \$0.00	\$36.00 \$0.00 \$62.00
\$51.00 \$0.00	\$104.00 \$171 \$0.00 \$0	.00 \$0.00	\$0.00 \$0.00 \$21.00 \$12.00 \$0.00 \$12.00
\$0.00 \$0.00 \$70.00 \$105.00	\$9.00 \$15 \$100.00 \$8	.00 \$0.00 .00 \$0.00 :	\$0.00 \$0.00 \$3.00 \$12.00 \$0.00 \$7.00
\$20.00 \$263.00 \$300.00 \$750.00	\$49.00 \$37 \$0.00 \$0	.00 \$0.00	\$24.00 \$0.00 \$20.00 \$36.00 \$0.00 \$62.00
\$51.00 \$0.00 \$50.00 \$150.00	\$104.00 \$171	.00 \$0.00	\$0.00 \$0.00 \$21.00 \$12.00 \$0.00 \$12.00
descrip			ategory
CONTRACT MAINT DREDGING TONGUE POINT DO1			
CONTRACT MAINTENANCE DREDGING INNER CHANNEL DOI			
HAINT DREDGING OF HARBOR AND ENTRANCE CHANNEL DO1			
HAINTENANCE DREDG	ING		DO1
•			

Appendix C Minutes of Project Team Meetings and Technical Memos

```
D01
 CONTRACT MAINT DREDGING TONGUE POINT
                                                                                                            D01
D01
 MAINTERANCE DREDGING ENTRANCE CHANNEL
CONTRACT NAINTENANCE DREDGING INNER CHANNEL
 TABLE: REASON
 1 reascode
                                             INTEGER
 2 reason
                                             TEXT 64
   code lookup table giving text for each integer reascode
 reascode reason
             0 -
          0 -

1 WORK APPROVED--FUND THRU ALIGNMENT OF COSTS IN OTHER ITEMS

2 COST TOO HIGH FOR THIS PARTICULAR WORK FUNCTION

3 COST GROWTH NOT IN LINE W/HQUSACE BUDGETARY GUIDANCE

4 FUNDING LEVEL NOT IN CONSONANCE WITH BUDGET NATRIX

5 WORK FUNCTION IMPROPERLY CATEGORISED

6 DESCRIPTION OF WORK NOT CLEAR

7 ANGUMENT CLARIFIED

8 WORK NOT JUSTIFIED BY ARGUMENT PROVIDE ADDITIONAL JUSTIFICATION

9 WORK NOT AUTHORISED IN THAT PROJECT

10 WORK NOT AUTHORISED OR APPROVED UNDER OGH

90 -
           90 -
           91 NEW REASON CODE
99 DIVISION DEFAULT
TABLE: YEAR
1 year
2 year_type
                                              TEXT
                                                               24
                                              TEXT
correspondence between year and year_type
                   year_typ
year
92
                   BY
91
90
                    BY-1
                    BY-2
PY
 89
```

÷
Hike and Dick:

I tested all the options except the generate SQL and browse work function options. I could not verify the results of the scenarios against what I have on the mainframe database because you have an earlier version of GMB93 and because of a problem I encountered when generating the scenarios. I divided my comments between major and minor problems that I encountered.

A. Najor Problems

1. I generated two primary scenarios of my own, one of which is displayed in Encl 1. What I was trying to do was to isolate large funded dredging work functions in three divisions. Unfortunately, the results returned were for more than the three divisions and for more than one feature cost code (dredging is just feature cost code 33.11). Did I do something wrong? I created the scenario, edited it, selected it, built it and evaluated it. The results are shown after the scenario forms display enclosed. I also tried another scenario with one division and one CMIS number and when I built it, I got more than one project and more than one division.

2. The first time I created a primary scenario, I tried using a wild card. I entered '33' in the feature cost window. When I later tried to build this scenario, the program aborted during the 'building temporary SQL statement' message. When I later changed the feature cost to '33.11', the program ran correctly.

3. When I built a composite scenario from two fairly small scenarios ~ 527 and 383 records - it took nearly two hours to build the composite scenario.

II. Minor problems.

1. It took me some time to get used to moving through the menus and forms but once I learned the right key sequences to use it became easier. I would suggest showing key options somewhere on each form.

2. OCE, CWIS and FCCD flags entries on the first form do not seem necessary. If you are always going to make the user go through the second form where you enter individual OCE ranks, CWIS numbers and FCCD codes, then you can check for the existence of entries in those areas instead of asking the user to flag them.

3. Some entries are given validity checks and some are not. Would be nice if all had validity checks. Also, for entries such as 'APP', it would help if only capital entries were allowed.

- 4. Some cosmetic improvements on the first form:
 - a. Change 'APP' to 'Approp'
 - b. Change 'Rank' to 'OCE Ranks'
 - c. Change 'LUNP' to 'LOW USE NAVIG'
- 5. Some commetic improvements on the second form:
 - a. change 'OCE' to 'OCE Ranks'
 - b. change 'FCCD' to 'Feature Cost Codes'

6. The scenario evaluation report should have the scenario description, explanation and a summary of the criteria involved in the scenario. Also, it should have totals for divisions and project classes.

7. All reports should page eject after last page. I have laser printer and it is not always easy to know if the last page has been printed.

Dave Harmon CECW-OM-b

Appendix C Minutes of Project Team Meetings and Technical Memos

Edit Go to Exit Name scenel Rank to 2800000 App C 0 NAD SAD NCD DIV CLASS Kin Cost \$1,000.00 Cum Cost \$20,000.00 A/D D -0- to -0-Nessure LUNP -FCCD flag X OCE flag - CWIS flag -Description HIGH COST FUNDED DREDGING IN MAD, SAD AND NCD Notes SHOW HURT FOR \$20 MILLION CUT ENCL 1



Appendix C Minutes of Project Team Meetings and Technical Memos

```
Temporary Scenario Table
                                          Date: 02/10/92 Time: 12:42
  Scenario: scenel
  Number of Work Functions: 572 Total Cost: $652,935.00
    Temporary Scenario Costs By Division
    Scenario: scenel
                                         Date: 02/10/92 Time: 12:42
   Division
                  Total Cost
     LHD
                            $117,957.00
                            $117,957.00
$805.00
$96,811.00
$163,787.00
$2,005.00
$41,052.00
$4,622.00
$4,622.00
$4,622.00
$149,167.00
$30,954.00
$38,893.00
     MRD
     MAD
     NCD
     KED
     NPD
     ORD
     POD
     SAD
     SPD
     SND
   Temporary Scenario Costs By Division
    Scenario: scenel
                                        Date: 02/10/92 Time: 12:42
  Proj Class Total Cost
               .
                           $20,059.00
$3,363.00
$884.00
$482,677.00
$5,720.00
$2,040.00
$138,192.00
     7C
     HIN
     XA
     NC
     ND
     HG
    HL.
   Temporary Scenario Costs By FCCD Prefix
   Scenario: scenel
                                       Date: 02/10/92 Time: 12:42
  TCCD
                  Total Cost
      1.
                             $35,062.00
                             $1,178.00
$1,301.00
$13,595.00
     2.
     7.
    21.
                           $13,595.00
$19,804.00
$1,050.00
$14,000.00
$2,735.00
$2,427.00
$561,783.00
    22.
23.
    25.
    26.
    31.
    33.
 Total:
                           $652,935.00
  Temporary Scenario Costs By FCCD
  Scenario: scenel
                                      Date: 02/10/92 Time: 12:42
 FCCD
                 Total Cost
 01.1
                            $35,062.00
 02.2
                             $1,178.00
ENCL 1
```

. .



Appendix C Minutes of Project Team Meetings and Technical Memos

,

		Decision Support for the Q&M Budget Process
		Initial Meeting
		0900 8 October 1991
		Water Resources Support Center
		Casey Building
		Fort Belvoir, VA 22060
		AGENDA
I.	Introc	luctions
H.	Curre	nt Status of Automated Budget System (ABS) Process
	Α.	Overview - Dave Harmon
	В.	Timeline for ABS Process
	C .	Data Entry and Consolidation - Connie Raaymakers
	D.	Port to Oracle
	Ε.	Planned Changes - Dave Harmon
IU.	Conce	ept and Approach for a Budget Decision Support System
	A .	Overview - Michael Walsh
		1. Examine existing process and systems
		2. Determine database and analytical
		requirements tes tes
		3. Develop prototypes
		4. Prepare system concept report Demos
		5. Implement interim system
	В. С.	Approach to Requirements and Prototype Design - Dick Males
IV.	Demo Versio	nstration of Corps O&M Budget Decision Support System (COMB DSS) Pre-Alpha In 0.1
v .	Desigr	and Development issues
	A .	Who is the User?
		1. Dave Harmon
		2. John Parez
		3. Jim Crews
		4. John Elmore
	8.	Database issues
		1. Should structural changes be considered?
		2. What additional criteria should be added?
		3. What sub-set of the data is needed for analysis?
		1

•

	С.	Modeling Issues					
		1. What priority should be given to the following list?					
		a. Rank Generators b. Scenario Analyst c. Statistical Analyst d. Financial Analyst					
		(1) 'Cut-off' Analyses (2) Cost Distribution Analyses					
		e. Criteria Analyst					
		2. What specific capabilities should each model set have?					
	D.	DSS Environment					
		Hardware/Software Options User Interface Options					
	E.	Integration with Corps "Corporate Data Base"					
		1. Oracle 2. Client-Server Approach					
	F.	Communication within the IOMT project team					
VI.	Fundir	ng and Schedules					
VII.	Other	Items for Discussion					
VIII.	Action	n items					
		· · · · ·					
		•					
		_					
		· · ·					

Appendix C Minutes of Project Team Meetings and Technical Memos

•

CEWRC-IWR-R

October 15, 1991

MEMORANDUM FOR RECORD

SUBJECT: Initial Meeting of O&M Budget Decision Support System Project Team

1. The initial meeting of the project team that is developing an O&M budget decision support system was held at the Institute for Water Resources on 8 October 1991. This work effort is part of an IOMT work unit on the application of decision support systems for O&M management. The success of this effort depends on the cooperative effort of researchers from IWR, CERL, WES and private contractors working with the users of the decision support systems at Headquarters, Divisions and Districts. This meeting brought together the developers of the decision support system with one of the primary users to discuss the proposed work, identify any critical issues that must be addressed, and set timetables and responsibilities for tasks that are to be conducted this fiscal year. Attending were: Dave Harmon, CECW-OM; Ed Japel, CECER-FS; Connie Raaymakers, CECER-FS; Steve Scott, CECWES-HE-E; Michael R. Walsh, CEWRC-IWR; Richard Males, RMM Technical Services, Inc.; and Craig Strus, Planning and Management Consultants Limited. Males and Strus represented the contracting team working on the project. The agenda for the meeting is attached.

2. Current Status of ABS. Dave Harmon presented an overview of the ABS cycle. The cycle begins in March, with a nationwide meeting, at which budget guidance is provided (based on the budget EC). A budget matrix is provided that describes how work functions are to be allocated to discrete funding levels. At this time each Division offices is given a target dollar figure for their budget. Divisions can show work they would like to do that is above this target. The Division gets a single number for its target (all Districts, all programs in O&M). From March to May, the field works on submittals. Information is entered by Districts into local databases via personal computer using the PC-ABS software developed by CERL. During this period, no new dollar information is likely to be provided to the Districts. On or about May 15, information is uploaded by the Districts to the WCC computer (using the ABS software). Each district's data is kept in separate databases on the WCC computer where is can be examined by the District and its Division. Once uploaded, the District information is also consolidated into the appropriate Division databases. [Each District and Division have their own databases, to provide an audit trail and history). Divisions rank work units by June 15th, with this information going into the Division-level database. At this time, HQ makes sure that field entries conform to the guidance, and make corrections. The Districts and Divisions can look at this, and protest the corrections, during the period June 15th - July 15th. A database table maintains the latest corrections made. By July 15, the consolidated Corps O&M database is ready for analysis.

Scenario analyses are conducted from 15 July until the end of the fiscal year. Typically, three scenarios are presented to OMB, but this requires processing of a number of subscenarios. As described by Dave Harmon, the scenario analysis can take a wide variety of forms, with many different factors explored. The scenario analyses are basically ongoing, 'until we run out of time'. The project historical summary report generated through ABS is the primary vehicle for looking at the database and comparing scenarios. While this process will likely remain the same, there is a major change underway in the underlying software and hardware used to support the process. The system currently resides in the RAMIS DBMS, on an IBM mainframe at WCC. Current Corps policy requires that the system be ported to the Oracle DBMS on the CEAP CDC machine. This port is underway and is being carried out by Cathy Ballard at WES, and is scheduled for testing in December. A test of upload capability is planned for February, at which time a go-no go determination will be made on using the Oracle port, or retaining the existing system for the next budget cycle. No changes will be made to this critical system until it can be demonstrated that the new system is functional.

There is interest in including condition indices for maintenance work to assist in the decision process. The development of condition indices is part of the REMR research program. Condition indices are numerical ratings that indicate the condition of an existing structure or component against a 'new' condition. The addition of condition indices can be accomplished within the existing structure of the ABS database. The existing structure field 'output measure' can be used to store the condition index, and can be linked to the particular structure using the 'cofmarid' field of the ABS. The analysis of the condition indices with respect to funding for maintenance remains problematic.

Communications capability from the field to the ABS was discussed. One of the major advantages of the existing system is that the field rapidly gets information on the budget (2 hours after decisions are made). Currently, this is through direct access to the IBM machine - download possibilities for this information are being explored. The CEAP backbone is not currently installed at all Districts - accordingly, communications with the ABS Oracle port are expected be maintained through async communications, using a version of Kermit obtained from Lehigh University. This version has a variable packet size, giving effective 9600 bps throughput while connected at 2400 bps.

3. Concept for Budget Decision Support System. I described the overall framework for the Decision Support System (tentatively named the Corps O&M Budget Decision Support System, COMB_DSS). A DSS is comprised of three parts - a user interface, a database, and model base. Presently, the ABS system has a well developed database, with a less developed model base and user interface. The COMB_DSS will develop a set of model or analysis tools and an appropriate user interface and integrate these components with the database to provide a working decision support system. In overview, the process will: 1) examine existing processes and systems; 2) determine database and analytical requirements; 3) develop prototypes; and 4) prepare a system concept report. The prototype is directed primarily at HQ needs, with field desires to be addressed where possible. The Rock Island District will serve as the starting point for looking at field requirements.

The project is conceived as starting with development of a PC-based 'prototype' system, that serves as a proof of concept of the DSS. The intent is that the prototype will demonstrate PC-based scenario analyses, using BY 93 data. An iterative process for prototype development will be undertaken, with versions demonstrated, and modified based on user feedback. The 'final' prototype should be available in March. The completed prototype is the starting point for development of an 'interim' system, also PC-based, to be used for the actual scenario analysis for BY 94 data. Responsibility for development of the prototype rests with the IWR and PMCL, under contract to IWR, and the interim system will be handled by CERL. The development of interim system will

Appendix C. Minutes of Project Team Meetings and Technical Memos

include the accomplishment of the downloads of BY 94 data from the mainframe (Oracle or RAMIS). The system concept report will include a discussion of the interim system, and additional possibilities for integrating COMB-DSS, perhaps in client-server mode, with the mainframe database on CEAP. The integration of the COMB_DSS, Oracle Port, Interim System and the corporate solution will be discussed later in this memo.

4. Approach to Requirements Analysis and Prototype Design. Dick Males provided an outline of the proposed approach for the prototype design, in terms of the three components of the DSS (database, models, and user interface). In addition, the overall environment was discussed. For the database, the intent is to mimic, to a great degree, the structure of the mainframe ABS, using a relational DBMS on a PC. Possibilities for structural revision (additional/modified tables and fields) will be explored. Five functional areas of models were proposed:

- Rank Generator given a set of criteria for work functions, generate a rank;
- Scenario Analyst given a ranking range, possible additional criteria, determine if a work function is in or out of a given scenario (and possible generate a numerical value as to how far out or in the particular work function is)
- Statistical Analyst perform 'discovery' to look for relationships in the database, generate overall statistical measures from the database
- Financial Analyst a) Cut-Off Analysis given a certain amount of dollars, what will get funded (based on rankings) within a given scenario i.e., given a set of work functions in a scenario, how far down the list (in descending rank order) can you go without exceeding a given cumulative total dollar amount; b) Distribution Analysis how does a given scenario and dollar amount result in distributing dollars to Districts, Division, among categories, classes, FCCD's, etc.;
- Criteria Analysts models that operate on criteria in the database (in all likelihood additional criteria not currently present) that would generate new measures for a work function (i.e. economic, risk-reliability, etc.).

The technical structure of the COMB-DSS database to support the scenario analysis was described and discussed. It is intended to store, for each scenario, a listing of the work functions that are in that scenario, in a separate table. The financial analyst would then operate upon that table to handle dollar measures. Scenario analysis is to be based on ranks (which will not change), and other facts stored about the work function. This conceptual construct is somewhat different from the existing approach to scenario analysis, but was viewed as offering advantages over the present method.

The user interface methodology was discussed. A combination of menu-driven, pre-stored reports and queries, together with the capability of ad hoc querying, is to be provided. The need for great flexibility in developing scenarios was stressed by Dave Harmon. Graphical output is desirable - the exact format and content of charts and mapped output will be explored in the near future. [Dave Harmon is to provide some sketches of the kinds of graphics that might be desired].

The user environment is intended to be a PC. In order to handle the expected large data

base (25 MB), a fast machine should be available with large amount of mass storage. Dave Harmon will be working with a 486/50 PC, so this should not be a problem. Three initial candidate DBMS were proposed - R:Base, Oracle, and Paradox. R:Base was selected because of its strong application development tools, and because of its ability to use industry-standard SQL. Oracle will be investigated further as a possible platform for COMB DSS to maintain compatibility with ORACLE used on CDC mainframe machines. Concern for the flexibility of application development tools in Oracle was expressed. Paradox was included because of its integrated graphics capability, and speed. Insofar as possible, commercial packages will be used for the DSS. The possibility of using the Windows environment for certain types of software also exists. The R:Base environment will be maintained for the next iteration of the DSS, while examining the other options of Oracle and Paradox.

The project will also involve some degree of technology exploratory research, to look at multi-criteria ranking and display methodologies, and examine packaged data analysis systems, graphical user interfaces, and object-oriented paradigms.

5. Pre-Prototype Demonstration. Existing BY 93 data has been provided by Dave Harmon, through downloads from the mainframe database, and I entered this data into the R:Base DBMS on a PC, for initial exploration. Dick Males and I demonstrated some of the capabilities of the R:Base system using this data, including a menued application, forms data entry, and some financial analyst distribution reports, showing total dollars associated with Divisions, Categories, Class, and FCCD, for a user-specified ranking range.

6. Design and Development Issues. Dave Harmon was identified as the immediate 'client' user of the system. Other potential 'hands-on' users might be Jim Crews and John Parez. The possibility of providing a spreadsheet-like interface to the data was suggested by Dave Harmon, as being familiar to a number of users.

The issue of structural change to the database was discussed. If performance enhancement within the DSS can be significantly improved by structural modifications, they should be carried out. The system concept document should report any proposed structural changes for the mainframe system.

The only provision for adding additional criteria at this time needs to be the condition index, but the possibility of other criteria should be considered in the DSS design.

The minimum sub-set of data in the existing system required to be carried forward for the DSS was discussed and a number of tables can be dropped, or summarized, within the database, leading to a much smaller database for the DSS. In particular, correction data need not be carried forward, and some of the history data can be summarized. The complete required data set (91, 92, and 93 data) will be obtained, entered into the database, and the required data set for the DSS will be extracted. This will provide the working database for the prototype development.

Dave Harmon identified the following order of importance for the modeling capability: 1) Scenario Analyst; 2) Financial Analyst; 3) Rank Generator; 4) Criteria Analyst; 5) Statistical Analyst, with items 1 and 2 being essential for the DSS.

7. Coordination of Separate Work Efforts. I have attached a work flow diagram and a

timetable spreadsheet with Gaant chart for the Oracle Port, COMB_DSS development, Interim System development, and the Corporate Solution. The work flow diagram shows the relationships among the work efforts. Note that the Oracle port must be completed before the beginning of the next budget cycle in March. If for some reason, the Oracle port is not complete, the existing WCC-RAMIS system will be used for the budget cycle. The COMB_DSS will simply get its data from WCC-RAMIS rather than from ORACLE-CDC. A working prototype of the COMB_DSS will be ready for integration into the interim system by March 1992. CERL and IWR will work closely to insure that the transition from prototype to interim system is smooth. Once we have one budget cycle under our belts we can concentrate on the Corporate Solution which will more tightly integrate the COMB_DSS into the proposed CEAP architecture for the 90's. This might mean using tools available within the CEAP hardware and software environment for the COMB_DSS. This approach can be explored more fully in the next fiscal year.

8. Communications within IOMT project team. I have attached a communications list for all project team members. CorpsMail addresses are currently available for most project team members, and those members who do not have CorpsMail addresses are urged to get one. This is proposed as the preferred method of communication within the team. Team members present at this meeting, plus Cathy Ballard of WES, are the key contact individuals for information on the project.

9. Action Items. Several items were noted during the meeting that require action by project team members. These action items are listed by individual below:

Deve Harmon	•	provide sample graphics for scenario analyses to Michael Walsh provide OM891 data to Michael Walsh
Dick Males	•	provide COMB_DSS 0.5 to IWR by 9 Dec 91
Connie Rasymakers	٠	provide plan of study on interim system work to project team
Steve Scott	•	distribute FY 92 funds for IOMT work
Craig Strus	٠	provide draft paper on current ABS process by 21 Oct
Michael Welsh	•	provide OMB 91, 92 data to Males provide OMB91 data to Cathy Bellard acquire ORACLE 6.0 for evaluation and testing

Michael R. Walsh Civil Engineer

```
Nemo To File: ABS DSS
From: R. Males
 He: Follow-up to meeting, 10/19/91
Date: 10/15/91
1) On 10/8/91, R. Males, C. Strus, and M. Walsh met to follow up on the previous day's meeting on the ABS DSS. In general, it was agreed that work would proceed, using the existing R:Base database, with emphasis on
restructuring the database in accord with suggestions at the meeting, and
restructuring the database in accord with Suggestions at the meeting, and
development of scenario and financial analysts. At the same time, work will
proceed on developing an ABS explanatory document, essentially an extension of
the work developed by Hari Garbharran, to include a description of the
existing ABS technical system. The document will include a description of the
ABS process, database, analysis methods, and existing hardware/software
environment. This document will be used in the system concept report.
Develop will be the examined further as a potential database platform
Paradox will not be examined further as a potential database platform.
           The following is a list of action items (highest priority denoted with
2)
 * 3 2
Check $'s and other facts in database with Dave Harmon (NRW)
Check out Forest & Trees (HGN, RJQK)

*Check out Oracle 6.0 (HGN/RJQK)

Obtain '91/'92 data from Dave Harmon (HGN)

Prepare Nemo on 10/8/91 meeting (RJQK)
*Restructure ABS Database (ROM)
*Develop 'Version 0.5' of DSS (RNN)
- Explore matching existing reports
           - duplicate existing scenarios
- dupicate existing scenarios

- Writeup on Scenarios/Pinancial Analyst

Send ABS R:Base database to CS (RNN)

*Txamine Graphics from R:Base (CS)

Follow-up with Dave Harmon on example desired graphics (RNN)
Contact Cathy Ballard (NRW)
*ABS Writeup Outline (CS)
Copy of Budget EC to CS, RMO( (MRW)
Contact R. Falmer on ranking comparison technologies (R09)
3)
          The following are key milestones for the next steps of the project:
18 October 91
                                           Outline of ABS status report
18 November 91
                                           Draft of ABS status report available
1 December 91
                                            Version 0.5 COMB-DSS demonstration meeting with Dave
                                            Harmon (R:Base)
                                           Version 1.0 of COMB-DSS available
15 January 92
```

Appendix C Minutes of Project Team Meetings and Technical Memos

morandum for Record From: R. Males To: COMBDES File Re: Meeting at IWR. 12/16/91 1) On 12/16/91, R. Males, M. Walsh, and D. Harmon met to review progress to date on development of the prototype DSS for budget ranking. R. Males demonstrated version 1.0 of the prototype. This version emphasizes scenario building and evaluation. This system, implemented in R:Base 3.1b, provided the following functionality: menu and forms-driven interface to specify scenarios, edit them, and **a**) evaluate the scenario building capability with primary scenarios and composite b١ scenarios, wherein a primary scenario is specified by selection criteria on individual work functions, and composite scenarios are combinations of previously defined scenarios (either primary or composite) evaluation of a given scenario through calculation of financial impact storage of roll-up financial information by division, fccd, and project C) āí. Class The system was developed in accordance with R. Males design memo of 12/10/91. The overall data flow, database concept, and functional capabilities were reviewed. In general, the structure was approved as being suitable to the task at hand, and flexible. Issues relating to increased functionality, speed issues, and future formats of implementation were discussed. Following are comments relating to the design, that need to be addressed in version 1.1: M. Walsh noted that CWIS codes are only unique within a Division, and questioned whether the existing structure for including/excluding CWIS codes was adequate. D. Harmon indicated that 95% of CMIS are unique Corps-wide, 4% are used for Corps-wide activities, and at most 1% are re-used across Divisions, for possible conflict. Accordingly, no change in the current methodology is needed. N. Walsh suggested the possibility of treating Division and Project Class specification in primary scenarios in the same manner as CWIS, FCCD, and OCE rank include/excludes are currently treated, i.e. through entry of multiple detail lines, rather than as a set of fixed fields, as in the current implementation. This can readily be handled. M. Walsh noted the likelihood of other parameters being included in the future in primary scenario specification, and suggested that the design be as flexible as possible, to accomodate this. M. Walsh noted that the existing composite scenario functionality can be utilized to generate lists of work functions that differ between scenarios, i.e. work functions in scenario A that are not in scenario B. D. Harmon noted the need to be able to review the description and funding argument fields associated with a work function. This can be accomplished through an appropriate view definition. Cumulative cost information is desired when a scenario is evaluated, and should be retained. At present, the information is calculated for use in screening out work functions based on a cumulative cost limit, but is not stored in the data base. The cumulative cost calculation program should terminate after the desired total is reached, rather than cranking through all work functions in the scenario. Speed can be increased by using flags, in the primary scenario, to indicate whether processing of includes/excludes should be done. This

requires the user to specify these flags for the scenario. There are advantages and disadvantages to using these flags, in that the flag specification must be maintained. The proposed solution is to allow for the flags, but to warn the user when flags indicate no processing, but data to be processed for includes/excludes is present.

The prototype structure favors developing scenarios in parts. Certain work functions are expected to be 'always in', while others will be 'always out'. The work functions that do not fall into either category, those on the margin, are the ones to be examined most closely. Nethods for facilitating this approach need to be explored.

The report format for the temporary scenario needs to be revised, such that rank is in the first column, and no decimal fields are present for \$ amounts. The FUNCID field needs 4 characters.

The 'save temporary scenario' functionality needs to be modified. Currently, data tables are loaded based on user response to prompts. Various portions of the save functionality need to be broken out as separate items.

The current structure is in error in terms of financial rollups, in that rollups need to be done separately, by appropriation. Currently, appropriation is not separated out. In addition, the history data (1989) needs to be rolled up in this format as well as the other data.

An 'output measure' field needs to be added to the work function, and a selection capacity for this field included in the primary scenario selection process.

An additional method of scenario specification, through direct entry of stored SQL, was demonstrated in concept. This should be implemented, and become the third method of scenario specification.

3) The next iteration of the prototype will again be written in R:Base 3.1b, incorporating the above suggestions, and dealing with additional issues of financial analysis. In addition, attention meeds to be given to rank generator/rank builder functionality, in particular for methods of re-ranking that preserve district rank orders.

4) Forest and Trees software will be used to demonstrate additional, graphics oriented DSS capabilities using the Windows environment and the existing database. The software works off R:Base data bases, or SQL server databases. M. Walsh will be exploring this technology on another project, and will provide guidance.

5) N. Walsh will be obtaining a copy of Oracle 6.0, for evaluation as a platform for the DSS. The key issues relate to speed and flexibility of development tools. Oracle 6.0 is also quite demanding of PC resources (35MB hard disk, 8 mb memory). If the evaluation proves positive, a switch will be made to this environment. The work to date in R:Base has been very consistent with SQL approaches, and should transfer readily to other SQL environments. If Oracle 6.0 is not suitable, it is intended that the DSS be maintained in R:Base. The prototype is to be used, in a PC environment, for the summer 92 budget ranking process. Thus, only these two choices (R:Base and Oracle) will be considered at present in the prototype development process, with a go-no go decision made on Oracle at the earliest possible time.

6) The role of CERL in support of the process was discussed. The specific data structures that need to be obtained from the mainframe Oracle ABS database for '94 data need to be defined, such that CERL can prepare and test the necessary download and import capabilities. Nuch of this information is close to definition, and no particular problems are expected in this arena. The question of providing support to D. Harmon during the '94 budget ranking remains for discussion (CERL, contractor, or a combination), as does the role

Appendix C. Minutes of Project Team Meetings and Technical Memos



Appendix C Minutes of Project Team Meetings and Technical Memos

Corps O&M Budget Decision Support System Second Meeting 0900 23 January 1992 Water Resources Support Center **Casey Building** Fort Belvoir, VA 22060 AGENDA IX. Current Status of Automated Budget System (ABS) under ORACLE Α. **Database** Structure and Data 1. Tables 2. Views 3. Forms 4. Reports 5. Triggers 6. Command files (SQL, C) B. Import/Export Procedures 1. Status of PC ABS PC-ABS to ORACLE exchanges 2. C. Communications 1. PC Asynchronous 2. **CEAP** terminal connections Х. Status of the COMB-DSS Prototype Α. **Review of Version 1.0** 1. Concept 2. Tables 3. Views 4. Forms 5. Reports 6. **Data Dictionary** 7. **Command Files** B. **Demonstration of Version 1.1 Discussion of Future Versions** C. 1. Scenario Builder Financial Analyst 2. 3. Rank Generator Criteria Analyst 4. 5. Statistical Analyst

AI. I'N UNAULE UNE	JUESDON
--------------------	---------

- A. Suitability of ORACLE Database for DSS
 - 1. ORACLE on CEAP computers
 - 2. ORACLE Database and Tools for MS-DOS Version 6.0
- B. Development Tools
 - 1. ORACLE Tools
 - 2. SQL Windows Gupta
 - 3. EASY-SOR Sybase
- C. Communications
 - 1. Access to Database on CEAP
 - 2. Client-Server Approaches
- D. Pros and Cons of Moving to ORACLE now
- XII. Other Items
- XIII. Schedules
- XIV. Action Items
 - A. CERL
 - B. IWR
 - C. PMCL
 - D. WES
 - E. Next Meeting

January 28, 1992

CEWRC-IWR-R

MEMORANDUM FOR RECORD

SUBJECT: Second Meeting of COMBDSS Project Team

1. The second meeting of the project team that is developing the Corps O&M Budget Decision Support System (COMBDSS) was held at the Institute for Water Resources on 23 January 1992. The primary purpose of the meeting was to review progress on the prototype COMBDSS. Attending were: Dave Harmon, CECW-OM; Steve Cone, CECW-P, Ed Japel, CECER-FS, Connie Raaymakers, CECER-FS, Cathy Ballard, CEWES-ITL, Steve Scott, CECWES-HE-E, Bob Athow, CEWES-HE, Michael R. Walsh, CEWRC-IWR; Richard Males, RMM Technical Services, Inc.; and Craig Strus, Planning and Management Consultants Limited. The agenda for the meeting is attached.

2. Current Status of ABS Under ORACLE. Cathy Ballard described the status of the port of the ABS database to ORACLE. All the tables in the database have been moved to ORACLE with very few changes. Many of the forms that are needed to enter and edit information into the tables are also completed. Conversion of the COBOL programs that provide for import and checking of data from the field will begin shortly. Cathy will supply the rest of the team with a description of the tables, forms, reports, etc. that are in the ported database. Cathy also said that she could develop export procedures to provide the data for the COMBDSS in the same fixed-field format that Dave Harmon provided to populate the database initially.

Connie Raaymakers and Ed Japel described the minor changes that are being made to the micro ABS and the communication links to the CEAP machine. Minor JCL changes are needed for the new machine. No problems are foreseen here.

3. Status of COMBDSS Prototype. Dick Males gave a thorough presentation of the overall structure of the COMBDSS and provided a demonstration of the prototype version 1.0. The prototype is being built under RBase 3.1b and is a menu-driven application. The prototype has a fully functional scenario builder and the beginnings of a financial analyst, the two most important modules defined at our last meeting. Most of the comments during the demonstration were directed at the "look and feel" of the prototype and not the underlying logic or concept. Dick will address the "look and feel" issues in the next version of the prototype. Each development team member will be given a copy of the prototype to investigate on their own. Comments on the prototype version 1.0 should be sent to Michael Walsh by February 14. This is necessary to provide enough time to incorporate the comments into the next version of the prototype to be reviewed at our next meeting on March 12.

Initial modules for the rank generator and criteria analyst will be provided in the

Appendix C Minutes of Project Team Meetings and Technical Memos

next version of the prototype. Any ideas on the structure or design of these modules should be provided to Dick Males. The statistical analyst is the lowest priority module and not well defined. Michael Walsh will work on developing the concept and design for this module.

4. The ORACLE Question. Michael Walsh obtained the PC version of ORACLE Database and Tools for evaluation. The ORACLE database is certainly capable of handling the database component of the COMBDSS, but the tools are more difficult to master. The discussion centered on whether we should try and move to ORACLE as the development environment for the COMBDSS. After weighing the pros and cons, the consensus of the group was to continue the development of the prototype under RBase and consider additional options, such as client/server approaches for the next cycle. There are a multitude of front-end tools being announced every day, but the technology is still very new and likely to be fraught with problems. Given the functioning of the early prototype it is evident that the COMBDSS under RBase will be able to accomplish the tasks that occur during the analysis phase of the ABS process. The design of the COMBDSS uses "vanilla SQL" as much as possible to allow for eventually porting to ORACLE with the COMBDSS being developed by whatever front-end tool we can get to work within the CEAP environment. Ed Japel suggested that we talk to Craig Bigelow, NPD about client/server possibilities.

9. Action Items. Several items were noted during the meeting that require action by project team members. These action items are listed by individual below:

AN	•	Review COMBDSS Version 1.0 and return comments to Michael Walsh by Feb 14 Provide comments on ABS Existing System Document to Craig Strus by Feb 7 Note next meeting on March 12 at Headquarters or IWR
Dick Males	•	Provide COMBDSS Version 2.0 for March 12 meeting
Connie Rasymakers	٠	Provide information on transfer mechanisms from field to ORACLE to Craig Strus
Craig Strus	٠	Revise ABS Existing System Document and distribute to development team by Mar 2
Cathy Ballard	٠	provide initial documentation about ABS database under ORACLE to Michael Walsh
Michael Walsh	•	Check on client/server capabilities within the CEAP environment Provide information on statistical analyst for next meeting
Michael R. Walsh Civil Engineer		

Nemo To File From: R. Males Re: New Features, COME_DSS Prototype Version 3 Date: 3-10-92					
1)	The latest version from prior version speed of procession changes are detail	on of the prototy ons. Enhancements ing, simplicity of iled below.	pe system is a significant departure a have been made to allow for greater f concept, and flexibility. The major	r	
2)	Work Function Num	bers			
•	Each work function is now assigned a unique integer number. This information is stored in the 'wf num' field, which has been added to the OMB93 table. These numbers were assigned, starting at 1, in ascending OCE rank order. They are arbitrary numbers, and are used to provide faster access in terms of keys and views, and to allow for external processing of stored scenarios, as described below.				
3)	Expansion of ONB9	3 table			
	The previous vers the original ONB9 class, and low us ONB93 table to in following addition	tion made use of a bla, expanded by in the navigation pro- include these field onal fields:	a sub-set table (OMBALL1) derived from nelusion of the division name, project ject code. The new version expands th ds in the table itself, as well as the	k : 18 k	
	wf_num	integer	work function number		
	user2	integer	user defined		
	level	integer	for future rank generation		
	Thus, all fields included directly	that are used in in the records i	the scenario selection process are no for ONB93.	M	
4)	Use of Scenario N	lumbers			
	As described belo work function num scenario numbers to the current sc	w, new processing ber, as well as t in the required n mario names.	y methods require the use of a unique the assignment of unique integer range (currently 1 to 47) in addition		
5)	Replacement of PE	RMSCEN by Externa	al Bitmap Data File		
	The initial desig function present proved to be slow and the table cou the PERMSCEN tabl given scenario. methods were exam	m maintained a Pi in each scenario. , use of views ag ild potentially gr e was to record a Due to the proble bined.	ERMSCEN table, that stored each work . Processing of composite scenarios gainst this table proved impractical, row quite large. The whole purpose of whether a given work function was in a mas with the PERMSCEN table, other	:	
	A work function's bit, as a 1 (work not in scenario). method of data st with a row for ea flag, for as many	status in a give function is pres This suggested crage for this in ch work function, columns as the s	en scenario can be stored in a single sent in scenario) or 0 (work function the use of bit fields as a compact nformation. A table could be created, , and columns representing the 1/0 maximum expected number of scenarios.		
	This possibility for a field of an of the OHB93 tabl number of scenari storage requirement	was examined with y type in R:Base e (approximately os (approximately int of 3200k bytes	hin R:Base. The minimum field length is 4 bytes. Given the existing size 20,000 rows), and the expected maximu γ 40), this would lead to a data s, and entail slow update processing	m	

Appendix C. Minutes of Project Team Meetings and Technical Memos

through R: Base.

The new release of R:Base, version 3.1c, allowed for user-defined C functions that could be accessed from within an R:Base program. This suggested the possibility of using the integer field to store not simply a single value (1 or 0), but rather a bitmap that could store up to 16 values, and be parsed out as meeded. That is, in a single column, the flag status for up to 16 scenarios could be stored, reducing the meeded data storage requirements. This approach was tested, but again, the overhead of doing update processing within R:Base proved to be excessive.

The current method uses an external data file that simulates a table with bit-wide columns, and a set of external C programs that set and read bits to indicate work function status. Communication with R:Base is possible through use of the R:Base 'sip' command that allows for running of external programs from within the R:Base environment. Using this method, an external binary data file is created, with a single record for each work function. Currently, each record is set at 48 bits wide, allowing for the storage of 48 scenarios. Using this compact form of representation, the required file size is 126k for 21,000 work functions. (Note that it is not necessary to store the work function number, as this is implicit by the record position in the file). C programs (detailed below) to process this data file to read and set bits range in size from 8 to 14k, and can process the entire file in under 15 seconds.

In practice, a 'permanent' scenario is now a 'stored' scenario. A scenario is stored when the bit for the scenario column is set to 1 for each work function in that scenario. The use of work function numbers allows for handling this very simply.

By way of example, the bitmap file can be viewed schematically ds:

	s1	=2	83	84	• • •	•••	s48
wf_num	•	•	•	•			•
2	ō	ŏ	1	ŏ	•••	•••	ō
3	Ō	Õ	ō	Ö		•••	Õ
4	1	1	1	0	•••	•••	1
3	1	1	0	•	•••	•••	U
21,000	1	1	0	i	•••	•••	Ö

Under this example, work function number 1 is present in scenarios 1, 3 and 48, while work function 5 is present in scenarios 1 and 2.

Using this form of representation, it is easy to set all bits for a given scenario, knowing the scenario number and having a list of the work functions. Similarly, it is simple to generate a list of all work functions in a given scenario (by writing the work function numbers to an ASCII file), and to perform boolean operations to set a bit for a work function based on other bits for that work function (as in creation of composite scenarios).

6) Functionality for programs manipulating the bitmap file

The following are the functionalities for the current suite of external C programs that manipulate the bitmap file, and the method by which they are invoked at the DOS command line. (The suffix numbers in the program names are the current development version numbers of each program, and may change before finalizing the functionality). Note that these programs operate entirely independently of R:Base, but mechanisms have been created to pass information between the two data storage formats,

as described later.

CREATE BITHAP FILE:

Create an empty data file for a specified number of work functions;

Usage: BUILDFL5 number_of_records

STORE & SCENARIO:

Given a scenario number, and an ascii file containing a list of work function numbers, set the corresponding scenario bit on;

Usage: STORSCH1 scenario_number wf_list_file

CLEAR & SCENARIO:

For a given scenario number, set the bit in all work functions to off;

Usage: CLRSCN4 scenario_number

GENERATE LIST OF WORK FUNCTIONS IN A SCENARIO:

For a given scenario, generate an ascii file containing a list of work function numbers that are in the scenario;

Usage: DUMPSCN1 scenario_number output_file_name

GENERATE & COMPOSITE SCENARIO FROM OTHER SCENARIOS:

Given an output scenario number (target) and an ascii file containing the scenario numbers to check for add, and the scenario numbers to check for delete, set the target scenario bit to on if any of the add scenario bits are on, and none of the delete scenario bits are on, for all work function numbers;

Usage: COMPSCN3 scenario_number add_delete_file_name

DISPLAY TO THE SCREEN THE SCENARIOS THAT ARE ON FOR EACH WORK FUNCTION:

Read through the file, and display, for each work function, the scenarios that are set;

Two formats are currently provided:

READSCH1: generates a list of the numbers, e.g.

vf 56 5 16 vf 59 5 16 vf 65 5 16 vf 574 16

indicating that work function number 56, 59, and 65 are in scenarios 5 and 16, and work function 574 is in 16.

READSCH2: generates a bit array, e.g.

7)	Nethod of Communication of BitNap Programs with R:Base
	The bitmap programs are activated from within R:Base through the 'sip' command, as noted previously. The actual bitmap file name is 'hardwired' in as DSSETMAP.FIL. Scenario numbers are passed in on the command line, as are file names.
	When it is desired to store a scenario that is in the TEMPSCEN table, the CONE DSS generates an ascii file containing all the work function numbers from the records in the TEMPSCEN table, and then executes the STORSCM1 program, passing this file name, and the scenario number, as parameters. When information needs to be passed back to R:Base, to obtain a list of work function numbers in a given scenario, the DUMPSCN1 program is activated, passing the scenario number and the desired name of the output file on the command line. DUMPSCN1 then generates an ascii file of work function numbers in the scenario. The R:Base 'load from filename as ascii' command is then used to load this information back into the database system. To this end, a new table has been created, WF MUM, consisting of a single field, wf num (work function number). In this manner, it is guite straightforward (and fast) to move information between the two storage formats.
8)	Use of work function numbers in views and sub-selects
	The above noted functionality allows for the creation of a view between the OHB93 table and the WF MUH table. Recall that the WF MUH table stores information retrieved from the external bitmap file. The view WFVIEW is defined on these two tables, giving access to all the fields in OHB93 that are present in WF MUH. Because both tables are keyed on the integer wf_num field, the view processes rapidly.
	In addition to the view, the use of work function numbers allows for simple editing of the work functions in ONE93, based on either a recalled stored scenario, or on the work functions in the TENPSCEN table, by use of a sub-select, e.g.
	EDIT ALL FRON ONB93 WHERE WF_NUN IN (SEL WF_NUN FRON TEMPSCEN)
9)	Status Table
	Groups of work functions may now stored in either of two tables: the NF_NUN table, and the TEMPSCEN table. In order to allow the user to keep track of what scenarios each table represents, a STATUS table has been defined, that keeps track of the scenario name, and date and time of loading, for the WF_NUN and TEMPSCEN tables. A menu option permits the display of information in this table, to remind the user of what scenarios are represented in the two tables.
I.	 Points by Dave Harmon A. Ability to Do intersections when creating composite scenarios B. Financial Analyst Reports C. Summary Reports D. Ability to Show description and funding argument when running report for temporary and permanent scenarios E. Summary tables for omb91 and omb92 need to be rolled up by division and fccd F. Harmon to order R:Base G. RNH to provide species for files to be downloaded H. Meeting with Jim Crews and John Perez to discuss rank analyst. 6-10 April

II.	Add FCCD Prefix Titles to Evaluations Report
III.	Index Temperen on DIVNAN, Projels, PCCD
IV.	Make # of ints in bitmap file a define
Υ.	Add edit of title tables to everes
VI.	nick which ones you want to see in scenario grajustics report
VII.	ware on overwrite of termson
WTTT.	
	the correct entries in when deleting
IX.	Generate cumulative cost - separate functionality
X.	Report by cumulative cost (by division, by ocerank)
XI.	Change manage scenarios prompt in app to picklist
XII.	Intersect acenario
XIII.	In financial reports, 7 columns (format 9,000 000)
XIV.	message throughout to let user know screetbing is herening (or
	confirm) in particular, export
XV.	DIV FCCD Prefix Bollup Table
IVI.	Nake 64 scenarios may
XVII.	Initial Acrossing command file - tallies
XVIII.	Data Checking compand file of for dominande
XIX.	Expect 1st download in mid-suly
XX.	The logic for primery separate week with and between and
	within.
XXT.	Check SOL functionality - and which muching is is the track
XXTT.	confirm manage to manage of
XXTTT.	
TYTU	add gave antige in run agi
YYV	ald save option to menu in enter
YYUT	CARLIN WHEN CHANGE GET SAVEG.
*****	possible functionality ~ show generated sql, save generated sql
AAVII.	needeg Iunctionality - clonse sql

CEWRC-IWR-R

March 23, 1992

MEMORANDUM FOR RECORD

SUBJECT: Meeting on COMB_DSS Version 1.3

1. Dave Harmon, Dick Males and I met on 16 March to review COMB_DSS Version 1.3. This meeting was held in lieu of a general meeting of the development team. The next meeting of the development team will be held in conjunction with the IOMT Field Review Group meeting in Portland during 22-23 April 1992.

2. The COMB_DSS Version 1.3 has been streamlined to make it easier to create, store and evaluate many scenarios, and the processing speed has been increased by using 'C' programs in conjunction with the R:Base database system. We now have the capability to produce scenarios based on any attribute of a work function, such as funding level, FCCD, or District. I have attached a memo by Dick Males describing the new features of the COMB_DSS Version 1.3. I have also attached a schematic drawing of the table and view structure dated 3/11/92.

3. We also discussed a proposal for ranking scenarios. The general idea is to give a score to each scenario and, by association, to each work functions that falls within the scenario. An aggregate work function score is calculated for each work function according to a weighting scheme and the work function scores partition the set of all work functions into sub-sets or groups. All work functions with the same score are placed into a group. Work functions can then be ranked within groups using a variety of algorithms to create a new overall ranking. For example, all work functions within a group can be ranked according to original division rank. This new method works with sets of work functions (scenarios) instead of individual work functions. It could make the evaluation process more manageable. I have attached a short description of the re-ranking procedure written by Dick Males. Dave thought the proposal had promise, but asked us to talk to Jim Crews and John Parez about the idea. He also thought we should get some feedback from the Field Review Group.

4. Based on this meeting we are going to make some technical changes to COMB_DSS Version 1.3, continue to develop the scoring proposal for scenarios, and get ready for the summer test of the COMB_DSS with FY 94 data. The final attachment is a memo summarizing the details of the meeting and specifying work to be done.

5. Please let me know your reaction to the new version of the COMB_DSS, the proposal for scoring scenarios and anything else on your mind about this project. If anyone wants a revised version of the COMB_DSS before the Portland meeting, let me know.

Michael R. Walsh

POTENTIAL EVALUATIVE (RE-RANKING) PROCEDURES

Two general methods for ranking work functions are formal combinatorial ranking procedures, and 'grouping and assessment' procedures. The latter approach appears to be the preferred method for the new ABS ranking process.

In formal combinatorial methods, points are awarded based on the values of various factors for each work function and then these factors are weighted and the total score calculated for each work function. Work functions are ranked according to their score. In grouping and assessment procedures, methods are used to select work functions that fit into various groups based on values for selected factors and then these groups are assessed and work functions ranked based on their placement in a group or multiple groups.

For either method, it is key that factors are defined for each work function that reflect the desired decision variables. For example, if HQ wishes to minimize the risk of environmental disasters, then a factor is required for each work function that measures the potential risk. Following are several factors that may be useful in any national ranking procedure:

- Measures of the potential of risk and the extent of risk to safety, environment, and monetary damages associated with not funding a work function in the present year. The potential of risk reflects the present condition of the facilities and how that could affect the chances that some negative impacts will occur if the work function is not funded. The extent of risk is a measure of the potential level of negative impacts.
- Potential contribution of the work function to possible national goals such as improving the environment, increased recreation, improved navigation safety. These factors could change each year to reflect national goals or could remain constant and then be 'weighted' differently in the ranking procedure based on national goals. Additionally, it is possible that these factors could be derived in part based on the work function category associated with each work function.

The 'scenario' approach utilized in the COMB DSS is an example of a grouping and assessment procedure. In this approach, a work function is identified as either being in or out of a particular basic scenario based on values of one or more factors for that work function. These basic scenarios may then be aggregated through boolean logic (e.g. all work functions in scenario A or scenario B but not in scenario C) to create composite scenarios. It should be noted that scenarios may be defined to reflect a positive (e.g. high Division preference) or negative (e.g. high costs) grouping from the point of desirability but that this judgement is explicitly made at the later assessment stage rather than at the grouping stage.

RE-RANKING METHODOLOGY

The work functions initially receive 'bogus' OCE ranks, derived from funding levels and Division ranks. The ultimate goal of the existing budget process is to obtain an ordered list of work functions, and define a 'cut-off' rank above which all work functions are funded,

Appendix C. Minutes of Project Team Meetings and Technical Memos

and below which work functions are not funded. In theory, as funds availability changes, this cut-off rank will move up or down the list of work functions, but the ordering of the list should not change. In the OCE ranking process, work functions are 'moved around' in the list (in regards to their original rank ordering) necessitating a re-ranking to obtain the final ordered list. The existing process in effect groups work functions into 'fund' and 'no-fund' groups, after which a re-ranking is required. An objective of the re-ranking is the preservation of lower level (Division/District) ranks, insofar as possible.

A proposed method of performing the re-ranking makes use of the scenario concept, and the bit map file that records the presence or absence of a work function in a scenario. At the start of the re-ranking process, then, it is assumed that we have all scenarios defined, we know what each of these scenarios means, and we have (in the bitmap file) the complete assignment of all work functions to scenarios. The initial goal is to partition all work functions into groups (with each group assigned a numeric 'score'), within which OCE is indifferent as to the relative position of the work function within the group. That is, scenarios are used to assign identical integer score values to work functions in the scenario.

Each scenario is assigned a numeric score (not to be confused with the funding level of 1, 2, 3, or 4), with the lower score representing the most desirable. Different scenarios could each be assigned to the same, or different, scores. Such a score would in some way reflect national policy, and the priority to be given to the group of work functions in the scenario. OCE, for example, might define a range of from 1 to 50 for scoring, and assign each scenario a value in that range. A 'Scenario Scoring Table' would hold the score to be associated with each scenario.

Once the Scenario Scoring Table is defined, the next step would be to assign scores to the individual work functions. If a work function is in only a single scenario, it would be assigned the score of that scenario. If a work function is in multiple scenarios, other alternatives are possible. A work function could be assigned a score based on the lowest score for any scenario in which it is included.

Alternatively, if, in the re-ranking process it is desired to recognize the value of a work function being included in more than one scenario, a work function's score could be the sum of levels for all scenarios that it is in. Still another possibility is to assign weighting factors to scenarios, and develop a score based upon the individual scenario scores and weighting factors, for each scenario in which a work function is located. These options depend upon the manner in which scenarios themselves are defined (do they overlap, or are they completely disjoint sets of work functions?) and used.

In any case, once the work function score has been determined, the work functions can be ordered by this score. If, as in the example above, a range of 1 to 50 is defined for the score, this will define 50 groups, within which OCE is indifferent as to the local ordering. At this point, any of a number of algorithms could be used to provide a distinct ordering within the score group. If, for example, Division rank is to be preserved within a score group, then an algorithm similar to the bogus rank assignment process could be used. A 'shuffling' procedure, based on developing sets of work functions in a group by Division (ordered by Division rank), and then grabbing work functions from each Division in sequence (with the se-sequence randomized for each pass through), would provide a measure of fairness. Other factors could be developed to do the 'within score group' ordering, based on information stored in each work function's record.

In keeping with the modular concept of the COMB DSS, and the 'grouping and assessment' approach, once a final re-ranking has been determined, it could be passed through a Rank Analyzer Module. This module would examine the ranked list, and point out defined anomalies, i.e. situations in which a less desirable Division ranked work function has been placed, in the final list, ahead of more desirable work functions. In this manner, the impacts of the re-ranking could be examined, and alternative re-rankings investigated. Inasmuch as this process now comes down to re-defining the scenario scores, and perhaps cross-scenario weights, and given the relative speed of the rank generation and assessment, it should be possible to explore a number of alternatives during the re-ranking effort.

In summary, the proposed re-ranking design requires an indifference to the detailed ranking of work functions within score levels. Through use of the scenario concept, and appropriate definition of scenarios, it should be possible to readily define score groups, perform reranking, and assess the results of the re-ranking. There should be no great difficulties in rapidly developing prototypes of the re-ranking and rank analyzer software. Obviously, considerable experimentation will be required to learn to use and fine tune this approach.

Appendix C Minutes of Project Team Meetings and Technical Memos

To: C. Strus From: Dick Males Re: Required Specifications for Divison-Rank Preserving Algorithm The proposed ranking methodology involving scenarios, scenario scores, and work function scores has been outlined previously, and is shown schematically in the accompanying wpg files. In effect, each work function will end up with a non-unique integer work function score, 1) function ranks that respect the division ranking. Thus, the basic input to the algorithm is a list, as follows: wf num division wf_score div rank 234 HAD 23 17 256 NAD •• • • The work function score is expected to be an integer probably in the 1 to 100 range (1 better). The division rank and division are the codes currently in the ABS database that you have. The work function number is the new, arbitrarily assigned integer number for the work function (I believe the version you have contains this work function number). This list will be output as an ascii, fixed format file. I currently propose to sort the list by wf_score descending, division, and division rank ascending. This will group the work functions by score, then by division, and then by inverse division rank. The desired output is a list (ascii file) of wf_num and unique integer ranks, starting at 1 and increasing (1 is better). This can then be input into the R:Base system for further processing. The output would be a fixed format file. 2) The algorithm I am proposing will act as follows: read all the work functions from the input list, for the current work function score, into stacks (one for each division), such that each division now has a 'pile' of work functions, with the best division rank on the top of each pile. (By ordering the input list in inverse division rank order, we can set up these a) stacks so that they end up with the best on top). Randomize the divisions. Then pick up the work function on the top of each stack for each division, and put it in the output b) list. Re-randomize the division order and repeat, until no work functions are left in the stacks. Read the next group of work functions at the next work function score level and repeat the process, until the input list is C) exhausted. I do not see this as anything too complex at this time. I don't think it should take more than a day or two max to implement. The only tricky thing is keeping track of the input buffer at the end of each work function score group, that signals the change in work function score. This has to be kept around while processing the previous group, and then used to initialize the stack in the next group. Let me know what you 3) think.

```
Date: 5/29/92
 To: Dick Males
From: Craig Strus
Re: Re-ranking
 To better accomodate the possible ways the data might be sliced, diced, and
scored, I have implemented the linked-list approach to allocation of memory.
In testing the approach, I was able to define, for a given score and division,
18,XXX work functions. I think (hope) that beyond this, the user must rethink
the slicing of data. The underlying problem is that we are running in real
mode (I have about 580k free at the dos prompt). If this approach fails, two
 other options are available. The first option would be to write each stack to
 its own output file which assumes, as you mentioned previously, that the input
file is ordered in opposite order. The second approach is to use a dos
extender and perhaps Natcom or Sortech C++ in protected mode to access larger
arrays.
The basic structure is as follows:
struct WFURStruct
    {
      char
                       DivHam[4];
      long int
long int
long int
                        DivRank:
                        WfHum;
                        WfScore;
      struct
                        WFURStruct *LastNode;
      struct
                        WFURStruct *NextNode;
   32
This holds all of the list elements for a given stack.
// The division stack pointers
struct WFURStruct DivIndex[MaxDivisions];
This points to the bottom of each stack for each division.
struct WFURStruct *GetWFUR;
struct WFURStruct *CurrWFUR;
struct WFURStruct *NextWFUR;
struct WFURStruct *LastWFUR;
These are pointers used to get memory, link elements together, and transverse through the lists themselve. The only pointer address that actually gets memory is GetWFUR. I hope this proves adequate. Please beat this up and let
me know what you think.
Thanks.
Craig
```

June 8, 1992

CEWRC-IWR-R

MEMORANDUM FOR RECORD

SUBJECT: Meeting on COMB_DSS Version 1.4

1. Dick Males and I met on 3 June 1992 to review the COMB_DSS Version 1.4 prototype. We spent the day testing the functions of the COMB_DSS in preparation for installing the prototype on Dave Harmon's PC. I tested the prototype by creating, editing and running several scenarios that selected different groups of work functions. We found some 'bugs' in some of the menu selection functions. Most were fixed on the spot, while some will be fixed in the next iteration of the COMB_DSS Version 1.5. Dick will provide me with a copy of the new version by 19 June 1992.

2. Dick and I met with Dave Harmon on 4 June 1992 to install COMB_DSS Version 1.4 on his PC and to discuss a plan of action for supporting Dave during the analysis phase of the budget process that will start after 15 July 1992. Dave's PC is a 486 50 MHz Compaq and the COMB_DSS was able to generate rather large scenarios in less than 5 minutes. Overall, the processing time for generating, evaluating and reporting on scenarios is satisfactory. Further improvements in Rbase software will only speed the system.

3. After testing and fixing the system for some time, we discussed how to use the COMB_DSS to assist with the currently defined process of work function analysis. We are quite certain that the COMB_DSS can make the existing analysis process easier than in the past. We need to think more about how to use the COMB_DSS to assist with analysis at sub-levels (more than 1,2,3 and 4) and to allow selection of work functions based on additional criteria, such as condition indices, economic benefits and other work function ε butes. The scenario development and ranking procedures available in the COMB_DSS will support a more detailed analysis, however, we really have to think about what analyses make sense to make better decisions about the budget.

4. I would like to have a meeting of the COMB_DSS development team on 1 July 1992 at IWR to discuss the status of COMB_DSS, develop a plan of action for supporting the O&M budget process and documenting the process to determine what we did right and wrong with the COMB_DSS and to think about the future of the prototype after this budget cycle. The 1 July date will give us some time to make any minor changes to the COMB_DSS and devise a plan for assisting Operations in using the COMB_DSS before the 15 July beginning of the analysis phase.

Michael R. Walsh

Nemo From: Re: R Date:	Nemo To File From: R. Males Re: Revisions to COMBDSS, Version 1.5, and Usage Notes Date: 6-16-92				
1)	Based on the previous memo (6/5/92), a number of changes were the COMBDSS. The new application is COMBDSSK. The status of changes detailed in that memo are indicated below. All items those listed below have been completed:				
	•	Check the revised SQL generation capabilities under a variety of circumstances, to insure that the generated SQL is proper and has the appropriate syntax; [more checking in next round of testing]			
	•	Check possibility of automatically detecting the presence of wildcard characters in the add/delete/intersect forms, when generating SQL; [not implemented at this time]			
	•	Change the display format of the total cost figures on screen, to remove the .00; [done where problem known to exist - not readily possible in browse screens, forms oriented viewing of workfunc table]			
	•	revise remarking so that remarks increment by 3 instead of 1 [done - implemented as a variable, currently set to 3 in the command file]			
	•	Develop documentation binder; [not done]			
	•	generalize the command tree documentation program to accept any extension; [not done as yet]			
	•	consider placing command on menu to re-establish the bitmap file; [decision not to do]			
	•	consider database backup and checking commands for menu; [database checking implemented; stub program for database backup exists (on menu, but not implemented)]			
	Note detai	that, because a variety of new command files have been created, the led programmer level documentation needs to be updated.			
2)	In the modifinant of cha	e course of carrying out these changes, a number of structural ications were made to the system. In particular, generation of the cial rollup reports with titles and break totals required a number anges, as follows:			
	Use o	f Crosstab Tables for Reports and Export			
	A new imples cases, techn. Nicros	method of developing the financial scenario comparison reports was mented. The previous method was time-consuming, and for some , incorrect. The new method makes use of a modification of a ique presented in the R:Base Exchange Newsletter published by rim. in which the results of a crosstab command are loaded into a			
	table genera dolla: report break total: quick: report SCENRI crossi	The crosstab table is generated by running a command file that ates a table in which each row represents the appropriate sum of rs for division, fccd, fccd prefix, etc., for up to 7 scenarios. A t is then run against this table, allowing the proper definition of totals. This technique proved necessary to get the proper break s for the fccd prefix and fccd rollup reports, and operates more ly than the previous method, so it was extended to all financial ts. The command file that performs the overall processing is EP7.CMD, and CTAB4.CMD, called from SCENREP7.CMD, generates the tab tables.			

Appendix C Minutes of Project Team Meetings and Technical Memos

Because the crosstab tables are built prior to running the reports, they are available for browsing from the 'browse any table' menu item. More importantly, this presents an alternative method of developing export tables, using the 'unload data as socii' option, rather than generating a specially-formatted report. Accordingly, the export and report menus have been combined. Selection of either the export or report for a given report type (e.g. by division) will result in the generation of a corresponding crosstab table, from which the report is printed and/or the export data file is generated.

Note that this method of generating export data does not give all of the titles associated with each row of the report, simply the data items.

Title Table

A new table was created, 'scentitle' containing three text labels for each scenario, to be used in the reports. The 'Set/Edit Scenario Titles' on the 'Manage Scenarios' menu performs the following functions:

- a) the div_s_\$ table is scanned for any scenario names not currently present in the scentitle table, which are then inserted into the scentitle table;
- b) the third label (the bottom-most on the report) is then set to the scenario name, if the label is blank;
- c) the user is placed in edit mode, to allow for maintenance of the tables.

In this manner, the titles table will always contain the scenario names for all scenarios that have been stored, providing that the set/edit scenario titles option is selected.

FCCD Break Totals - Definition and Labeling

In order to provide the desired break totals on the FCCD and FCCD prefix reports, a new column, fccdbrk, was added to the FCCDFRTI (fccd prefix titles) table, to indicate the break level associated with each fccd prefix. Break totals in the fccd-based reports are triggered when this value changes. The values can be edited through the 'browse any table' option.

The title to be applied to the break total on the report (e.g. 'Sub-Total for Operations' for break level 1) is found in the brktitle table, which can again be edited through the general browse option.

Re-Rank Evaluation Reports

The requested reranking evaluation reports have been created. The 'out of order' report is now an exception report. A report for 'waiver moves' gives work function information for work functions that have been moved into or out of the waiver level. A report on level moves similarly gives work function information for work functions that have changed funding levels. Proper functioning of these reports requires that scenario scoring be assigned based on a strategy of assigning twodigit scores within funding levels, e.g. all scenarios desired to be in funding level 1 must have their scenario scores from 10 to 19; similarly, all scenarios to be maintained in waivers must be scored 28 or 29.

An additional report has been created to generate a report on work functions within a user-specified range of generated ranks (newrank). This report also provides a list of all of the scenario numbers that the particular work function is in. This is accomplished through the R:Base User Defined Function (UDF) feature, that allows a C routine to be called from within R:Base. In this case, a C program has been created to read the bitmap file for a given work function number, and return a list of the scenario numbers that are set for that work function. [The capability to provide scenario names, rather than scenario numbers, was requested by Mike Walsh. This capability was created, but is more timeconsuming than the generation of scenario numbers. If desired it can be implemented in place of the numbers.]

Each of these reports provides detailed information about each work function that appears in the report, based on information in the workfunc table. This information is obtained through the use of the WFINFOLCHO command file, which obtains, formats, and outputs the information for a work function. Accordingly, if the present output format of workfunc information needs to be changed for these reports, the changes are localised to this particular command file.

Speed Considerations

Most of the operations are tolerable in terms of speed, if implemented on a 486 machine with adequate memory, and use of a disk cache. Processing small scenarios is fairly quick, while larger scenarios are more time-consuming.

Certain operations, particular those that are based on the wfscr view (the view that joins the wf value and workfunc tables), can be slow, particularly if sorting and/or grouping is desired. These operations are primarily used in the reporting on work function scores and in the re-ranking generation and evaluation.

:

Nemo To File CONBDSS From: R. Males Date: 7/2/92 Re: Meeting at IWR, 7/1/92 A review meeting for the COMEDSS project was held at IWR on 7/1/92. Attending were: Ed Japel, Connie Rasymakers, Steve Scott, Mike Walsh, 1) Dave Harmon, Craig Strus, and Dick Males. Progress since last meeting was reviewed, and the major technical changes to the system were described. 31 Dave Harmon outlined the general timetable for preparing the budget submission. On 7/17, the reclamas should be completed. On 7/22, John Elmore is to be briefed with an initial scenario analysis. On 7/24, a briefing is scheduled for Steve Dola in the ASA office. Per Dave Harmon, last year, 3 scenarios were examined - a 10% cut, a 5% cut, and a recommended budget. From 7/24 through f/1, additional modifications and analysis of the budget are made. Most of the higher-level input is not at the work function level, but rather as a request for an 4 cut or increase by fccd, class, or division. Dave Harmon has, in the past, generated scenario analysis once a week during this period, with the interim time used for analysis of the results Development of the new ranking is done in the last part of August. Dave Harmon expects approximately 21000 work functions in the submittal this year. The desired product of the IONT work unit for this fiscal year, in addition to the actual CONEDSS, will be a brief report, containing the system concept and design, a description of the implementation, a summary evaluation of the results of the implementation, and suggestions and guidance for further work. Appendices to this report will contain the previously-produced description of the ABS process, documentation of the content of the results of the the base process. 3) the COMBDSS system, and the assessment report on the implementation process. A debriefing meeting on the project will be held late in September, or early in October. Methods of informing the Divisions of the status of the work were discussed. The annual budget conference (Seattle, March 93) was suggested, or, alternatively, a fall time frame workshop. discussed. Various strategies and approaches to performing the analysis using the CONBDSS were discussed. A 'dry run' to test the process, using the currently available '94 workfunction data (prior to 4) reclamas/corrections), was suggested, in the week of the 13th of July, to test the technology, develop scenarios, and devise strategies for the analysis. The developed scenarios would then be re-run with the final work function data, once it became available. The 'dry run' was approved. 51 A demonstration of the major features of the COMBDSS Version 1.5 was presented by Mixo Walsh. During the course of this presentation, some modifications and revisions were defined, as described below. 6) Following the meeting, Dave Harmon provided the revised 1994 data, Following the meeting, Dave nation provided the levies 1994 data, including all rollups, and the currently available '94 workfunction data. Old data was cleared out of the COHBDSS, new data imported, and a '94 database was prepared, as the starting point for analysis. A number of tables were eliminated from the database, per Dave Harmon, as not being needed for the analysis (purpose, history, reason, year, interest,
	fundl workf pcls_	ev, and dredge). Data for the tables catfeat, cattit, projct, Sunc, and the rollup tables (div_s_\$, fccd_s_\$, fccddiv_s_\$, and s_\$) were imported, using Gateway, based on Dave Marmon downloads.
7)	Actio	n It es
	Dave downl furth syste atten COMBD	Harmon will verify certain data noted as problematic in the oad process. Mike Walsh will work with the '94 database for er testing. Dick Males will make the needed modifications to the m (see below). Dick Males, Connie Raymaakers, and Mike Walsh will d the 'dry run'. Craig Strus will take the lead on developing the SS documentation package.
	Dick Craig	Nales will provide Cincinnati Chili recipes/spices to Steve Scott, Strus, and Connie Rasymakers.
8)	Syste	m Nodifications
	•	Mditional scenario report - major class breakout
	•	Check on number of available scenarios (should be 128)
	•	Place available numbers pick list in cloning functionality
	•	Check on issue of rules on/off for insert of composite scenario, see about method of speeding up this process
	•	check when bit is set in composite scenario generation
	•	add default scenario title line in scenario titles table after the scenario is stored
	•	delete temporary tables after they are no longer needed, to minimize number of tables in database
	•	add a new field to the workfunc table (other, for cost breakout)
	•	look for methods of speeding up the logic checks, and eliminate the checks on the year table.
	•	examine the system (forms/reports) for use of the nint function, and replace this with the proper form for determining the fccd prefix.

Appendix C Minutes of Project Team Meetings and Technical Memos

•

To: Mike Walsh, Dave Harmon From: R. Males Date: 7/5/92 Re: Modifications to Version 1.5 The following modifications to version 1.5 were specified in the previous Item 1. This memo documents these changes, and any issues associated with them. Item 1, relating to the major class breakout, needs attention, as described below. Running the logic check revealed some problems, that need attention. Note also the revised usage for the composite scenarios (item 12 below). The final two items (11/12) were not mentioned in the previous menu, but were discussed as needed changes at the 7/1 meeting. Additional scenario report - major class breakout 1) The major class breakout report was added, in both print and export formats, to the list of financial reports. The major class breakout formats, to the list of financial reports. The major class breakout report is based on the project class crosstab table (PCLSXPRN). This table is used to generate a new driving table for the major class breakout report, based on a two step process, in which a temporary table is created by a join of PCLSXPRN with the CLASS table, which has been modified to contain the needed class numbers. This temporary table then provides, for each project class, the associated four digit class numbers meeded. An insert select based on these table, grouping by class number, is used to build the NAJCLSEK table, which is the driving table for the report/export. This process is carried out by the command file BLDCLSBK.CHD. The CLASS table has been expanded to provide the necessary information for this process, as follows: TEXT projels 2 INTEGER catclass INTEGER classnum INTEGER classbrk TEXT 50 maiclass TEXT classlook 50 TEXT clstitle 54 (projcis& classlook) where classnum is the 4-digit number appearing in the report. The classick field defines the break/rollup lovel for subtotals. Majclass is the class title to be used in the major class breakout report, while cletitle is used for the pop-up menus for selecting a project class, as these title descriptions are different. The table was developed based on the 'calculated data elements table' provided by Dave Harmon. A portion of the revised class table appears below. Revised Class Table pr catc class cla majclass classlook -----NT 114 1145 11 MITIGATION BANKING -0-NS 114 1146 11 COASTAL WETLAMUS INITIATIVE -0-NU 114 1147 11 COASTAL INLET RESEARCH -0-PROGRAM NV 114 1148 11 RIVER CONFLUENCE ICE RESEARCH -0~ NG 120 1200 12 REGULAR LOCKS AND DAMS MAJOR REHABILITATION OF

LOCKS AND DANS HL 120 1200 12 NAVIGATION - LOCKS AND DAKS HAVIGATION - LOCKS AND DAKS NX 124 1240 12 NAINTENANCE RESEARCH (RENR -0-IIV FF 210 2100 21 REGULAR RESERVOIRS NAJOR REHABILITATION OF FLOOD CONTROL RESERVOIRS FR 210 2100 21 REGULAR RESERVOIRS FLOOD CONTROL - RESERVOIRS FS 211 2110 21 SCHEDULING FLOOD CONTROL SCHEDULING FLOOD CONTROL RESERVOIRS RESERVOIRS RP 213 2130 21 -0--0-FW 214 2140 21 WATER CONTROL RESEARCH -0-PROGRAM Note that the majclass and classlook titles are not the same. The break titles for the report are defined in the CLSBTITL table, defined as follows: 1 classbrk INTEGER 2 clsbtitl TEXT 50 classbrk clsbtitl 1 -0-2 -0-3 -0-4 -0-5 -0-11 NAVIGATION 12 LOCKS AND DAMS 21 RESERVOIRS 22 CHANNEL IMPROVEMENT **30 MULTIPLE PURPOSE 40 PROTECTION OF NAVIGATION** 50 NATIONAL EMERGENCY PREPAREDNESS 60 POLICY AND PROCEDURES OPTIONS FOR PROJECT O & M 80 SAVINGS AND SLIPPAGES IMPORTANT: I was unable to \sim becoduce the sample report provided by Dave Harmon as the major class breakout summary. My attempt at doing this is attached at the end of this document. Problems exist in the correspondence between project class and class number, and in the dollar figures. The CLASS table needs to be revised to reflect the desired correspondence between project class and 4-

Appendix C. Minutes of Project Team Meetings and Technical Memos

C53

digit class number, and the appropriate rollups ωt . The CLEBTITL table needs to be revised to reflect any changes in the subtotals.

The following is a tally of the project class codes in the WORKFUNC table, and in the PCLS_S \$ table (reprepenting the history rollup). Note the NULL values, and the discrepancy between these lists and the list in the 'calculated data elements' table, in particular for the historical values.

Tally from WORKFUNC Class Number

FC	495	жа	4
FI	136	NC	1969
F R	9806	ND	3
78	38	NG	15
GE	184	NL	2121
GI	24	M	12
GN	32	PA	8
GP	220	PD	6
GS	62	PN	11
ЯР	4	PR	12
JON	1895	PS	42
MP	4092	~0-	1

۱.

τ.

Tally from PCLS_6_\$ Projels BC EF EX FA FC FE FR FS FW FX GE GI GN GP GS MP MR MD MP NA MB NC MD MF MR MN ND NF NG ND NF NG NR ND NF NG NR ND NT NU NV NX PA PC PD PR PS PV PW PX PP SS <tr< th=""><th>Mumber 4 1 -0- 4 1 1 1 1 1 1 1 1 1 1 1 1 13 1 1 13 1 1 13 1 1 13 3 3 3 3 3 3 3 3 11 1 1 12 1 1 13 1 1 14 1 1 15 1 1 16 1 1 11 1 1 12 1 1 13 1 1 14 1 1 15 1 1 16 1 1 17 1 1 18 8 2 19 1 1 11 1 1 12 1 1</th></tr<>	Mumber 4 1 -0- 4 1 1 1 1 1 1 1 1 1 1 1 1 13 1 1 13 1 1 13 1 1 13 3 3 3 3 3 3 3 3 11 1 1 12 1 1 13 1 1 14 1 1 15 1 1 16 1 1 11 1 1 12 1 1 13 1 1 14 1 1 15 1 1 16 1 1 17 1 1 18 8 2 19 1 1 11 1 1 12 1 1
--	---

Appendix C Minutes of Project Team Meetings and Technical Memos

2)	Check on number of available scenarios (should be 128)
	fixed
3)	Place available numbers pick list in cloning functionality
	This is already present. I am not sure what is desired.
4)	Check on issue of rules on/off for insert of composite scenario, see about method of speeding up this process
	The insert process was based on an insert from wfview. I revised the process (see WFTOTEDP.CMD), getting a 20% speed enhancement. Rules are set off.
5)	check when bit is set in composite scenario generation
	In COMPSCN3.C, the bit is set for the composite scenario as it is calculated, while the temporary scenario is being generated. It is re-set when the temporary scenario is stored.
6)	add default scenario title line in scenario titles table after the scenario is stored
	This is done so that we are assured that a scenario title will appear in the Financial Analysis reports, even if the user does not edit the scenario titles table. Done.
7)	delete temporary tables after they are no longer needed, to minimize number of tables in database
	Done. Approximately 60 tables are resident in the database. The generation of Division/FCCD financial reports will create tables for each division (up to 12), so we should be within the 80 table limit.
8)	add a new field to the workfunc table (other, for cost breakout)
	Done.
9)	look for methods of speeding up the logic checks, and eliminate the checks on the year table
	Checks on non-existent tables (year, fundlev) eliminated. Logic check process ran in under 15 minutes, so no additional speed-up was attempted. NOTE THAT LOGICAL CHECKING PROBLEMS WERE REVEALED.
10)	examine the system (forms/reports) for use of the nint function, and replace this with the proper form for

determining the fccd prefix.

Modification made in reports fcprxprn, dfprxprn, fccdxprn, used in the financial analysis reports on FCCD, FCCD prefix, and Divison FCCD prefix. Quick check looks ok, needs closer look.

11) Best/Sum

The work function scoring is locked into Best mode, with no menu appearing to select Best or Sum. The Sum functionality is still retained, but is not currently accessible.

12) Modifications to Composite Scenario Usage

Due to confusion between the types of composite scenarios, the terminology has been revised. A 'U' scenario (union scenario) will provide the union of work functions specified, i.e. any work function in any U scenario is in the composite. An I (intersect) scenario gives the intersection of the I work functions, i.e. the workfunction must be present in all I work functions to be included in the composite. The 'S' scenario subtracts work functions in the S scenarios from the work functions in the I scenarios. The S scenario cannot be combined with the U scenarios, only with the I scenarios, and I and U are also mutually exclusive. When S and I are processed jointly, the I scenarios are processed first, and then the S scenarios are subtracted.

THIS HAS NOT BEEN TESTED EXTENSIVELY, and needs careful examination.

Projoc Operations en B	FY 1 t Class Cast d Maintanano 7/04/92	904 Dummery Repo e, General Ap 11:45:38	rt propriation
	BLDGE192	BUDGET93	EXPEND91
EC CONTINUITY OF GOVERNMENT PREPAREMESS EF MATIONAL EMERGENCY FACILITIES EP MOBILIZATION PREPAREMESS EX FA FC FLOOD CONTROL - CHANNELS FE	0 0 0 11,003	0 0 200 13,580 4,000	2,474 2 3,494 0 16,349
FF NAJOR REMAILITATION OF FLOOD CONTROL RESERVOI FH COST SHARED RECR. DEVEL FLOOD CONTROL RESER FI HISPECTION OF NON-FEDERAL LEVEES FN HISPECTION OF NON-FEDERAL LEVEES FR FLOOD CONTROL - RESERVOIRS FS SCHEDULING FLOOD CONTROL RESERVOIRS FM FX MAJOR DENAR AT MENTINE REPORTS ADDRESS	380 0 7,816 255,469 2,852 0 0	0 0 7,335 0 256,569 3,150 675 3,931	2,236 60 7,625 1 247,153 3,267 0
NH COST SHARED RECL. GUELTOLE FUNCTION NH COST SHARED RECL. GUELT - NULTI-FUNCTORE PROJS NH NULTIPLE PURPOSE - NAVIGATION ND NULTIPLE PURPOSE - NON NAVIGATION NG NAVIGATION - CHANNELS AND MARGORS ND NAVIGATION - DIKED DISPOSAL NF NAJOR REMABLITATION OF CHANNELS AND MARGORS	•,467 0 135,412 227,223 510,795 356 0	11,974 0 136,875 227,380 600 529,428 2,061 0	971 12,768 130,179 203,496 0 496,824 592 4.444
NG MAJOR BEMABILITATION OF LOCKS AND DANS NL HAVIGATION - LOCKS AND DANS NM MAVIGATION - MITIGATION OF SHORE DAMAGE ND NR NT NU NV NV NV	5,843 299,625 1,133 0 0 0 0 0 0 0 0	4,171 287,832 708 2,000 4,000 1,000 3,500 650 8,036 6,000	7,045 283,992 744 0 0 0 0 0 0 0 0 0
PA RENOVAL OF AGUATIC GROWTH PC PROTECT, CLEAR AND STRAIGHTEH CHARMEL (SEC. 3) PD PREVENTION OF OBSTRUCTIVE DEPOSITS PG GENERAL REGULATORY FUNCTIONS PH SURVEY OF NORTH CENTRAL LAKES PF DRIFT RENOVAL PS PROJECT CONDITION SURVEYS	4,453 0 1,332 0 0 0 7,199 8 558	4,397 50 1,222 0 3,537 8,000 7,713	4,481 56 1,474 0 2,330 0 4,926
PV REMOVAL OF SUMMERI VESSELS PJ WATERBORNE CONNERCE STATISTICS PX RP SS	0 0 0 0 0 0 0 0 75,127	1,000 4,079 100 1,000 0 0	•,• • • • • •
	1,561,548	1,557,005	1,448,630

FY 1994 Mejor Class Breakout Report Operations and Maintenance, General Appropriation 07/04/92 11:45:40

111 MAYIGATION CMANNELS AND MARSONS 510,773 520,428 490,52 112 MAYIGATION DICED DISPORAL 336 2,061 557 116 MAURENTION DICED DISPORAL 511,149 531,489 501,889 213 COST SMARED RECR. DEVEL. FLOOD CONTROL RE 0 0 64 222 INSPECTION OF NON-FEDERAL LEVEES 0 0 0 64 232 COST SMARED RECR. DEVEL. FLOOD CONTROL RE 0 0 64 232 COST SMARED RECR. DEVEL. MALTI-PURPOSE PR 0 0 12,764 320 COST SMARED RECR. DEVEL. MALTI-PURPOSE PR 0 0 12,764 440 GENERAL REQULATORY FUNCTIONS 0 0 2,472 540 SUB TODI LIZATION PERPAREDRESS 0 0 3,469 520 547 316 MODI LIZATION PERPAREDRE MERSANEDRES 0 2,000 577 3116 MARIEGAL 0 0 5,777 1140 6,000<	Class Title	BLIDGE 192	BLIDGE 193	EXPEN091
SUBTOTAL 511,149 531,489 501,889 213 COST SMARED RECR. DEVEL FLOOD CONTROL RE 0 0 0 222 INSPECTION OF NON-PEDERAL LEVEES 0 0 0 SUBTOTAL 0 0 0 0 SUBTOTAL 0 0 0 12,764 SUBTOTAL 0 0 12,764 440 GENERAL REGULATORY FUNCTIONS 0 0 0 SUBTOTAL 0 0 2,474 1100 MOBILIZATION PEPAREDMESS 0 0 2,474 SUBTOTAL 0 0 2,474 1100 MOBING REGENERS 0 0 2,474 11100 MOBING PERSONETES CONSTAL PROJECTS 0 2,474 11100 MOBING REGENERTE PAREDMESS 0 0 0 <td>111 HAVIGATION - CHANNELS AND MARBORS 112 MAVIGATION - DIKED DISPOGAL 114 MAJOR REHABILITATION OF CHANNELS AND MARBOR</td> <td>510,793 356 0</td> <td>529,428 2,061 0</td> <td>496,824 592 4,464</td>	111 HAVIGATION - CHANNELS AND MARBORS 112 MAVIGATION - DIKED DISPOGAL 114 MAJOR REHABILITATION OF CHANNELS AND MARBOR	510,793 356 0	529,428 2,061 0	496,824 592 4,464
213 COST SHARED RECR. DEVEL FLOOD CONTROL RE 0 0 64 222 INSPECTION OF NON-FEDERAL LEVEES 0 0 64 320 COST SHARED RECR. DEVEL NULTI-PURPOSE PR 0 0 12,764 SUBTOTAL 0 0 0 12,764 SUBTOTAL 0 0 0 2,764 SUBTOTAL 0 0 2,760 2,760 SUBTOTAL 0 0 5,977 1110 MAVIGATION PERPAREDMESS 0 0 2,000 0 SUBTOTAL 0 0 5,977 1110 MAVIGATION PERPAREDMESS 0 0 0 2,000 0 1143 0 0 0,000 0 0	SUBTOTAL	511,149	531,489	501,880
SUBTOTAL 0 0 64 320 COST SHARED RECR. DEVEL NULTI-PURPOSE PR 0 0 12,764 440 GENERAL REGULATORY PUNCTIONS 0 0 12,764 440 GENERAL REGULATORY PUNCTIONS 0 0 0 SUBTOTAL 0 0 0 0 SUBTOTAL 0 0 0 2,477 SUBTOTAL 0 0 2,477 540 MATIGNAL ENERGENCY FACILITIES 0 0 2,477 SUBTOTAL 0 0 5,577 50 MODILIZATION PREPAREDMESS 0 2,477 1110 MAVIGATION - NITIONT FREPAREDMESS 0 2,000 0 2,477 1140 MODIFAL ENERGENCY FACILITIES 0 2,000 0 1,47 1140 MODIFAL OF CONFLICT CONTAIL PROJECTS 0 2,000 0 1,447 1142 REBUNAL OF AUDIFIC ERGENT 0 4,000 0 1,400 1142 REBUNAL OF AUDIFIC ERGENT 0 3,500 1,414 1,000 0 1143 RTITHANI MARTING 0 3,	213 COST SNARED RECR. DEVEL FLOOD CONTROL RE 222 INSPECTION OF NON-FEDERAL LEVEES	0	0	60 1
320 COST SHARED RECR. DEVEL MULTI-PURPOSE PR 0 12,764 440 GENERAL REGULATORY FUNCTIONS 0 0 12,764 440 GENERAL REGULATORY FUNCTIONS 0 0 0 0 0 SUBTOTAL 0 0 0 0 2,477 540 MATIONAL ENERGENCY FACILITIES 0 0 2,000 0 SUBTOTAL 0 0 5,077 0 2,000 0 1116 MAVIGATION - NITIGATION OF SHORE DAMAGE 1,153 708 744 1142 REMOVAL OF AGUNESTIC GROUPS COMPACTION 0 6,000 0 1143 RETIGATION MARINE GENER DAMAGE 1,153 20,000 0 1144 RESERVAL OF COMPARTIC GROUPS 305,468 292,003 290,650 1145 RETIGATION MARING 1,153 20,0494 744	SUBTOTAL	0	0	62
SHRTOTAL 0 0 12,764 440 GENERAL REGULATORY FUNCTIONS 0 0 0 0 SUBTOTAL 0 0 0 0 0 0 SUBTOTAL 0 0 0 0 0 0 0 0 SUBTOTAL 0 0 0 2,477 540 MATIONAL ENERGENCY FACILITIES 0 0 2,477 SUBTOTAL 0 0 5,770 0 2,000 744 1140 MODITORING OF COMPLETED CONSTAL PROJECTS 0 2,000 744 1140 MODITORING OF COMPLETED CONSTAL PROJECTS 0 6,000 0 1140 MODITORING OF COMPLETED CONSTAL PROJECTS 0 6,000 0 0 1143 BEACH DISPORAL (SECTION 933) 0 6,000 0 0 1147 CONSTAL NULT RESERVOIR 9730 0 6,000 0 0 1143 BEACHAR DESEANCH PROBRAM 1,153 20,494 744 1240 MAINTEANTION 1,153 20,494 744 1240 MAINTENANCE RESEANCH PROBRAM	320 COST SHARED RECR. DEVEL MULTI-PURPOSE PR	0	0	12,768
440 GENERAL REGULATORY FUNCTIONS 0 0 0 SUBTOTAL 0 0 0 0 SUBTOTAL 0 0 0 0 SUBTOTAL 0 0 0 2,477 SUB MODILIZATION PREPAREDNESS 0 0 2,470 SUB MODILIZATION PREPAREDNESS 0 0 2,000 1140 MODIFAL RESERVOIRN PROBAMINE PROPERTY 0 6,000 0 1142 REMOVAL OF ADMINIC GROUPNIN 0 8,055 0 0 1143 REMERCIN DESEARCH PROBAMINE SINCE DAVIS 0 1,500 0 0 1144 RIVER CONFLUENCE ICE RESEARCH PROBAMINE 1,	SUBTOTAL	0	0	12,768
SUBTOTAL 0 0 0 510 HOBILIZATION PREPAREDNESS 0 0 3,69 520 CONTINUITY OF GOVERNMENT PREPAREDNESS 0 0 2,47 540 HATICMAL ENERGENCY FACILITIES 0 0 2,47 540 HATICMAL ENERGENCY FACILITIES 0 0 5,97 5110 HAVIGATION - HITIGATION OF SHORE DAMAGE 1,153 708 744 1140 MONIFORING OF COMPLETED CONSTAL PROJECTS 0 2,000 0 1141 DREEDGING RESEARCH PROGRAM 0 6,000 0 0 1143 BEACH DISPORAL (SECTION PROGRAM 0 1,000 0 0 650 0 1145 REMARAL DISPORAL (SECTION PROGRAM 0 3,500 0 0 650 0 0 1146 RIVER CONFLUENCE ICE RESEARCH 0 650 0 0 650 0 </td <td>440 GENERAL REGULATORY FUNCTIONS</td> <td>0</td> <td>0</td> <td>0</td>	440 GENERAL REGULATORY FUNCTIONS	0	0	0
S10 NOBILIZATION PREPAREDNESS 0 0 3,6% S20 CONTINUITY OF GOVERNMENT PREPAREMESS 0 0 2,477 S40 MATIONAL EMERGENCY FACILITIES 0 0 2,477 SUBTOTAL 0 0 5,577 540 744 1140 MAVIGATION - NITIGATION OF SHORE DAMAGE 1,153 708 744 1140 MAVIGATION - NITIGATION OF SHORE DAMAGE 1,153 2,000 600 1141 MAVIGATION - NITIGATION OF SHORE DAMAGE 1,153 2,000 600 61142 1142 REMOVAL OF ADJATIC GROUTH 0 8,035 61143 82611 11870 RAAL (SECTION 933) 0 600 61143 82611 11870 RAAL 650 61 1143 RECH DISPORAL (SECTION PROGRAM 0 3,050 61 650 61 1144 RIVER CONFLUENCE ICE RESEARCH 0 650 61 62 SUBTOTAL MAVIGATION 1,153 20,4651 744 1200 826,5	SUBTOTAL	0	0	0
S20 CONTINUITO OF GOVERNMENT PREPAREMENTS 0 0 2,477 S40 MATIONAL ENERGENCY FACILITIES 0 0 0 2,477 S40 MATIONAL ENERGENCY FACILITIES 0 0 0 5,977 S100 MATIONAL ENERGENCY FACILITIES 0 0 5,977 S110 MARITORING OF COMPLETED CONSTAL PROJECTS 0 2,000 6 S140 MONITORING OF COMPLETED CONSTAL PROJECTS 0 4,000 6 S143 BEACH DISPORTAL (SECTION PROBRAM 0 3,050 6 6 S143 BEACH DISPORTAL INCE MERGENCH 0 6,500 6 6 6 S145 REACH DISPORTAL INCE RESEARCH PROBRAM 0 3,500 6 <td< td=""><td>510 HODILIZATION PREPAREDNESS</td><td>0</td><td>0</td><td>3,494</td></td<>	510 HODILIZATION PREPAREDNESS	0	0	3,494
SUBTOTAL 0 0 5,977 1110 MAVIG2TION - MITIGATION OF SHORE DAMAGE 1,153 708 744 1140 MONITORING OF COMPLETED COASTAL PROJECTS 0 2,000 0 1141 DREDGING RESEARCH PROGRAM 0 6,000 0 1142 REMOVAL OF ADMITIC GROUTH 0 8,036 0 1143 BEACH DISPORAL (SECTION 9733) 0 600 0 1145 RIVER CONFLUENCE ICE RESEARCH PROGRAM 0 3,000 0 1145 RIVER CONFLUENCE ICE RESEARCH 0 650 0 1145 RIVER CONFLUENCE ICE RESEARCH 0 650 0 0 1145 RIVER CONFLUENCE ICE RESEARCH 0 6,000 0 0 0 1200 REGULAR LOCKS AND DAMS 305,468 298,003 290,657 249,99 0	520 CONTINUITY OF GOVERNMENT PREPAREDNESS 540 NATIONAL ENERGENCY FACILITIES	0	0	2,474 2
1110 MAVIGATION • NITIGATION OF SHORE DAMAGE 1,153 706 744 1140 MONITORING OF COMPLETED COASTAL PROJECTS 0 2,000 0 1141 DEBOGING RESEARCH PROGRAM 0 4,000 0 1142 REMONAL OF AGINTIN 0 8,036 0 1143 BEACH DISPORAL (SECTION 933) 0 600 0 1145 NITHATION MARKING 0 1,000 0 0 1145 RITHATION 1,153 20,494 744 1200 REGULAR LOCKS AND DAMS 305,468 292,003 290,657 1240 MAINTERANCE RESEARCH (RENE II) 0 6,000 0 3UBTOTAL LOCKS AND DAMS 305,468 298,003 290,657 2100 REGULAR RESERVOIRS 255,869 226,569 269,599 2110 SCHEDULING FLOOD CONTROL RESERVOIRS 2,652 3,150 3,266 2130 CHUTROMENTAL REVIEW GUIDE FOR OPERATIONS (0 675 0 2140 MATER CONTROL RESEARCH PROGRAM 0 675 0 2130 ENEDULING FL	SUBTOTAL	0	0	5,972
SUBTOTAL MAVIGATION 1,153 20,494 744 1200 REGULAR LOCKS AND DAMS 305,468 292,003 290,657 1240 MAINTEMANCE RESEARCH (RENR 11) 0 6,000 6,000 SUBTOTAL LOCKS AND DAMS 305,468 298,003 290,657 2100 REGULAR RESERVOIRS 305,468 298,003 290,657 2110 SCHEDULING FLOOD CONTROL RESERVOIRS 2,852 3,150 3,265 2130 ENVIRONMENTAL REVEW GUIDE FOR OPERATIONS (0 1,000 6 2140 WATER CONTROL RESEARCH PROGRAM 0 675 6 6 2130 ENVIRONMENTAL REVIEW GUIDE FOR OPERATIONS (0 4,000 6 6 2130 ENVIRONMENTAL REVIEW GUIDE FOR OPERATIONS (0 4,000 6 6 2200 REGULAR CHANNEL IMPROVEMENT 11,063 13,580 16,364 7,355 7,425 2200 REGULAR CHANNEL IMPROVEMENT 18,899 20,915 23,994 3000 MILTIPLE PURPOSE 369,104 376,229 334,643 3000 MILTIPLE PURPOSE 369,104 376,229 334,643 6,000 16,	1110 NAVIGATION - NITIGATION OF SHORE DAMAGE 1140 NONITORING OF CONFLETED COASTAL PROJECTS 1141 DREDGING RESEARCH PROGRAM 1142 RENOVAL OF ADUATIC GROUTH 1143 BEACH DISFORMAL (SECTION 933) 1145 NITIGATION BANKING 1146 RIVER CONFLUENCE ICE RESEARCH 1146 RIVER CONFLUENCE ICE RESEARCH	1,153 0 0 0 0 0 0 0	708 2,000 4,000 8,036 600 1,000 3,500 650	744 0 0 0 0 0 0 0 0
1200 REGULAR LOCKS AND DAMS 305,468 292,003 290,653 1240 MAINTEMANCE RESEARCH (REWR II) 0 6,000 6,000 SUBTOTAL LOCKS AND DAMS 305,468 298,003 290,653 2100 REGULAR RESERVOIRS 255,849 256,569 249,300 2110 SCHEDULING FLODO CONTROL RESERVOIRS 2,852 3,150 3,246 2130 0 1,000 0 675 0 2140 WATER CONTROL RESERVOIRS 2,852 3,150 3,246 2130 ENVIRONMENTAL REVIEW GUIDE FOR OPERATIONS (0 4,000 0 2140 WATER CONTROL RESERVOIRS 258,701 265,394 252,657 2100 REGULAR CHANNEL IMPROVEMENT 11,063 13,580 16,346 2200 REGULAR CHANNEL IMPROVEMENT 11,063 13,580 16,346 2210 INSPECTION OF COMPLETED MORKS 7,816 7,335 7,625 SUBTOTAL CHANNEL IMPROVEMENT 18,899 20,915 23,994 3000 NULTIPLE PURPOSE 369,104 376,229 334,643 SUBTOTAL MULTIPLE PURPOSE 369,104 376,229 334,643 3000 RULTIPLE PURPOSE 369,104	SUBTOTAL NAVIGATION	1, 153	20,494	744
SUBTOTAL LOCKS AND DAMS 305,468 298,003 290,657 2100 REGULAR RESERVOIRS 255,869 256,569 240,300 2110 SCHEDULING FLOOD CONTROL RESERVOIRS 2,852 3,150 3,266 2130 0 1,000 0 675 0 2130 BEVINGUMENTAL REVIEW GUIDE FOR OPERATIONS (0 6,75 0 0 675 0 0 675 0 0 675 0 0 675 0 0 675 0 0 0 675 0 0 675 0 0 675 0 0 675 0 0 0 675 0 0 675 0	1200 REGULAR LOCKS AND DANS 1240 NAINTENANCE RESEARCH (RENR 11)	305,468 U	292,003 6,000	290,657 0
2100 REGULAR RESERVOIRS 255,869 256,569 249,399 2110 SCHEDULING FLOOD CONTROL RESERVOIRS 2,852 3,150 3,266 2130 LING FLOOD CONTROL RESERVOIRS 2,852 3,150 3,266 2130 LING FLOOD CONTROL RESERVOIRS 0 1,000 6 2140 WATER CONTROL RESEARCH PROGRAM 0 675 6 2150 ENVIRONMENTAL REVIEW GUIDE FOR OPERATIONS (0 4,000 6 SUBTOTAL RESERVOIRS 258,701 265,394 252,657 2200 REGULAR CHANNEL IMPROVEMENT 11,083 13,580 16,364 2210 INSPECTION OF COMPLETED MORKS 7,816 7,335 7,625 SUBTOTAL CHANNEL IMPROVEMENT 18,899 20,915 23,994 3000 MULTIPLE PURPOSE 369,104 376,229 334,647 4100 REMOVAL OF SUNKEN VESSELS 0 1,000 916 6200 PROTECT, CLEAR AND STRUCTIVE DEPOSITS 1,332 1,222 1,474 6300 PREVENTION OF OBSTRUCTIVE DEPOSITS 1,332 1,222 1,474 6400 MALTIPLE CONDAL 7,199 7,136	SUBTOTAL LOCKS AND DAMS	305,468	298,003	290,657
SUBTOTAL RESERVOIRS 258,701 265,394 252,657 2200 REGULAR CHANNEL IMPROVEMENT 11,083 13,580 16,364 2210 INSPECTION OF COMPLETED WORKS 7,816 7,335 7,625 SUBTOTAL CHANNEL IMPROVEMENT 18,899 20,915 23,994 3000 NULTIPLE PURPOSE 369,104 376,229 334,647 SUBTOTAL MULTIPLE PURPOSE 369,104 376,229 334,647 4100 REMOVAL OF SUNKEN VESSELS 0 1,000 916 6200 PROVAL OF SUNKEN VESSELS 0 1,000 916 6300 PREVENTION OF OBSTRUCTIVE DEPOSITS 1,332 1,222 1,677 6400 REMOVAL OF SUNKEN VESSELS 0 50 55 6300 PREVENTION OF OBSTRUCTIVE DEPOSITS 1,332 1,222 1,677 6400 SURVEYS 8,958 10,252 8,557 6700 PROJECT CONDITION GENEVEYS 8,958 10,252 8,557	2100 REGULAR RESERVOIRS 2110 SCHEDULING FLOOD CONTROL RESERVOIRS 2130 2140 WATER CONTROL RESEARCH PROGRAM 2150 ENVIRONMENTAL REVIEW GUIDE FOR OPERATIONS (255,849 2,852 0 0	256,569 3,150 1,000 675 4,000	249,390 3,267 0 0
2200 REGULAR CHANNEL IMPROVEMENT 11,083 13,580 16,364 2210 INSPECTION OF COMPLETED MORKS 7,816 7,335 7,625 SUBTOTAL CHANNEL IMPROVEMENT 18,899 20,915 23,994 3000 NULTIPLE PURPOSE 369,104 376,229 334,647 SUBTOTAL MULTIPLE PURPOSE 369,104 376,229 334,647 4100 REMOVAL OF SUMKEN VESSELS 0 1,000 916 4200 PROTECT, CLEAR AND STRAIGHTEN CHANNEL (SEC. 0 50 56 4300 REVENTION OF OBSTRUCTIVE DEPOSITS 1,332 1,222 1,677 4500 DRIFT REMOVAL 7,199 7,713 6,924 4700 PROJECT CONDITION SURVEYS 8,958 10,252 8,557	SUBTOTAL RESERVOIRS	258,701	265,394	252.657
SUBTOTAL CHANNEL IMPROVEMENT 18,899 20,915 23,994 3000 MULTIPLE PURPOSE 369,104 376,229 334,647 SUBTOTAL MULTIPLE PURPOSE 369,104 376,229 334,647 \$UBTOTAL MULTIPLE PURPOSE 369,104 376,229 334,647 \$100 RENOVAL OF SUNKEN VESSELS 0 1,000 918 \$4200 PROTECT, CLEAR AND STRAIGHTEN CHANNEL (SEC. 0 50 56 \$4300 PREVENTION OF OBSTRUCTIVE DEPOSITS 1,332 1,222 1,677 \$4500 DRIFT RENOVAL 7,199 7,713 6,922 \$4600 4,453 4,397 4,681 \$4700 PROJECT CONDITION SURVEYS 8,958 10,252 8,855 \$0 3,72 2,372 3,37 3,372	2200 REGULAR CHANNEL IMPROVEMENT 2210 INSPECTION OF COMPLETED WORKS	11,0 83 7,816	13,580 7,335	16,369 7,625
3000 NULTIPLE PURPOSE 369,104 376,229 334,647 SUBTOTAL MULTIPLE PURPOSE 369,104 376,229 334,647 4100 REMOVAL OF SUNKEN VESSELS 0 1,000 918 4200 PROTECT, CLEAR AND STRAIGHTEH CHANNEL (SEC. 0 50 56 4300 PREVENTION OF OBSTRUCTIVE DEPOSITS 1,332 1,222 1,474 4500 PRIFT REMOVAL 7,199 7,713 6,924 4600 MOVELOCT CONDITION SURVEYS 8,958 10,252 8,854 6700 PROJECT CONDITION SURVEYS 0 357 2,337	SUBTOTAL CHANNEL IMPROVEMENT	18,899	20,915	23,994
SUBTOTAL MULTIPLE PURPOSE 369,104 376,229 334,647 4100 RENDVAL OF SUNKEN VESSELS 0 1,000 918 6200 PROTECT, CLEAR AND STRAIGHTEN CHANNEL (SEC. 0 50 55 6300 PREVENTION OF OBSTRUCTIVE DEPOSITS 1,332 1,222 1,677 6500 DRIFT RENOVAL 7,199 7,713 6,924 6400 6453 4,397 6,681 6700 PROJECT CONDITION SURVEYS 8,958 10,252 8,857	3000 MULTIPLE PURPOSE	369,104	376,229	334,647
4100 RENOVAL OF SUNKEN VESSELS 0 1,000 918 4200 PROTECT, CLEAR AND STRAIGNTEN CHANNEL (SEC. 0 50 56 4300 PREVENTION OF OBSTRUCTIVE DEPOSITS 1,332 1,222 1,67 4500 DRIFT RENOVAL 7,199 7,713 6,922 4600 4,453 4,397 4,681 4700 PROJECT CONDITION SURVEYS 8,958 10,252 8,854	SUBTOTAL HULTIPLE PURPOSE	369, 104	376,229	334,647
4900 WATERBORNE CONMERCE STATISTICS 0 4,079	4100 RENOVAL OF SUNKEN VESSELS 4200 PROTECT, CLEAR AND STRAIGNTEN CHANNEL (SEC. 4300 PREVENTION OF OBSTRUCTIVE DEPOSITS 4500 DRIFT RENOVAL 4600 SURVEY OF NORTH CENTRAL LAKES 4900 WATERBORNE COMMERCE STATISTICS	0 0 1,332 7,199 4,453 8,958 0 0	1,000 50 1,222 7,713 4,397 10,252 3,537 4,079	918 56 1,474 6,926 4,681 8,856 2,330 0

Appendix C Minutes of Project Team Meetings and Technical Memos

ì

ł

21,963	32,250	25,242
0	8,000	0
0	8,000	6
0	100	0
0	100	0
0	0	
0	0	0
1,561,548	1,557,005	1,448,430
	21,943 0 0 0 0 0 1,561,548	21,943 32,250 0 8,000 0 8,000 0 100 0 100 0 0 1,541,548 1,557,005

Appendix C Minutes of Project Team Meetings and Technical Memos

	Corps O&M Budget Decision Support System	
	Fourth Meeting 14 October 1992 0800	
1	Water Resources Support Center	1
	Casey Bullding	
ł	FOR BRIVOR, VA 22000	
	AGENDA	
ł.	Review of COMBDSS Version 2 During Budget Analysis	
	A. Download	
	8. Data Checking	1
	C. Development of Scenarios	ļ
	D. Calculation of Scenarios	
	E. Reporting	1
	G Ad Moo Lies of Svetem	
	H. Two Databases	
	I. Move to R:Base Version 4	
81.	Status of the COMB_DSS Prototype Version 2.0	
	A. Capabilities	
	1 256 ecception in his total file	
	2. Expanded Reports	
	B. Improvements Needed for FY 95	
	1. Scenario management	
	2. Reports	
	3. Graphical Display of Data	
111.	Review of COMBDSS final draft report	
IV.	FY 93 Work	
	A. Maintenance of COMB DSS at HOUSACE	
	B. Division COMB DSS	
	C. Devstopment of Other Decision Support Tools	
۷.	Action Items	
VI.	Next Meeting	
		[

CEWRC-IWR-R

October 19,1992

MEMORANDUM FOR RECORD

SUBJECT: Fourth Meeting of COMB_DSS Project Team

1. The fourth meeting of the COMB_DSS project team was held at the Institute for Water Resources on 14 October 1992. The primary purposes of the meeting was to review the results of using the COMB_DSS prototype during the FY 94 budget process, discuss the final report for the work effort and plan for FY 93 work, especially the development of the Division COMB_DSS. Attending were: Dave Harmon, CECW-OM, Ed Japel, CECER-FS, Connie Raaymakers, CECER-FS, Steve Scott, CECWES-HE-E, Michael R. Walsh, CEWRC-IWR; Richard Males, RMM Technical Services, Inc.; and Craig Strus, Planning and Management Consultants Limited. The agenda for the meeting is attached.

2. The project team discussed the use of the COMB_DSS during the budget cycle. Dave Harmon provided his perspective as the primary user of the COMB_DSS and Dick Males and I provided our perspectives as the primary 'fixers' of the system. The prototype was judged to be a success. Dave said that he could not have done the FY 94 analysis using the tools he had available last year. There were problems during the process, such as the database becoming corrupted, but nothing that stopped the analysis. Dick and I noted that there was a lot of 'pressure programming' during July and August, but the basic design of the COMB_DSS was kept intact. I noted that the COMB_DSS was not used directly by the decision makers. Dave was the primary user and he responded to the needs of John Parez, John Elmore and others. He suggested that we talk to the decision makers to discover what they thought about the system and whether they would be interested in more hands on work with a DSS.

3. I sent out copies of the initial draft report for everyone to review. No major comments were made by the project team at the meeting. I asked for all comments to be sent to me by 23 October 1992. I will consolidate the comments and give them to Craig Strus so that the final draft report can be ready by 30 October 1992. I will send the final draft to Steve Scott for publishing at WES.

4. The work for FY 93 breaks out into three areas. The first is the development of a Division COMB_DSS, that is a system with similar capabilities as the Headquarters COMB_DSS for Divisions to use in the evaluation of budget submittals. Steve Scott and Connie Raaymakers will take the lead on this work effort. They will develop a work plan for comment by other members of the project team. I will help develop the scope of work for contract support by PMCL. This effort will require the full amount of the current funding allocation for the decision support system work unit under the IOMT.

5. The second area of work involves maintenance and updates to the current

COMB_DSS. The project team decided that this effort should be undertaken directly for HQUSACE rather than under the aegis of the IOMT. I will prepare a proposal to CECW-OM for the conduct of this work for FY 93. Primarily this work will involve making some changes to the COMB_DSS that were identified during the FY 94 budget process and providing Dave with additional support.

6. The third area of work is the development of other decision support tools for O&M decision makers. The major O&M review study identified several program management issues that should be addressed by CECW-OM. I will review these recommendations and prepare a proposal to develop decision support tools under the IOMT that help address some of the issues. The project team discussed a preliminary idea to develop a DSS that would provide analytical capabilities for expenditures just as the COMB_DSS does for budget data. The budget is only part of the picture and expenditure analysis is needed to complete it. I asked the project team to think about other DSS possibilities and give me their ideas.

9. Action Items. Several items were noted during the meeting that require action by project team members. These action items are listed by individual below:

AN	٠	Provide comments on COMB_DSS draft report to Michael Walsh by 23 Oct 1992
Michael Walsh	• • •	develop scope of work for contract support for Division Budget DSS develop proposal for maintenance of COMB_DSS develop proposal for new DSS development under IOMT send final draft report to Steve Scott by 4 November 1992
Steve Scott	•	develop work plan for Division Budget DSS with Connie Rasymakers publish final COMB_DSS report
Craig Strus	•	provide final draft report to Michael Walsh by 30 Oct 1992
Connie Raaymakers	٠	develop work plan for Division Budget DSS with Stave Scott
Michael R. Walsh Civil Engineer		

Appendix D Tables in Database

Appendix D Tables in Database

Table: distcode Read Password: Modify Password	No I: No				
Table Description	n: district code looka	ም			
Column definition Name 1 distcode 2 divnam 3 distlook	Type TEXT 1 TEXT 3 TEXT 5	Index Expression (distcode& divnam)			
	U 10 00. 12				
Table: cwisscen Read Password: Modify Password Table Description	No 1: No 1: cwis scenario incl	usion/exclusion table	-		
Column definition	3				
 Name scenname in_outcwis cwis 	Type TEXT 8 TEXT 1 INTEGER	Index Expression			
Current number of rows: 3					
Table: fccdscen Read Password: Modify Password	No I: No		-		
Table Description	n: feed scenario inch	usion/exclusion table			
Column definition	s Trans	Index Empression			
1 scenname 2 in outfc	TEXT 8	moex Expression			
3 feed	TEXT 5				
3 fccd Current number o	TEXT 5				
3 fccd Current number o	TEXT 5				
3 fccd Current number o	TEXT 5				
3 fccd Current number o	TEXT 5				
3 fccd Current number o	TEXT 5 of rows: 378				
3 fccd Current number o	TEXT 5 of rows: 378				

Table Description: composite scenario definition table Column definitions # Name Type I scenarme TEXT 8 2 add_sub_scenario TEXT 8 2 add_sub_scenario TEXT 8 2 add_sub_scenario TEXT 8 Current number of rows: 299 Table: sqlscenario Read Password: No Modify Password: No Table Description: direct sql scenario definition Column definitions # Name Type I scenarme TEXT 8 2 aql_text NOTE Current number of rows: 0 Table: div_5_\$ Read Password: No Modify Password: No Table: div_5_\$ Read Password: No Table: div_5_\$ Read Password: No Table: Description: div scenario dollars breakout Column definitions # Name Type Index Expression 1 scenarme TEXT 8 • 2 appcode TEXT 3 • 4	Tal Re Mo	ole: compacen ad Password: No adify Password: No			
Column definitions Name Type Index Expression 1 scenname TEXT 8 2 add_sub_scenario TEXT 1 3 scennare TEXT 8 Current number of rows: 299 Table: sqlscenario Read Password: No Modify Password: No Table Description: direct sql scenario definition Column definitions Name Type Index Expression 1 scenname TEXT 8 2 sql_text NOTE Current number of rows: 0 Table: div_s_S Read Password: No Modify Password: No Modify Password: No Table Description: div scenario dollars breakout Column definitions Name Type Index Expression 1 scenname TEXT 8 2 approach TEXT 1 3 divnam TEXT 8 4 dollars CURRENCY Current number of rows: 1054	Tal	ble Description: com	posite scenario	definition table	
2 add_sub_scenario TEXT 1 3 scenpart TEXT 8 Current number of rows: 299 Table: sqlacenario Read Password: No Modify Password: No Table Description: direct sql scenario definition Column definitions # Name Type Index Expression 1 scenname TEXT 8 2 sql_text NOTE Current number of rows: 0 Table: div_s_\$ Read Password: No Modify Password: No Table Description: div scenario dollars breakout Column definitions # Name Type Index Expression 1 scenname TEXT 8 2 appcode TEXT 1 3 divnam TEXT 3 4 dollars CURRENCY Current number of rows: 1054	Col # 1	lumn definitions Name scenname	Type TEXT 8	Index Expression	
Current number of rows: 299 Table: sqlacenario Read Password: No Modify Password: No Table Description: direct sql scenario definition Column definitions # Name Type Index Expression 1 scenname TEXT 8 2 sql_text NOTE Current number of rows: 0 Table: div_s_\$ Read Password: No Modify Password: No Table Description: div scenario dollars breakout Column definitions # Name Type Index Expression 1 scenname TEXT 8 2 appcode TEXT 1 3 divnam TEXT 3 * 4 dollars CURRENCY Current number of rows: 1054	2 3	add_sub_scenario scenpart	TEXT 8		
Table: sqlscenario Read Password: No Modify Password: No Table Description: direct sql scenario definition Column definitions # Name Type I scenname TEXT 8 2 sql_text NOTE Current number of rows: 0 Table Description: div scenario dollars breakout Column definitions # Name Type Index Expression Current number of rows: 0 Table Description: div scenario dollars breakout Column definitions # Name Type Index Expression 1 scenname TEXT 8 * Appcode TEXT 1 3 divnam TEXT 3 * 4 dollars CURRENCY Current number of rows: 1054	Cu	rrent number of rov	vs: 299		
Column definitions Name Type Index Expression 1 scenname TEXT 8 2 sql_text NOTE Current number of rows: 0 Table: div_5_\$ Read Password: No Modify Password: No Table Description: div scenario dollars breakout Column definitions Name Type Index Expression 1 scenname TEXT 8 2 appcode TEXT 1 3 divnam TEXT 3 4 dollars CURRENCY Current number of rows: 1054	Tal Rei Mo Tab	ble: sqlscenario ad Password: No dify Password: No ble Description: direc	t sql scenario de	finition	
Name Type Index Expression 1 scenname TEXT 8 2 sql_text NOTE Current number of rows: 0	Col	umn definitions		- .	
1 scenname TEXT 8 2 sql_text NOTE Current number of rows: 0 Table: div_s_\$ Read Password: No Modify Password: No Table Description: div scenario dollars breakout Column definitions // Name Type Index Expression 1 scenname TEXT 8 2 appcode TEXT 3 4 dollars Current number of rows: 1054	/ N	ame	Туре	Index Expression	
Current number of rows: 0 Table: div_3_\$ Read Password: No Modify Password: No Table Description: div scenario dollars breakout Column definitions Name Type Index Expression 1 scenname TEXT 8 * 2 appcode TEXT 1 3 divnam TEXT 3 * 4 dollars CURRENCY Current number of rows: 1054	1	scenname	TEXT 8		
Table: div_s_\$ Read Password: No Modify Password: No Table Description: div scenario dollars breakout Column definitions // Name Type Index Expression 1 scenname	2 	sqi_text			
Current number of rows: 1054	2 Cui	sqi_text	NOIE 75: 0		
	2 Cur Tab Ren Mod Tab Colu # 1 2 3 4	sql_text rrent number of row ole: div_s_\$ od Password: No dify Password: No dify Password: No ole Description: div : numn definitions Name scenname appcode divnam dollars	NOTE vs: 0 scenario dollars Type TEXT 8 TEXT 1 TEXT 3 CURRENCY	breakout Index Expression •	-
	2 Cur Tab Rea Mod Tab Colu # 1 2 3 4 Cur	sql_text rrent number of row ole: div_s_\$ ol Password: No dify Password: No ole Description: div : umn definitions Name scenname appcode divnam dollars rrent number of row	NOTE vs: 0 scenario dollars Type TEXT 8 TEXT 1 TEXT 3 CURRENCY vs: 1054	breakout Index Expression *	
	2 Cur Tab Rea Mo Tab Coli # 1 2 3 4 Cur	sql_text rrent number of rov ole: div_s_\$ ad Password: No dify Password: No dify Password: No ole Description: div s umn definitions Name scenname appcode divnam dollars rent number of row	NOTE vs: 0 scenario dollars Type TEXT 8 TEXT 1 TEXT 3 CURRENCY vs: 1054	breakout Index Expression *	
	2 Cur Tab Ren Mod Tab Colu # 1 2 3 4 Cur	sql_text rrent number of rov ole: div_s_\$ ad Password: No dify Password: No ole Description: div : umn definitions Name scenname appcode divnam dollars rent number of row	NOTE vs: 0 scenario dollars Type TEXT 8 TEXT 1 TEXT 3 CURRENCY vs: 1054	breakout Index Expression *	
	2 Cur Tab Rea Moo Tab Colu # 1 2 3 4 Cur	sql_text rrent number of row ole: div_s_\$ ol Password: No dify Password: No dify Password: No ole Description: div : umn definitions Name scenname appcode divnam dollars rrent number of row	NOTE vs: 0 scenario dollars Type TEXT 8 TEXT 1 TEXT 3 CURRENCY vs: 1054	breakout Index Expression *	-
	2 Cur Tab Rea Mod Tab Coli 1 2 3 4 Cur	sql_text rrent number of rov ole: div_s_\$ ad Password: No dify Password: No ole Description: div s umn definitions Name scenname appcode divnam dollars rent number of row	NOTE vs: 0 scenario dollars Type TEXT 8 TEXT 1 TEXT 3 CURRENCY vs: 1054	breakout Index Expression •	
	2 Cur Tab Rea Mod Tab Colu # 1 2 3 4 Cur	sql_text rrent number of rov ole: div_s_\$ ad Password: No dify Password: No ole Description: div : umn definitions Name scenname appcode divnam dollars rrent number of row	NOTE vs: 0 scenario dollars Type TEXT 8 TEXT 1 TEXT 3 CURRENCY vs: 1054	breakout Index Expression *	

Table: pcls_	<u>s_</u> \$	
Read Passw	ord: No	
Modify Pas	word: No	
Table Desc	intion: project class scena	nio dollars
	species project case some	
Column defi	nitions	
	There	Index Democration
F INATER	Type	Ibber Expression
l scenna	me TEXT 8	•
2 appcod	e TEXT 1	
3 projets	TEXT 2	•
4 dollars	CURRENCY	Y
Current su	nber of rows: 2120	
Table: divsc Read Passw Modify Pas	en ord: No sword: No	
Table Desci	iption: division scenario i	nclusion/exclusion table
Column defi	nitions	
/ Name	Туре	Index Expression
1 scennar	ne TEXT 8	
- divne m	TEYT 2	
	<u></u>	
Table: class Read Passw	æn ord: No	
Modify Pas	word: No	
Table Descr	iption: projcls scenario in	clusion/exclusion table
Column defi	nitions	
/ Name	Туре	Index Expression
1 scennar	ne TEXT 8	
- concide	TEYT 2	
- projets	IEAL C	
••••••••••••••••••••••••••••••••••••••	mban of manage 7	
LUITEN DU	nder of rows: /	

Table: status Read Password: No Modify Password: No

Table Description: scenario storage status table

Column definitions

	Name	Туре	Index Expression
1	usage	TEXT 8	
2	scenname	TEXT 8	
3	stordate	DATE	
4	stortime	TIME	

Current number of rows: 3

Table: primscen Read Password: No Modify Password: No

Table Description: master scenario table

Column definitions

#	Name	Туре	Index Expression
1	scenname	TEXT 8	-
2	scenappcode	TEXT 1	
3	scenminoce	INTEGER	
4	scenmaxoce	INTEGER	
5	scenmincost	CURRENCY	
6	scencumcost	CURRENCY	
7	scenminmeasure	INTEGER	
8	scenmaxmeasure	INTEGER	
9	scenlunp	TEXT 1	
10	scensort	TEXT 1	
11	scmnusr1	INTEGER	
12	scmxusr1	INTEGER	
13	scmnusr2	INTEGER	
14	scmausr2	INTEGER	

Current number of rows: 189

Table: wf_value Read Password: No Modify Password: No

Table Description: holds scores, new ranking for wf numbers

Column definitions

 Name
 Type

 1
 wf_num
 INTEGER

 2
 wf_value
 INTEGER

Index Expression ٠

Current number of rows: 19665

Table: scendesc Read Password: No Modify Password: No

Table Description: scenario description table

Column definitions

Col	umn definitions		
	Name	Туре	Index Expression
1	scenname	TEXT 8	•
2	scentype	TEXT 1	
3	scendesc	TEXT 60	
4	scennoles	NOTE	
5	scenworkfunctions	INTEGER	
6	scentotcost	CURRENCY	
7	scminoce	INTEGER	
8	SCIMEROCE	INTEGER	
9	scennum	INTEGER	
10	scenstor	INTEGER	
11	sstordat	DATE	
12	sstortim	TIME	
13	scenacor	INTEGER	

Current number of rows: 256

Modify Password:	No		
Table Description:			
Column definitions			
Name	Туре	Index Expression	
1 scenname	TEXT 8		
Current number of	f rows: 4		
Table: district			
Read Password: N	0		
Modify Password:	No		
Table Description:	district code inform	nation	
Column definitions	_		
Name	Туре	Index Expression	
1 CISUNCI	TEXT 3	•	
	TEXT 2		
4 ametyn	TEXT 3		
5 divnam	TEXT 3		
6 distitle	TEXT 22		
7 divtitle	TEXT 35		
			<u></u>
Table: projct			
Table: projct Read Password: No	0		
Table: projet Read Password: No Modify Password:	o No		
Table: projct Read Password: Ne Modify Password: Table Description:	o No project (cwis) relat	red info (download)	
Table: projet Read Password: No Modify Password: Table Description: Column definitions	o No project (cwis) relat	ted info (download)	
Table: projct Read Password: No Modify Password: Table Description: Column definitions	o No project (cwis) relat Type	ted info (download) Index Expression	
Table: projet Read Password: Network Modify Password: Table Description: Column definitions Name district Output	o No project (cwis) relat Type TEXT 3 DOTE: CED	red info (download) Index Expression	
Table: projct Read Password: No Modify Password: Table Description: Column definitions Name 1 district 2 cwis 3 projets	o No project (cwis) relat Type TEXT 3 INTEGER. TEXT 2	red info (download) Index Expression	
Table: projct Read Password: No Modify Password: Table Description: Column definitions Name 1 district 2 cwis 3 projcls A projam	0 No project (cwis) relat Type TEXT 3 INTEGER. TEXT 2 TEXT 48	ted info (download) Index Expression * *	
Table: projct Read Password: No Modify Password: Table Description: Column definitions Name 1 district 2 cwis 3 projcls 4 projnam	0 No project (cwis) relat Type TEXT 3 INTEGER. TEXT 2 TEXT 48	ted info (download) Index Expression * *	
Table: projct Read Password: Network: Modify Password: Table Description: Column definitions Name 1 district 2 cwis 3 projcls 4 projnam	o No project (cwis) relat Type TEXT 3 INTEGER. TEXT 2 TEXT 48	ted info (download) Index Expression • • •	
Table: projct Read Password: No Modify Password: Table Description: Column definitions Name 1 district 2 cwis 3 projcls 4 projnam	0 No project (cwis) relat Type TEXT 3 INTEGER. TEXT 2 TEXT 48	red info (download) Index Expression * *	
Table: projct Read Password: No Modify Password: Table Description: Column definitions Name 1 district 2 cwis 3 projcls 4 projnam	0 No project (cwis) relat Type TEXT 3 INTEGER. TEXT 2 TEXT 48	ted info (download) Index Expression * *	
Table: projct Read Password: No Modify Password: Table Description: Column definitions Name 1 district 2 cwis 3 projcls 4 projnam	o No project (cwis) relat Type TEXT 3 INTEGER. TEXT 2 TEXT 48	ted info (download) Index Expression * * *	
Table: projct Read Password: No Modify Password: Table Description: Column definitions Name 1 district 2 cwis 3 projcls 4 projnam	o No project (cwis) relat Type TEXT 3 INTEGER. TEXT 2 TEXT 48	ted info (download) Index Expression * * *	
Table: projct Read Password: No Modify Password: No Modify Password: Table Description: Column definitions Name 1 district 2 cwis 3 projcls 4 projnam	o No project (cwis) relat Type TEXT 3 INTEGER. TEXT 2 TEXT 48	ted info (download) Index Expression • • •	
Table: projct Read Password: No Modify Password: Table Description: Column definitions Name district cwis projcls projcls projnam	0 No project (cwis) relat Type TEXT 3 INTEGER. TEXT 2 TEXT 48	ted info (download) Index Expression * * *	
Table: projct Read Password: No Modify Password: Table Description: Column definitions Name 1 district 2 cwis 3 projcls 4 projnam	o No project (cwis) relat Type TEXT 3 INTEGER. TEXT 2 TEXT 48	ted info (download) Index Expression • • •	

5 state TEXT 2 6 feecode TEXT 1 7 tenyrave DOUBLE 8 surveys DNTEGER 9 lowuse TEXT 1 10 tonnage DOUBLE 11 interest TEXT 1 12 politician TEXT 40 13 authproj TEXT 63 14 authowis INTEGER Current number of rows: 2287 Table: catfeat Read Password: No Modify Password: No Table Description: category fccd correspondence (download) Column definitions # Name Type Index Expression 1 category TEXT 3 2 fccd TEXT 5 Current number of rows: 127 Table: cat_tit Read Password: No Modify Password: No Table Description: category titles (download) Column definitions # Name Type Index Expression 1 category TEXT 3 Current number of rows: 127 Table: cat_tit Read Password: No Modify Password: No Table Description: category titles (download) Column definitions # Name Type Index Expression 1 category TEXT 3 Current number of rows: 127 Column definitions # Name Type Index Expression 1 category TEXT 3 2 ca_tit TEXT 77 3 descripteq TEXT 1 4 argum_req TEXT 1 5 output_tit TEXT 35 Current number of rows: 94	5 state TEXT 2 6 feecode TEXT 1 7 tesyrave DOUBLE 8 surveys DOUBLE 9 lowuse TEXT 1 10 tonnage DOUBLE 11 interest TEXT 1 12 politician TEXT 40 13 authowis INTEGER Current number of rows: 2287 Table: catfeat Read Password: No Modify Password: No Table Description: category food correspondence (download) Column definitions 1 category TEXT 3 2 food TEXT 3 2 food TEXT 5 Current number of rows: 127 Table: cat_tit Read Password: No Modify Password: No Table Description: category titles (download) Column definitions 1 category TEXT 3 2 food TEXT 5 Current number of rows: 127 Table: Description: category titles (download) Column definitions / Name Type Index Expression 1 category TEXT 3 2 cat_tit TEXT 77 3 descrip_req TEXT 1 4 srgum_req TEXT 1 5 output_tit TEXT 35 Current number of rows: 94	5				
6 feccode TEXT 1 7 tenyrave DOUBLE 8 surveys DNTEGER 9 lowuse TEXT 1 10 tonage DOUBLE 11 interest TEXT 1 12 politician TEXT 40 13 authproj TEXT 63 14 authovia INTEGER Current number of rows: 2287 Table: catfeat Read Password: No Modify Password: No Table Description: category fccd correspondence (download) Column definitions # Name Type Index Expression 1 category TEXT 3 2 fccd TEXT 5 Current number of rows: 127 Table: cat_tit Read Password: No Modify Password: No Modify Password: No Modify Password: No Table: cat_tit Read Password: No Modify Password: No Modify Password: No Modify Password: No Modify Password: No Modify Password: No Modify Password: No Table cat_tit Read Password: No Modify Password: No Modify Password: No Table Description: category titles (download) Column definitions # Name Type Index Expression 1 category TEXT 3 2 cat_tit TEXT 3 2 cat_tit TEXT 77 3 descrip_req TEXT 1 4 argum_req TEXT 1 4 argum_req TEXT 1 5 output_tit TEXT 35 Current number of rows: 94	6 feecode TEXT 1 7 tenyrave DOUBLE 8 surveys DNTEGER 9 lowuse TEXT 1 10 tonnage DOUBLE 11 interest TEXT 1 12 politician TEXT 40 13 authproj TEXT 63 14 authowis INTEGER Current number of rows: 2287 		state	TEXT 2		
7 tenyrave DOUBLE 8 surveys DNTEGER 9 lowuse TEXT 1 10 tonnage DOUBLE 11 interest TEXT 1 12 politician TEXT 40 13 authproj TEXT 63 14 authovis INTEGER Current number of rows: 2287 Table: catfest Read Password: No Modify Password: No Table Description: category fccd correspondence (download) Column definitions 6 Name Type Index Expression 1 category TEXT 3 2 fccd TEXT 5 Current number of rows: 127 Table: cat_tit Read Password: No Modify Password: No Modify Password: No Table Description: category titles (download) Column definitions 6 Name Type Index Expression 1 category TEXT 3 2 fccd TEXT 5 Current number of rows: 127 Column definitions 7 Name Type Index Expression 1 category TEXT 3 2 cat_tit TEXT 77 3 descripted TEXT 7 3 descripted TEXT 7 5 output_tit TEXT 35 Current number of rows: 94	7 tenyrave DOUBLE 8 surveys INTEGER 9 lowuse TEXT 1 10 toanage DOUBLE 11 interest TEXT 1 12 politician TEXT 40 13 authoris INTEGER Current number of rows: 2287 Table: catfeat Read Passwoord: No Modify Passwoord: No Table Description: category fccd correspondence (download) Column definitions 7 Name Type Index Expression 1 category TEXT 3 2 fccd TEXT 5 Current number of rows: 127 Table: cat_tit Read Passwoord: No Modify Passwoord: No Modify Passwoord: No Table Description: category titles (download) Column definitions 7 Name Type Index Expression 1 category TEXT 3 2 fccd TEXT 5 Current number of rows: 127 Column definitions 7 Name Type Index Expression 1 category TEXT 3 2 cat_tit TEXT 3 2 cat_tit TEXT 7 3 descrip_req TEXT 1 4 argum_req TEXT 1 5 output_tit TEXT 35 Current number of rows: 94	6	feecode	TEXT 1		
8 surveys INTEGER 9 lowuse TEXT 1 10 tonage DOUBLE 11 interest TEXT 1 12 politician TEXT 40 13 authorois INTEGER Current number of rows: 2287 Table: catfeat Read Password: No Modify Password: No Table Description: category fccd correspondence (download) Column definitions # Name Type Index Expression 1 category TEXT 3 2 fccd TEXT 5 Current number of rows: 127 Table: cat_tit Read Password: No Modify Password: No Modify Password: No Table Description: category titles (download) Column definitions # Name Type Index Expression Table: cat_tit Read Password: No Modify Password: No Modify Password: No Table Description: category titles (download) Column definitions # Name Type Index Expression 1 category TEXT 3 2 cat_tit TEXT 3 2 cat_tit TEXT 3 2 cat_tit TEXT 3 5 output_tit TEXT 35 Current number of rows: 94	8 surveys INTEGER 9 lowuse TEXT 1 10 toanage DOUBLE 11 interest TEXT 1 12 politician TEXT 40 13 authorois INTEGER Current number of rows: 2287 Table: catfeat Read Pasword: No Modify Pasword: No Table Description: category fccd correspondence (download) Column definitions Ø Name Type Index Expression 1 category TEXT 3 2 fccd TEXT 5 Current number of rows: 127 Table: cat_tit Read Pasword: No Modify Pasword: No Modify Pasword: No Table Description: category tites (download) Column definitions Ø Name Type Index Expression 1 category TEXT 3 2 fccd TEXT 5 Current number of rows: 127 Table: cat_tit Read Pasword: No Modify Pasword: No Modify Pasword: No Table Description: category tites (download) Column definitions Ø Name Type Index Expression 1 category TEXT 3 2 cat_tit TEXT 77 3 descrip_req TEXT 1 5 output_tit TEXT 35 Current number of rows: 94	7	tenyrave	DOUBLE		
9 kowuse TEXT 1 10 tonage DOUBLE 11 interest TEXT 1 12 politician TEXT 40 13 authproj TEXT 63 14 authowis INTEGER Current number of rows: 2287 Table: catfeat Read Password: No Modify Password: No Table Description: category fccl correspondence (download) Column definitions # Name Type Index Expression 1 category TEXT 3 2 fccd TEXT 5 Current number of rows: 127 Table: cat_tit Read Password: No Table Description: category tites (download) Column definitions # Name Type Index Expression 1 category TEXT 5 Current number of rows: 127 Column definitions # Name Type Index Expression 1 category TEXT 3 2 cat_tit TEXT 77 3 descrip_req TEXT 1 4 argum_req TEXT 1 5 output_tit TEXT 35 Current number of rows: 94	9 iownse TEXT 1 10 ionnage DOUBLE 11 interest TEXT 1 12 politician TEXT 40 13 authproj TEXT 63 14 authowis INTEGER Current number of rows: 2287 Table: catfeat Read Password: No Modify Password: No Table Description: category fccl correspondence (download) Column definitions # Name Type Index Expression 1 category TEXT 3 2 fccd TEXT 5 Current number of rows: 127 Table: cat_tit Read Password: No Modify Password: No Table Description: category titles (download) Column definitions # Name Type Index Expression Table: cat_tit Read Password: No Modify Password: No Modify Password: No Table Description: category titles (download) Column definitions # Name Type Index Expression 1 category TEXT 3 2 cat_tit TEXT 77 3 descrip_req TEXT 1 5 output_tit TEXT 35 Current number of rows: 94	8	surveys	INTEGER		
10 tonnage DOUBLE 11 interest TEXT 1 12 politician TEXT 40 13 authproj TEXT 63 14 authoria INTEGER Currest number of rows: 2287 Table: catfeat Read Password: No Modify Password: No Table Description: category fccd correspondence (download) Column definitions # Name Type 1 category TEXT 3 2 food TEXT 5 Current number of rows: 127 Table: cat_tit Read Password: No Modify Password: No Modify Password: No Modify Password: No Table: cat_tit Read Password: No Table Description: category titles (download) Column definitions # Name Type Index Expression 1 category 1 category TEXT 3 2 cat_tit TEXT 77 3 descrip_req <t< td=""><td>10 sonnage DOUBLE 11 interest TEXT 1 12 politician TEXT 40 13 authproj TEXT 63 14 authowis INTEGER Current number of rows: 2287 </td><td>9</td><td>lowuse</td><td>TEXT 1</td><td></td><td></td></t<>	10 sonnage DOUBLE 11 interest TEXT 1 12 politician TEXT 40 13 authproj TEXT 63 14 authowis INTEGER Current number of rows: 2287	9	lowuse	TEXT 1		
11 interest TEXT 1 12 politician TEXT 40 13 authoroj TEXT 63 14 authowia INTEGER Current number of rows: 2287 Table: catfeat Read Password: No Modify Password: No Table Description: category fccd correspondence (download) Column definitions # Name 1 category 1 category 1 category 1 category Table: cat_tit Read Password: No Modify Password: No Table: cat_tit Read Password: No Modify Password: No Table: cat_tit Read Password: No Modify Password: No Table Description: category titles (download) Column definitions # Name Type Index Expression 1 category 2 cat_tit 1 category 2 cat_tit 1 category TEXT 3 <	11 interest TEXT 1 12 politician TEXT 40 13 authoroj TEXT 63 14 authowis INTEGER Current number of rows: 2287	10	tonnage	DOUBLE		
12 politician TEXT 40 13 authproj TEXT 63 14 authcwis INTEGER Currest number of rows: 2287 Table: catfeat Read Password: No Modify Password: No Table Description: category fccd correspondence (download) Column definitions // Name Type I category TEXT 3 2 fccd Table: cat_tit Read Password: No Table: cat_tit Read Password: No Modify Password: No Table: cat_tit Read Password: No Table: cat_tit Read Password: No Table: cat_tit Read Password: No Table Description: category titles (download) Column definitions // Name Type I category TEXT 3 2 cat_tit 1 category TEXT 1 2 cat_tit TEXT 35 Current number of rows: 94	12 politician TEXT 40 13 authproj TEXT 63 14 authowis INTEGER Current number of rows: 2287 Table: catfeat Read Password: No Modify Password: No Table: catfeat Read Password: No Table Description: category fccd correspondence (download) Column definitions // Name Type 1 category 1 category 1 category 1 category Table: cat_tit Read Password: No Table: cat_tit Table: cat_tit TEXT 3 2 Column def	11	interest	TEXT 1		
13 authproj TEXT 63 14 authowia INTEGER Current number of rows: 2287 Table: catfeat Read Prasword: No Modify Password: No Table Description: category food correspondence (download) Column definitions // Name Type Index Expression 1 category TEXT 3 2 food TEXT 5 Current number of rows: 127 Table: cat_tit Read Password: No Modify Password: No Modify Password: No Table Description: category titles (download) Column definitions // Name Type Index Expression 1 category TEXT 3 2 cat_tit TEXT 77 3 descrip_req TEXT 1 4 argum_req TEXT 1 5 output_tit TEXT 35 Current number of rows: 94	13 authproj TEXT 63 14 authowis INTEGER Current number of rows: 2287 Table: catfeat Read Password: No Modify Password: No Table Description: category fccd correspondence (download) Column definitions # Name Type I category TEXT 3 2 fccd TEXT 5 Current number of rows: 127 Table: cat_tit Read Password: No Modify Password: No Table: cat_tit Read Password: No Table Description: category titles (download) Column definitions // Name Type I category TEXT 3 Column definitions // Name / Name Type I category TEXT 3 2 ca_tit TEXT 3 2 cat_tit TEXT 1 3 argum_req TEXT 1 4 argum_req TEXT 35 Current number of rows: 94	12	politician	TEXT 40		
14 authowis INTEGER Current number of rows: 2287 Table: catfeat Read Prassword: No Modify Password: No Table Description: category fccd correspondence (download) Column definitions // Name Type // Column definitions // Name TeXT 5 Current number of rows: 127 Table: cat_tit Read Prassword: No Modify Password: No Table: cat_tit Read Prassword: No Modify Password: No Table: cat_tit Read Prassword: No Modify Password: No Table Description: category titles (download) Column definitions // Name Type // Name Type // Name Type // Name Type // A argum_req TEXT 3 // Courtent number of rows: 94	14 authovia INTEGER Current number of rows: 2287 Table: catfeat Read Password: No Table Description: category fccd correspondence (download) Column definitions # Name Type I category TEXT 3 2 fccd TEXT 5 Current number of rows: 127 Table: cat_tit Read Password: No Modify Password: No Table: cat_tit Read Password: No Table: cat_tit Table: cat_tit Read Password: No Table: cat_tit Table: cat_tit TEXT 3 i cat_tit TEXT 3 i cat_tit i argum_req TEXT 1 i output_tit TEXT 35 Current number of rows: 94 </td <td>13</td> <td>authproj</td> <td>TEXT 63</td> <td></td> <td></td>	13	authproj	TEXT 63		
Current number of rows: 2287 Table: catfeat Read Password: No Modify Password: No Table Description: category fccd correspondence (download) Column definitions Name Type Index Expression 1 category TEXT 3 2 fccd TEXT 5 Current number of rows: 127 Table: cat_tit Read Password: No Modify Password: No Modify Password: No Table Description: category titles (download) Column definitions Name Type Index Expression 1 category TEXT 3 2 cat_tit TEXT 77 3 descrip_req TEXT 1 4 argum_req TEXT 1 5 output_tit TEXT 35 Current number of rows: 94	Current number of rows: 2287 Table: catfeat Read Pasawoord: No Modify Pasawoord: No Table Description: category food correspondence (download) Column definitions V Name Type Index Expression 1 category TEXT 3 2 food TEXT 5 Current number of rows: 127 Table: cat_tit Read Pasaword: No Modify Pasaword: No Modify Pasaword: No Table Description: category titles (download) Column definitions V Name Type Index Expression 1 category TEXT 3 2 cat_tit TEXT 77 3 descrip_req TEXT 1 4 argum_req TEXT 1 5 output_tit TEXT 35 Current number of rows: 94	14	authowis	INTEGER		
Table: catfeat Read Password: No Modify Password: No Table Description: category fccd correspondence (download) Column definitions # Name Type Index Expression 1 category TEXT 3 2 fccd Table: cat_tit Read Password: No Modify Password: No Modify Password: No Table Description: category titles (download) Column definitions # Name Type Index Expression 1 category Table Description: category titles (download) Column definitions # Name Type Index Expression 1 category 1 category Column definitions # Name Type Index Expression 1 category 1 category 1 category 1 category 1 category 2 cat_tit 1 category	Table: catfeat Read Password: No Modify Password: No Table Description: category fccd correspondence (download) Column definitions # Name Type I category TEXT 3 2 fccd TEXT 5 Current number of rows: 127 Table: cat_tit Read Password: No Modify Password: No Modify Password: No Table Description: category titles (download) Column definitions # Name Type Index Expression 1 category TEXT 3 Column definitions # Name # Name Type Index Expression 1 category TEXT 3 2 cat_tit TEXT 1 i argum_req TEXT 1 i output_tit TEXT 35 Current number of rows: 94	Curr	rent number of	rows: 2287		
Table Description: category fccd correspondence (download) Column definitions Name Type I category TEXT 3 2 fccd TEXT 5 Current number of rows: 127 Table: cat_tit Read Password: No Table Description: category titles (download) Column definitions V Name Type Index Expression 1 category TEXT 3 2 cat_tit TEXT 3 2 cat_tit TEXT 3 2 cat_tit TEXT 77 3 descrip_req TEXT 1 5 output_tit TEXT 35 Current number of rows: 94	Table Description: category fccd correspondence (download) Column definitions // Name Type 1 category TEXT 5 Current number of rows: 127 Table: cat_tit Read Password: No Modify Password: No Table Description: category titles (download) Column definitions // Name Type Index Expression 1 category 1 category 1 TEXT 3 2 cat_tit TEXT 3 2 cat_tit 1 argum_req 1 argum_req 1 TEXT 35 Current number of rows: 94	Fabi Read Mod	e: catfeat i Password: No ify Password: N	ło		
Column definitions Name Type Index Expression 1 category TEXT 3 2 food TEXT 5 Current number of rows: 127 Table: cat_tit Read Password: No Modify Password: No Table Description: category titles (download) Column definitions Name Type Index Expression 1 category TEXT 3 2 cat_tit TEXT 77 3 descrip_req TEXT 1 4 argum_req TEXT 1 5 output_tit TEXT 35 Current number of rows: 94	Column definitions Name Type Index Expression 1 category TEXT 3 2 feed TEXT 5 Current number of rows: 127 Table: cat_tit Read Password: No Modify Password: No Table Description: category titles (download) Column definitions Name Type Index Expression 1 category TEXT 3 2 cat_tit TEXT 77 3 descrip_req TEXT 1 4 argum_req TEXT 1 5 output_tit TEXT 35 Current number of rows: 94	Tabl	e Description: c	ategory feed corn	espondence (download)	
Name Type Index Expression 1 category TEXT 3 2 food TEXT 5 Current number of rows: 127	Name Type Index Expression 1 category TEXT 3 2 fccd TEXT 5 Current number of rows: 127	Colu	mn definitions	_		
1 category TEXT 3 2 fccd TEXT 5 Current number of rows: 127 Table: cat_tit Table: cat_tit Read Password: No Modify Password: No Table Description: category titles (download) Column definitions // Name Type Index Expression 1 category 1 category 2 cat_tit 1 category 2 cat_tit 3 descrip_req 4 argum_req 5 output_tit Current number of rows: 94	1 category TEXT 3 2 fccd TEXT 5 Current number of rows: 127 Table: cat_tit Read Password: No Modify Password: No Table: cat_tit Read Password: No Table Description: category titles (download) Column definitions // Name Type Index Expression i category i category i category i category i argum_req i argum_req i argum_req i TEXT 35 Current number of rows: 94	ŧ.	Name	Туре	Index Expression	
2 fccd TEXT 5 Current number of rows: 127 Table: cat_tit Table: cat_tit Read Password: No Table Description: category titles (download) Column definitions // Name Type I category TEXT 3 2 cat_tit 1 category 2 cat_tit 4 argum_req 5 output_tit Current number of rows: 94	2 fccd TEXT 5 Current number of rows: 127 Table: cat_tit Read Password: No Table: cat_tit Read Password: No Table: cat_tit Table: cat_tit Read Password: No Table Description: category titles (download) Column definitions // Name Type Index Expression 1 category TEXT 3 2 cat_tit TEXT 77 3 descrip_req TEXT 1 4 argum_req TEXT 35 Current number of rows: 94	L	category	TEXT 3		
Current number of rows: 127 Table: cat_tit Read Password: No Modify Password: No Table Description: category titles (download) Column definitions Name Type Index Expression 1 category TEXT 3 2 cat_tit TEXT 77 3 descrip_req TEXT 1 4 argum_req TEXT 1 5 output_tit TEXT 35 Current number of rows: 94	Current number of rows: 127 Table: cat_tit Read Password: No Modify Password: No Table Description: category titles (download) Column definitions V Name Type Index Expression 1 category TEXT 3 2 cat_tit TEXT 77 3 descrip_req TEXT 1 4 argum_req TEXT 1 5 output_tit TEXT 35 Current number of rows: 94	2	fccd	TEXT 5		
Table Description: category titles (download) Column definitions Name Type Index Expression 1 category TEXT 3 2 cat_tit TEXT 77 3 descrip_req TEXT 1 4 argum_req TEXT 1 5 output_tit TEXT 35	Table Description: category titles (download) Column definitions Index Expression Name Type Index Expression i category TEXT 3 2 cat_tit TEXT 77 3 descrip_req TEXT 1 4 argum_req TEXT 1 5 output_tit TEXT 35 Current number of rows: 94	Curr	rent number of	rows: 127		
Column definitions Name Type Index Expression 1 category TEXT 3 2 cat_tit TEXT 77 3 descrip_req TEXT 1 4 argum_req TEXT 1 5 output_tit TEXT 35 Current number of rows: 94	Column definitions Type Index Expression 1 category TEXT 3 2 cat_tit TEXT 77 3 descrip_req TEXT 1 4 argum_req TEXT 1 5 output_tit TEXT 35 Current number of rows: 94 94	Curr Fabl Read Viodi	e: cat_tit I Password: No ify Password: N	rows: 127		
Name Type Index Expression 1 category TEXT 3 2 cat_tit TEXT 77 3 descrip_req TEXT 1 4 argum_req TEXT 1 5 output_tit TEXT 35	Name Type Index Expression 1 category TEXT 3 2 cat_tit TEXT 77 3 descrip_req TEXT 1 4 argum_req TEXT 1 5 output_tit TEXT 35	Curr Fabl Read Viodi Fable	e: cat_tit l Password: No ify Password: N e Description: c	rows: 127 To rategory titles (dow	wnload)	
1 category TEXT 3 2 cat_tit TEXT 77 3 descrip_req TEXT 1 4 argum_req TEXT 1 5 output_tit TEXT 35 Current number of rows: 94	1 category TEXT 3 2 cat_tit TEXT 77 3 descrip_req TEXT 1 4 argum_req TEXT 1 5 output_tit TEXT 35 Current number of rows: 94 94	Curr Fabi Read Viodi Fabi	e: cat_tit I Password: No ify Password: N e Description: c mn definitions	rows: 127 To ategory titles (dow	wnload)	
2 cat_tit TEXT 77 3 descrip_req TEXT 1 4 argum_req TEXT 1 5 output_tit TEXT 35	2 cat_tit TEXT 77 3 descrip_req TEXT 1 4 argum_req TEXT 1 5 output_tit TEXT 35	Curr Fable Read Viodi Fable Colui	e: cat_tit l Password: No ify Password: N e Description: c mn definitions Name	rows: 127 To ategory titles (dow Type	vaload) Index Expression	
3 descrip_req TEXT 1 4 argum_req TEXT 1 5 output_tit TEXT 35 Current number of rows: 94	3 descrip_req TEXT 1 4 argum_req TEXT 1 5 output_tit TEXT 35 Current number of rows: 94	Curr Fabi Read Viodi Fabi	e: cat_tit I Password: No ify Password: No e Description: c mn definitions Name category	rows: 127 To ategory titles (dow Type TEXT 3	vaload) Index Expression	
4 argum_req TEXT 1 5 output_tit TEXT 35 Current number of rows: 94	argum_req TEXT 1 5 output_tit TEXT 35 Current number of rows: 94	Curr Fable Read Viodi Fable	e: cat_tit I Password: No ify Password: N e Description: c mn definitions Name category cat_tit	rows: 127 To ategory titles (dow Type TEXT 3 TEXT 77	vaload) Index Expression	
5 output_tit TEXT 35 Current number of rows: 94	5 output_tit TEXT 35 Current number of rows: 94	Curr Fable Read Viodi Fable Colum	e: cat_tit l Password: No ify Password: No ify Password: N e Description: c mn definitions Name category cat_tit descrip_req	rows: 127 To ategory titles (dow Type TEXT 3 TEXT 77 TEXT 1	vaload) Index Expression	,
Current number of rows: 94	Current number of rows: 94	Curr Fable Read Viodi Fable	e: cat_tit I Password: No ify Password: No ify Password: N e Description: c mn definitions Name category cat_tit descrip_req argum_req	Type TEXT 3 TEXT 77 TEXT 1 TEXT 1	vaload) Index Expression	,
		Curr Fabi Read Viodi Fabi	e: cat_tit l Password: No ify Password: No ify Password: N e Description: c mn definitions Name category cat_tit descrip_req argum_req output_tit	rows: 127 lo ategory titles (dow Type TEXT 3 TEXT 77 TEXT 1 TEXT 1 TEXT 1 TEXT 35	vaload) Index Expression	
		Curr Fabl Read Viodi Fabl	e: cat_tit l Password: No ify Password: No ify Password: No e Description: c mn definitions Name category cat_tit descrip_req argum_req output_tit ent number of	rows: 127 Type TEXT 3 TEXT 77 TEXT 1 TEXT 1 TEXT 1 TEXT 35 rows: 94	vaload) Index Expression	
		Curr Fabl Read Viodi Fabl	e: cat_tit l Password: No ify Password: No ify Password: N e Description: c mn definitions Name category cat_tit descrip_req argum_req output_tit vent number of	Type TEXT 3 TEXT 3 TEXT 77 TEXT 1 TEXT 1 TEXT 1 TEXT 35 rows: 94	vaload) Index Expression	
		Curr Fabl Read Viodi Fabl	e: cat_tit l Password: No ify Password: No ify Password: N e Description: c mn definitions Name category cat_tit descrip_req argum_req output_tit rent number of	Type TEXT 3 TEXT 3 TEXT 77 TEXT 1 TEXT 1 TEXT 1 TEXT 35 rows: 94	vaload) Index Expression	
		Curr Fabl Read Viodi Fabl	e: cat_tit l Password: No ify Password: No ify Password: N e Description: c mn definitions Name category cat_tit descrip_req argum_req output_tit rent number of	Type TEXT 3 TEXT 3 TEXT 77 TEXT 1 TEXT 1 TEXT 1 TEXT 35 rows: 94	vaload) Index Expression	
		Curr Fabl Read Viodi Colui	e: cat_tit l Password: No ify Password: No ify Password: N e Description: c mn definitions Name category cat_tit descrip_req argum_req output_tit rent number of	Type TEXT 3 TEXT 77 TEXT 1 TEXT 1 TEXT 1 TEXT 35 rows: 94	vaload) Index Expression	
		Curr Fabl Read Viodi Colum	e: cat_tit l Password: No ify Password: No ify Password: N e Description: c mn definitions Name category cat_tit descrip_req argum_req output_tit vent number of	Type TEXT 3 TEXT 77 TEXT 1 TEXT 1 TEXT 1 TEXT 35 rows: 94	vaload) Index Expression	
		Curr Fabl Read Modi Colum	e: cat_tit l Password: No ify Password: No ify Password: N e Description: c mn definitions Name category cat_tit descrip_req argum_req output_tit vent number of	Type TEXT 3 TEXT 77 TEXT 1 TEXT 1 TEXT 1 TEXT 35 rows: 94	vaload) Index Expression	
		Curr Fabl Read Modi Colum	e: cat_tit Password: No ify Password: No ify Password: N e Description: c mn definitions Name category cat_tit descrip_req argum_req output_tit vent number of	Type TEXT 3 TEXT 77 TEXT 1 TEXT 1 TEXT 1 TEXT 35 rows: 94	vaload) Index Expression	
		Curr Fabl Read Modi Colum	e: cat_tit Password: No ify Password: No ify Password: N e Description: c mn definitions Name category cat_tit descrip_req argum_req output_tit rent number of	rows: 127 Type TEXT 3 TEXT 77 TEXT 1 TEXT 1 TEXT 1 TEXT 35 rows: 94	vaload) Index Expression	

1

Tab	le Description: oc	e rank includes/ex	cludes on scenario	
Colu 1 2 3 Cur	umn definitions Name scenname in_outoce ocerank	Type TEXT 8 TEXT 1 INTEGER	Index Expression	
Tab	le: wf_aum			
Rea Moi	d Password: No dify Password: No)		
Tab	le Description: w	ork function numb	ers	
Colı	umn definitions			
	Name	Туре	Index Expression	
T	wi_num	II I BUEK	-	
 Tab				
Tab Rea Moo	le: tempscen d Password: No lify Password: No)		
Tab Rea Moo	le: tempscen d Password: No lify Password: No le Description: tal	ble to hold current	scenario wf info	
Tab Rea Moo Tab Colu	le: tempscen d Password: No lify Password: No le Description: tal	ble to hold current	scenario wf info	
Tab Rea Moo Tab Colu	le: tempscen d Password: No lify Password: No le Description: tal umn definitions Name	ble to hold current	scenario wf info Index Expression	
Tab Rea Moo Tab Colu	le: tempscen d Password: No lify Password: No le Description: tal umn definitions Name district	ble to hold current Type TEXT 3	scenario wf info Index Expression	
Tab Rea Moo Tab Colu #	le: tempscen d Password: No lify Password: No le Description: ta umn definitions Name district cwis funcid	ble to hold current Type TEXT 3 INTEGER INTEGER	scenario wf info Index Expression	
Tab Rea Moo Tab Colu # 1 2 3 4	le: tempscen d Password: No lify Password: No le Description: tal umn definitions Name district cwis funcid ocerank	ble to hold current Type TEXT 3 INTEGER INTEGER INTEGER	scenario wf info Index Expression	
Tab Rea Moo Tab Colu # 1 2 3 4 5	le: tempscen d Password: No lify Password: No le Description: tal umn definitions Name district cwis funcid ocerank divnam	ble to hold current Type TEXT 3 INTEGER INTEGER INTEGER TEXT 3	scenario wf info Index Expression	
Tab Rea Moo Tab Colu 1 1 2 3 4 5 6	le: tempscen d Password: No lify Password: No le Description: tal umn definitions Name district cwis funcid ocerank divnam divrank	ble to hold current Type TEXT 3 INTEGER INTEGER INTEGER TEXT 3 INTEGER	scenario wf info Index Expression	
Tab Rea Mod Tab Colu # 1 2 3 4 5 6 7 7	le: tempscen d Password: No lify Password: No lify Password: No le Description: tal umn definitions Name district cwis funcid ocerank divnam divrank projcls	ble to hold current Type TEXT 3 INTEGER INTEGER INTEGER TEXT 3 INTEGER TEXT 2	scenario wf info Index Expression	
Tab Rea Moo Tab Colu # 1 2 3 4 5 5 7 8	le: tempscen d Password: No lify Password: No lify Password: No le Description: ta umn definitions Name district cwis funcid ocerank divnam divrank projcls focd	ble to hold current Type TEXT 3 INTEGER INTEGER TEXT 3 INTEGER TEXT 3 INTEGER TEXT 2 TEXT 5 CURRENCY	scenario wf info Index Expression	
Tab Rea Mod Tab Colu # 1 2 3 4 5 5 6 7 8 9	le: tempscen d Password: No lify Password: No lify Password: No le Description: tal amn definitions Name district cwis funcid ocerank divnam divrank projcls fccd totcost	ble to hold current Type TEXT 3 INTEGER INTEGER INTEGER TEXT 3 INTEGER TEXT 2 TEXT 5 CURRENCY	scenario wf info Index Expression	
Tab Rea Mod Tab Colu 1 1 2 3 4 5 6 6 7 8 9	le: tempscen d Password: No lify Password: No lify Password: No le Description: tal umn definitions Name district cwis funcid ocerank divnam divrank projcls fccd totcost	ble to hold current Type TEXT 3 INTEGER INTEGER INTEGER TEXT 3 INTEGER TEXT 2 TEXT 5 CURRENCY	scenario wf info Index Expression	
Tab Rea Mon Tab Colu 1 2 3 4 5 6 6 7 8 9	le: tempscen d Password: No lify Password: No le Description: ta umn definitions Name district cwis funcid ocerank divnam divrank projcls focd totcost	ble to hold current Type TEXT 3 INTEGER INTEGER INTEGER TEXT 3 INTEGER TEXT 2 TEXT 5 CURRENCY	scenario wf info Index Expression	
Tab Rea Moo Tab Colu 1 1 2 3 4 5 6 6 7 8 9	le: tempscen d Password: No lify Password: No lify Password: No le Description: tal umn definitions Name district cwis funcid ocerank divnam divrank projcls fccd totcost	ble to hold current Type TEXT 3 INTEGER INTEGER INTEGER TEXT 3 INTEGER TEXT 2 TEXT 5 CURRENCY	scenario wf info Index Expression	

CURRENCY 10 cumcost ٠ 11 wf_num INTEGER TEXT 1 12 appcode Current number of rows: 2333 Table: fccdprti **Read Password:** No Modify Password: No Table Description: feature cost code prefix titles **Column definitions** Index Expression # Name Туре INTEGER 1 fccdprfx TEXT 50 2 fccdptit INTEGER 3 fccdbrk Current number of rows: 35 **Table:** brktitle Read Password: No Modify Password: No **Table Description: Column definitions** Name Index Expression Туре . fccdbrk INTEGER 1 2 BRKTTTLE TEXT 30 Current number of rows: 6 Table: fccdxtb Read Password: No Modify Password: No Table Description: Column definitions Index Expression Name Туре # **TEXT 18** 1 rlab 2 1 TEXT 1

3 cl CURRENCY 4 c2 CURRENCY 5 c3 CURRENCY 6 c4 CURRENCY 7 c5 CURRENCY 8 cool CURRENCY 8 cool CURRENCY 7 c5 CURRENCY 8 cool CURRENCY Table: fopratio Modify Password: No Modify Password: No Table Description: Column definitions # Name Type Index Expression 1 rtab TEXT 18 2 al CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divzprn Read Password: No Modify Password: No Table Description: Column definitions # Name Type Index Expression 1 rtab TEXT 18 2 al CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divzprn Read Password: No Modify Password: No Table Description: Column definitions # Name Type Index Expression 1 rtab TEXT 18 2 al CURRENCY 3 a2 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 6 a5 CURRENCY 8 a7 CURRENCY 8 a7 CURRENCY	3 cl CURRENCY 4 c2 CURRENCY 5 c3 CURRENCY 6 c4 CURRENCY 7 c5 CURRENCY 8 cool CURRENCY 7 c5 CURRENCY 8 cool CURRENCY Current number of rows: 127 Table Description: Column definitions # Name Type Index Expression 1 riab TEXT 18 2 al CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divxprn Read Password: No Modify Password: No Table Description: Column definitions # Name Type Index Expression 1 riab TEXT 18 2 al CURRENCY 4 a3 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 4 a3 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a56 CURRENCY 8 a7 CURRENCY 6 a5 CURRENCY 7 a56 CURRENCY 8 a7 CURRENCY Current number of rows: 12	3						
3 ci CURRENCY 4 c2 CURRENCY 5 c3 CURRENCY 6 c4 CURRENCY 7 c5 CURRENCY 8 cot CURRENCY 8 cot CURRENCY Current number of rows: 127 Table: foprato Modify Password: No Table Description: Column definitions # Name Type Index Expression 1 risb TEXT 18 2 ai CURRENCY 3 a2 CURRENCY Current number of rows: 32 Table: divzprn Read Password: No Table Description: Column definitions # Name Type Index Expression Table: divzprn Read Password: No Table Description: Column definitions # Name Type Index Expression 1 risb TEXT 18 2 ai CURRENCY 3 a2 CURRENCY 3 a2 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 4 a3 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY 8 a7 CURRENCY	3 ci CURRENCY 4 c2 CURRENCY 5 c3 CURRENCY 6 c4 CURRENCY 7 c5 CURRENCY 8 cot CURRENCY Current number of rows: 127 Table: fcpr.tb Read Password: No Table Description: Column definitions 4 Name Type Index Expression 1 riab TEXT 18 2 al CURRENCY 4 a3 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divzpen Read Password: No Table Description: Column definitions 4 Name Type Index Expression 1 riab TEXT 18 2 al CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divzpen Read Password: No Table Description: Column definitions 4 Name Type Index Expression 1 riab TEXT 18 2 al CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	3		a mental				
4 c2 CURRENCY 5 c3 CURRENCY 6 c4 CURRENCY 7 c5 CURRENCY 8 cox CURRENCY 8 cox CURRENCY Current number of rows: 127 Table: foprato Read Password: No Table Description: Column definitions 4 Name Type Index Expression 1 risb TEXT 18 2 al CURRENCY 4 a3 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divxprn Read Password: No Modify Password: No Table Description: Column definitions 4 Name Type Index Expression Table: divxprn Read Password: No Modify Password: No Table Description: Column definitions 4 Name Type Index Expression 1 risb TEXT 18 2 al CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 6 a5 CURRENCY 6 a7 CURRENCY 7 a6 CURRENCY Current number of rows: 12	4 c2 CURRENCY 5 c3 CURRENCY 6 c4 CURRENCY 7 c5 CURRENCY 8 cot CURRENCY 8 cot CURRENCY Current number of rows: 127 Table: fopratio Read Password: No Modify Password: No Table Description: Column definitions # Name Type Index Expression 1 risb TEXT 18 2 al CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divzprn Read Password: No Modify Password: No Table Description: Column definitions # Name Type Index Expression 1 risb TEXT 18 2 al CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divzprn Read Password: No Modify Password: No Table Description: Column definitions # Name Type Index Expression 1 risb TEXT 18 2 al CURRENCY 4 a3 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12		CI	CURRENCY				
5 c3 CURRENCY 6 c4 CURRENCY 7 c5 CURRENCY 8 ctot CURRENCY Current manuber of rows: 127 Table: fcprxtb Read Password: No Modify Password: No Index Expression 7 c4 c3 Column definitions # Name Type Index Expression 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY Current number of rows: 32 Table: divxprn Read Password: No Table Description: Column definitions # Name Type Index Expression 1 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 3 a2 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 3 a	5 c3 CURRENCY 6 od CURRENCY 7 c5 CURRENCY 8 ctot CURRENCY Current number of rows: 127 Table: fopration: Column definitions # Name Type I rabe TEXT 18 2 a1 CURRENCY 3 Current number of rows: 32 Table: divzpn Read Password: No Modify Password: No Table: divzpn Read Password: No Modify Password: No Table: divzpn Read Password: No Modify Password: No Table: divzpn Read Password: No Table: divzpn Index Expression 1 riab TEXT 18 <td <="" colspan="2" th=""><th>4</th><th>CZ</th><th>CURRENCY</th><th></th><th></th></td>	<th>4</th> <th>CZ</th> <th>CURRENCY</th> <th></th> <th></th>		4	CZ	CURRENCY		
6 c4 CURRENCY 7 c5 CURRENCY 8 cot CURRENCY Current number of rows: 127 Table: fcprxtb Read Password: No Modify Password: No Table Description: Column definitions # Name Type Index Expression 1 riab TEXT 18 2 al CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divxprn Read Password: No Modify Password: No Table Description: Column definitions # Name Type Index Expression Table: divxprn Read Password: No Modify Password: No Table Description: Column definitions # Name Type Index Expression 1 riab TEXT 18 2 al CURRENCY 3 a2 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 6 a5 CURRENCY 6 a7 CURRENCY Current number of rows: 12	6 c4 CURRENCY 7 c5 CURRENCY 8 ctot CURRENCY Current number of rows: 127 Table: fcprxtb Read Password: No Modify Password: No Table Description: Column definitions # Name Type Index Expression 1 riab TEXT 18 2 al CURRENCY 4 a3 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divzprn Read Password: No Modify Password: No Table Description: Column definitions # Name Type Index Expression Table Description: Column definitions # Name Type Index Expression 1 riab TEXT 18 2 al CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	5	ය	CURRENCY				
7 c5 CURRENCY 8 cot CURRENCY Current number of rows: 127 Table: fcprxtb Read Password: No Modify Password: No Table: Description: Column definitions # Name Type Index Expression 1 rbb TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY Current number of rows: 32 Table: divzprn Read Password: No Modify Password: No Modify Password: No Table: divzprn Read Password: No Modify Password: No Table Description: Column definitions # Name Type Index Expression 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 4 a3 CURRENCY	7 c5 CURRENCY 8 cot CURRENCY Current number of rows: 127 Table: fopratio Column definitions # Name Type Index Expression 1 rabie TEXT 18 2 2 a1 CURRENCY 4 a3 CURRENCY Column definitions Index Expression Table: divaprn Read Password: No Table Description: Column definitions # Name Type Index Expression 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 3 a2 CURRENCY 3 a2 CURRENCY 3 a4 CURRENCY	6	c4	CURRENCY				
8 cot CURRENCY Currest number of rows: 127 Table: fcprxtb Read Password: No Modify Password: No Table Description: Column definitions // Name 1 riab 1 riab 2 al CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divxprn Read Password: No Modify Password: No Table: divxprn Read Password: No Modify Password: No Table: divxprn Read Password: No Modify Password: No Table: divxprn Read Password: No Table: divxprn Cu	8 cot CURRENCY Current number of rows: 127 Table: fcprxtb Read Password: No Modify Password: No Table Description: Column definitions # Name Type Index Expression 1 riab TEXT 18 2 al CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divxprn Read Password: No Modify Password: No Table Description: Column definitions # Name Type Index Expression 1 riab TEXT 18 2 al CURRENCY 3 a2 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 4 a3 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	7	ග්	CURRENCY				
Courrent number of rows: 127 Table: fcprxtb Read Password: No Modify Password: No Table Description: Column definitions # Name Type Index Expression 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divxprn Read Password: No Table Description: Column definitions # Name Type Index Expression Table Description: Column definitions # Name Type Index Expression 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 8 a7 CURRENCY Current number of rows: 12	Current number of rows: 127 Table: fcprxtb Read Password: No Table Description: Column definitions # Name Type Index Expression 1 risb TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divxprn Read Password: No Modify Password: No Table Description: Column definitions # Name Type Index Expression 1 risb TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	8	ctot	CURRENCY				
Current number of rows: 127 Table: fcprxtb Read Pansword: No Modify Pansword: No Table Description: Column definitions # Name Type Index Expression 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY Current number of rows: 32 Table: divxprn Read Pansword: No Modify Pansword: No Table Description: Column definitions # Name Type Index Expression 1 riab TEXT 18 2 a1 CURRENCY 5 a4 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 8 a7 CURRENCY Current number of rows: 12	Current number of rows: 127 Table: fcprxtb Read Prasword: No Modify Prasword: No Table Description: Column definitions # Name Type Index Expression 1 riab TEXT 18 2 al CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divxpm Read Prasword: No Table Description: Column definitions # Name Type Index Expression 1 riab TEXT 18 2 al CURRENCY 3 a2 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY Current number of rows: 12	Ŭ		00.112.101				
Table: fcprxtb Read Password: No Modify Password: No Table Description: Column definitions # Name Type Index Expression 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divxprn Read Password: No Modify Password: No Table Description: Index Expression Column definitions ///index # Name Type Index Expression 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY <th>Table: fcprxib Read Password: No Modify Password: No Table Description: Column definitions # Name Type I risb TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table divxpm Read Password: No Modify Password: No Table Description: Column definitions # Name Type I riab TEXT 18 2 a1 CURRENCY Solumn definitions # Name Type Index Expression 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 3 a2 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12</th> <th>Cu</th> <th>errent number of rov</th> <th>ws: 127</th> <th></th> <th></th>	Table: fcprxib Read Password: No Modify Password: No Table Description: Column definitions # Name Type I risb TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table divxpm Read Password: No Modify Password: No Table Description: Column definitions # Name Type I riab TEXT 18 2 a1 CURRENCY Solumn definitions # Name Type Index Expression 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 3 a2 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	Cu	errent number of rov	ws: 127				
Table Description: Column definitions Index Expression 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divxprn Read Password: No Modify Password: No Table Description: Column definitions 4 Name 1 riab Table Description: Column definitions 5 a1 CURRENCY 3 a2 CURRENCY 4 a3 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 5 a4 CURRENCY 6 a5 CURRENCY 8 a7 CURRENCY 8 a7 CURRENCY 8 a7	Table Description: Column definitions # Name Type Index Expression 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divxprn Read Password: No Modify Password: No Table Description: Column definitions # Name Type 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 3 a2 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY 8 a7 CURRENCY	Tal Rei Ma	ble: fcprxtb ad Password: No bdify Password: No	<u></u>				
Column definitions Name Type Index Expression 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divxprn Read Password: No Modify Password: No Table Description: Column definitions // Name Type Index Expression 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 8 a7 CURRENCY 8 a7 CURRENCY 2 Current number of rows: 12	Column definitions Name Type Index Expression 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divxprn Read Password: No Modify Password: No Table Description: Column definitions Name Type Index Expression 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY	Tal	ble Description:					
Index Type Index Expression 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divxpm Read Password: No Modify Password: No Table Description: Column definitions # Name Type Index Expression 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY 8 a7 CURRENCY	Image: Name Type Index Expression 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divxprn Read Password: No Table Description: Column definitions # Name Type Index Expression 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 3 a2 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 8 a7 CURRENCY 8 a7 CURRENCY	Coi	luma definitions					
1 riab TEXT 18 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divxpm Read Password: No Modify Password: No Table Description: Column definitions # Name Type 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 3 a2 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12 CURRENCY	1 riab TEXT 18 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divxpm Read Password: No Mane Type Index Expression Column definitions # Name Type 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 8 a7 CURRENCY Current number of rows: 12		Name	Тупе	Index Expression			
1 Ideal 10 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divxprn Read Password: No Table: divxprn Read Password: No Table Description: Column definitions # Name Type Index Expression 1 rlab TEXT 18 18 2 a1 CURRENCY 3 3 a2 CURRENCY 5 4 a3 CURRENCY 5 5 a4 CURRENCY 6 6 a5 CURRENCY 7 8 a7 CURRENCY 7 Current number of rows: 12	1 Institute 2 al CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divxprn Read Password: No Modify Password: No Table Description: Column definitions # Name Type 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	1	steh	4785 TRYT 19	THREE TRACTORION			
2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divxprn Read Password: No Table: divxprn Read Password: No Table Description: Column definitions # Name Type 1 rlab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divxpm Read Password: No Table: divxpm Read Password: No Table: divxpm Read Password: No Table Description: Column definitions # Name Type 1 rlab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	1		IEAI IO				
3 a2 CURRENCY 4 a3 CURRENCY Current number of rows: 32 Table: divxprn Read Password: No Mane Type Index Expression Table Description: Column definitions # Name Type Index Expression 1 rlab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	3 a2 CURRENCY Current number of rows: 32 Table: divxpm Read Password: No Modify Password: No Table Description: Column definitions # Name Type Index Expression 1 rlab 1 rlab 2 a1 CURRENCY 3 a2 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 Current number of rows: 12	4	-0	CURRENCI				
 LS CURRENCY Current number of rows: 32 Table: divxprn Read Password: No Modify Password: No Table Description: Column definitions Name Type Index Expression 1 rlab TEXT 18 2 al CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY 	 LS CURRENCY Current number of rows: 32 Table: divxpm Read Password: No Modify Password: No Table Description: Column definitions Name Type Index Expression Column definitions Index Expression Column definitions Column definitions Index Expression Column definitions Index Expression 1 riab TEXT 18 2 al CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 8 a7 CURRENCY Current number of rows: 12	3	82	CURRENCY				
Current number of rows: 32 Table: divxprn Read Password: No Modify Password: No Table Description: Column definitions // Name Type Index Expression 1 rlab TEXT 18 2 al CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	Current number of rows: 32 Table: divxprn Read Password: No Modify Password: No Table Description: Column definitions Manue Type Index Expression I rlab TEXT 18 2 al CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	4	ມ	CURRENCY				
Table: divxprn Read Password: No Modify Password: No Table Description: Column definitions # Name Type I rlab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	Table: divxpm Read Password: No Modify Password: No Table Description: Column definitions # Name Type Index Expression 1 rlab 1 rlab 2 a1 CURRENCY 3 a2 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 Current number of rows: 12	~						
Table: divxprn Read Password: No Modify Password: No Table Description: Column definitions # Name Type Index Expression 1 rlab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12 Laborer	Table: divxprn Read Password: No Modify Password: No Table Description: Column definitions # Name Type Index Expression 1 rlab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12 Laborer 12	Cu	rrent number of rov	vs: 32				
Table: divxprn Read Password: No Modify Password: No Table Description: Column definitions Mame Type Index Expression 1 rlab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY	Table: divxpm Read Password: No Modify Password: No Table Description: Column definitions // Name Type Index Expression 1 rlab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12 Line of the second se							
Table Description: Column definitions Name Type Index Expression 1 rlab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	Table Description: Column definitions Index Expression 1 rlab Index Expression 1 rlab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	Mo	dify Password: No					
Column definitions#NameTypeIndex Expression1rlabTEXT 182a1CURRENCY3a2CURRENCY4a3CURRENCY5a4CURRENCY6a5CURRENCY7a6CURRENCY8a7CURRENCYCurrent number of rows: 12	Column definitions#NameTypeIndex Expression1rlabTEXT 182a1CURRENCY3a2CURRENCY4a3CURRENCY5a4CURRENCY6a5CURRENCY7a6CURRENCY8a7CURRENCYCurrent number of rows: 12	Tal	ble Description:					
#NameTypeIndex Expression1rlabTEXT 182a1CURRENCY3a2CURRENCY4a3CURRENCY5a4CURRENCY6a5CURRENCY7a6CURRENCY8a7CURRENCYCurrent number of rows: 12	NameTypeIndex Expression1rlabTEXT 182a1CURRENCY3a2CURRENCY4a3CURRENCY5a4CURRENCY6a5CURRENCY7a6CURRENCY8a7CURRENCYCurrent number of rows: 12	Col	lumn definitions					
1riabTEXT 182a1CURRENCY3a2CURRENCY4a3CURRENCY5a4CURRENCY6a5CURRENCY7a6CURRENCY8a7CURRENCYCurrent number of rows: 12	1riabTEXT 182a1CURRENCY3a2CURRENCY4a3CURRENCY5a4CURRENCY6a5CURRENCY7a6CURRENCY8a7CURRENCYCurrent number of rows: 12	#	Name	Туре	Index Expression			
2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	2a1CURRENCY3a2CURRENCY4a3CURRENCY5a4CURRENCY6a5CURRENCY7a6CURRENCY8a7CURRENCY8a7CURRENCYCurrent number of rows: 12	1	rlah	TEXT 18				
3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	2	a1	CURRENCY				
3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	2	•7	CUMULICI				
5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	ab CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	5	•2	CIRDENOV				
5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	5 a4 CURRENCY 6 a5 CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	Å	N	CURRENUI				
o ab CURRENCY 7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	oabCURRENCY7a6CURRENCY8a7CURRENCYCurrent number of rows: 12	4		CURRENCY				
7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	7 a6 CURRENCY 8 a7 CURRENCY Current number of rows: 12	4	24					
8 a7 CURRENCY Current number of rows: 12	8 a7 CURRENCY Current number of rows: 12	4 5 6	24 25	CURRENCY				
Current number of rows: 12	Current number of rows: 12	4 5 6 7	24 25 26	CURRENCY CURRENCY				
Current number of rows: 12	Current number of rows: 12	4 5 6 7 8	24 25 26 27	CURRENCY CURRENCY CURRENCY				
		4 5 6 7 8	a4 a5 a6 a7	CURRENCY CURRENCY CURRENCY				
		4 5 6 7 8 Cui	a4 a5 a6 a7 rrent number of rov	CURRENCY CURRENCY CURRENCY 75: 12				
		4 5 6 7 8 Cui	a4 a5 a6 a7 rrent number of rov	CURRENCY CURRENCY CURRENCY rs: 12				
		4 5 6 7 8 Cui	a4 a5 a6 a7 rrent number of rov	CURRENCY CURRENCY CURRENCY rs: 12				
		4 5 6 7 8 Cu	a4 a5 a6 a7 rrent number of rov	CURRENCY CURRENCY CURRENCY rs: 12				
		4 5 6 7 8 Cui	a4 a5 a6 a7 rrent number of rov	CURRENCY CURRENCY CURRENCY 75: 12				
		4 5 6 7 8 Cui	a4 a5 a6 a7 rrent number of rov	CURRENCY CURRENCY CURRENCY 75: 12				
		4 5 6 7 8 Cu	a4 a5 a6 a7 rrent number of rov	CURRENCY CURRENCY CURRENCY 75: 12				
		4 5 6 7 8 Cu	a4 a5 a6 a7 rrent number of rov	CURRENCY CURRENCY CURRENCY 75: 12				
		4 5 6 7 8 Cu	a4 a5 a6 a7 rrent number of rov	CURRENCY CURRENCY CURRENCY 75: 12				
		4 5 6 7 8 Cu	a4 a5 a6 a7 rrent number of rov	CURRENCY CURRENCY CURRENCY 75: 12				
		4 5 6 7 8 Cu	a4 a5 a6 a7 rrent number of rov	CURRENCY CURRENCY CURRENCY 75: 12				
		4 5 6 7 8 Cur	a4 a5 a6 a7 rrent number of rov	CURRENCY CURRENCY CURRENCY 75: 12				

Rei Mo	dify Password: No		
Tal	ble Description:		
Col	umn definitions		
#	Name	Туре	Index Expression
1	riab	TEXT 18	
2	al	CURRENCY	
3	8 2	CURRENCY	
4	10	CURRENCI	
6	ar a5	CURRENCY	
7	26	CURRENCY	
8	a 7	CURRENCY	
	rrent number of rov	rs: 38	·
Tal Res	ele: fcprxprn id Password: No		
MO	dify Password: No		
Tat	e Description:		
Col	umn definitions	_	
1	Name	Type	Index Expression
1 1	nao	TEAT 18 CURRENCY	
3	ai a2	CURRENCY	
4	1 3	CURRENCY	
5	a 4	CURRENCY	
6	ស	CURRENCY	
7	26	CURRENCY	
•	2/	CURRENCI	
8			
8 Cui	Tent number of rov	vs: 28	
8 Cui	rent number of rov	rs: 28	
8 Cur	rent number of rov	vs: 28	
8 Cui	rent number of rov	vs: 28	
8 Cui	rent number of rov	vs: 28	
8 Cui	rent number of rov	vs: 28	
8 Cui	rent number of rov	vs: 28	
8 Cui	rent number of rov	vs: 28	
8 Cur	rent number of rov	vs: 28	
8 Cuu	rent number of rov	vs: 28	
8 Cuu	rent number of rov	vs: 28	
8 Cuu	rent number of rov	vs: 28	
8 Cuu	rent number of rov	vs: 28	
8 Cuu	rent number of rov	vs: 28	
8 Cur	rent number of rov	vs: 28	

	· · · · · · · · · · · · · · · · · · ·	
Table: feedzorn		
Read Password: No		
Modify Pastword: No		
Table Description:		
Column definitions		
Name	Туре	Index Expression
1 riab	TEXT 18	
2 al	CURRENCY	
3 12	CURRENCY	
4 33	CURRENCY	
5 a4	CURRENCY	
6 1 5	CURRENCY	
7 a 6	CURRENCY	
8 a7	CURRENCY	
arrent number of rou	ws: 56	
Table: dfprxprn Read Password: No		
Modify Password: No		
Table Description:		
Column definitions		
Name	Туре	Index Expression
l riab	TEXT 18	
2 al	CURRENCY	
3 22	CURRENCY	
l 23	CURRENCY	
5 84	CURRENCY	
៍ ស	CURRENCY	
1 a6	CURRENCY	
3 a7	CURRENCY	
"want sumber of w	74	
	JW3: 24	

Table: workfunc Read Password: No Modify Password: No

Table Description: Work Function data for FY92

Column definitions

#	Name	Туре	Index Expression
1	district	TEXT 3	-
2	appcode	TEXT 1	
3	wf_num	INTEGER	*
4	cwis	INTEGER	
5	projels	TEXT 2	
6	divnam	TEXT 3	
7	year	TEXT 2	
8	funcid	INTEGER	
9	rank	INTEGER	
10	cofmarid	INTEGER	
11	orgcode	TEXT 4	
12	dstrank	INTEGER	
13	divrank	INTEGER	
14	ocerank	INTEGER	•
15	fundlev	TEXT 1	
16	category	TEXT 3	
17	fccd	TEXT 5	
18	totcost	CURRENCY	
19	contracts	CURRENCY	
20	dirlabor	CURRENCY	
21	other	CURRENCY	
22	contred	CURRENCY	
23	corpsed	CURRENCY	
24	contrsa	CURRENCY	
25	corpssa	CURRENCY	
26	totdreg	CURRENCY	
27	typdreg	TEXT 2	
28	inspected	TEXT 7	
29	descrip	TEXT 56	
30	arguml	TEXT 64	
31	argum2	TEXT 64	
32	contcontr	CURRENCY	
33	constraint	TEXT 1	
34	output_measure	INTEGER	
35	biddate	INTEGER	
36	advdate	INTEGER	
37	lowuse	TEXT 1	
38	newrank	INTEGER	
39	userl	INTEGER	

•

40	user2	INTEGER
41	level	INTEGER

Current number of rows: 20699

Index Expression

Table: holdfunc Read Password: No Modify Password: No

Table Description:

Column definitions

#	Name	Туре
1	district	TEXT 3
2	appcode	TEXT 1
3	wf_num	INTEGER
4	cwis	INTEGER
5	projels	TEXT 2
6	divnam	TEXT 3
7	year	TEXT 2
8	funcid	INTEGER
9	rank	INTEGER
10	cofmarid	INTEGER
11	orgcode	TEXT 4
12	dstrank	INTEGER
13	divrank	INTEGER
14	ocerank	INTEGER
15	fundlev	TEXT 1
16	category	TEXT 3
17	fccd	TEXT 5
18	totcost	CURRENCY
19	contracts	CURRENCY
20	dirlabor	CURRENCY
21	other	CURRENCY
22	contred	CURRENCY
23	corpsed	CURRENCY
24	contra	CURRENCY
25	corpssa	CURRENCY
26	totdreg	CURRENCY
27	typdreg	TEXT 2
28	inspected	TEXT 7
29	descrip	TEXT 30
30	arguml	TEXT 64
31	argum2	TEAT 04
32	contcontr	CURRENCY

Appendix D Tables in Database

 33 constraint 34 output_measure 35 biddate 36 advdate 37 lowuse 38 newrank 39 user1 40 user2 41 level Current number of row 	TEXT 1 INTEGER INTEGER INTEGER INTEGER INTEGER INTEGER INTEGER	
Table: class Read Password: No Modify Password: No Table Description:		
Column definitions Name 1 projcls 2 catclass 3 classnum 4 classbrk 5 majclass 6 classlook	Type TEXT 2 INTEGER INTEGER INTEGER TEXT 50 TEXT 50	Index Expression
7 cistitle Current number of row	TEXT 54 #8: 58	(projels& classlook)
Table: clsbtitl Read Password: No Modify Password: No		
Table Description:Column definitions// Name112121212111 <th>Type INTEGER TEXT 50 ws: 10</th> <th>Index Expression</th>	Type INTEGER TEXT 50 ws: 10	Index Expression

Tal	sie: clabtitl		
Re	d Pasword: No		
Mo	dify Password: No		
Tal	ble Description:		
2	uma definitions		
	Name	Type	Index Expression
ī	classbrik	INTEGER	
2	cistiti	TEXT 50	
Cu	rrent number of rov	vs: 10	
Tal Res Mo	de: majcisbk d Password: No dify Password: No	<u></u>	
Tab	le Description: mai	or class breakout	t report driving table
Col	umn definitions	_	
	Name	Туре	Index Expression
1	classnum	INTEGER	
2	8I -0	CURRENCY	
3	82	CURRENCY	
4	8	CURRENCY	
2	*	CURRENCY	
6	బ	CURRENCY	
7	a 6	CURRENCY	
8	a 7	CURRENCY	
Cur	rent number of rov	vs: 32	
Tab Rea Mod Coin # 1	le: dum1 d Password: No dify Password: No umn definitions Name dum1	Type TEXT 4	Index Expression
Cur	rent number of roy	rs: 0	
Ų.			

Appendix D Tables in Database

1

Table: feat_tit **Read Password:** No Modify Password: No Table Description: fccd titles (download) **Column definitions** Name Туре Index Expression 1 TEXT 5 1 fccd TEXT 56 2 feat tit **TEXT 63** 3 fccdtit (fccd& feat_tit) Current number of rows: 130 Table: fccd s S **Read Password:** No Modify Password: No Table Description: fccd scenario dollars **Column definitions** # Name Туре **Index Expression** scenname TEXT 8 1 ÷ TEXT 1 2 appcode 3 fccd **TEXT 5** dollars CURRENCY 4 5 fccdprefix INTEGER ((aint(float(fccd)))) Current number of rows: 5850 Table: fccddiv_s_\$ Read Password: No Modify Password: No Table Description: fccd division name rollup Column definitions Index Expression . Name Туре TEXT 8 1 scenname 2 TEXT 1 appcode 3 divnam TEXT 3 . fccd TEXT 5 . 4 5 dollars CURRENCY

6	fccdprefix	INTEGER	((aint(float(fccd))))
Cu	rrent number of rov	rs: 25462	
Tab Res Mo	ole: alphac ud Password: No dify Password: No		
Tab	de Description:		
1 2 3 Cur	Name position scenario colord rrent number of row	Type TEXT 4 TEXT 8 TEXT 2 rs: 7	Index Expression
Tab Rea Moo Tab	le: divxpr2 d Password: No dify Password: No le Description:		
Colı	umn definitions Name	Туре	Index Expression
1 2 3 4 5 6 7 8	riab a4 a1 a2 a3 a6 a7 a5	TEXT 18 CURRENCY CURRENCY CURRENCY CURRENCY CURRENCY CURRENCY	
Cur	rent number of row	rs: 12	

T	able: tempfunc		
R	end Password: No		
M	odify Password: No		
T	ble Definition:		
Co	dumn definitions		
-	Name	Туре	Index Expression
1	district	TEXT 3	
2	appcode	TEXT 1	
3	wf_num	INTEGER	Autonumbering
4	CWIS	INTEGER	
2	projeis	TEXT 2	
0	divnam	TEXT 3	
	year	TEXT 2	
0 0	runcia	INTEGER	
y 10		INTEGER	
10	cormaria	INTEGER	
12	detmok	IEAL 4	
12	divreek	IN I DUEK	
14	ocerair	INTEGER	
15	fundley	TEXT 1	
16	calegory	TEXT 3	
17	food	TEXT 5	
18	totcost	CURRENCY	
19	contracts	CURRENCY	
20	dirlabor	CURRENCY	
21	other	CURRENCY	
22	contred	CURRENCY	
23	corpaed	CURRENCY	
24	contra	CURRENCY	
25	corpesa	CURRENCY	
26	totdreg	CURRENCY	
27	typdreg	TEXT 2	
28	inspected	TEXT 7	
29	oescrip	TEXT 56	
30	argumi	TEXT 64	
22	argum2	TEXT 64	
24 22		CURRENCY	
32		ICAL I	
35	hiddete	INTEGED	
36	advdate	INTEGED	
37	lowuse	TEXT 1	
38	newrank	INTEGER	
39	useri	INTEGER	
	TI R.M. TI C. # 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 12 23 24 25 26 7 28 9 33 33 34 35 36 7 38 9 10 11 12 13 14 15 16 17 18 19 20 12 23 24 25 26 7 28 9 30 13 23 33 34 35 36 7 38 9	Table: tempfunc Read Password: No Modify Password: No Table Definition: Column definitions Name 1 district 2 appcode 3 wf_num 4 cwis 5 projcis 6 divnam 7 year 8 funcid 9 rank 10 cofmarid 11 orgcode 12 dstrank 13 divrank 14 ocerank 15 fundlev 16 category 17 fccd 18 totcost 19 contracts 20 dirlabor 21 other 22 contrad 23 corpasa 24 contraa 25 corpasa 26 totdreg 27 typdreg 28 inspectcd 29 descrip	Table: tempfunc Read Password: No Table Definition: Column definitions # Name Type 1 district TEXT 3 2 appcode TEXT 1 3 wf_num INTEGER 4 Cwis INTEGER 5 projcls TEXT 2 6 divnam TEXT 3 7 year TEXT 2 6 divnam TEXT 4 10 orgoode TEXT 4 11 orgcode TEXT 4 12 distrank INTEGER 13 divrank INTEGER 14 ocerank INTEGER 15 fundlev TEXT 3 16 category TEXT 3 17 fccd TEXT 5 18 totcost CURRENCY 20 dirlabor CURRENCY 21 other CURRENCY 22 contrad CURRENCY 23 corpaed CURRENCY 24 contraa CURRENCY 25 corpasa CURRENCY 26 totdreg CURRENCY 27 typdreg TEXT 5 30 argum1 TEXT 64 31

41	user2 Jevel	INTEGER INTEGER	·····	
Cu	rrent number of r	ows: 20		
Fab Rea Mo	de: scentitle d Password: No dify Password: No)		
lat	e Description: de	scriptive titles for	scenarios, for reports	
Cole	umn definitions			
1	Name	Туре	Index Expression	
L	scenname	TEXT 8	_	
?	target_\$	CURRENCY		
5	title1	TEXT 10		
•	title2	TEXT 10		
)	uues	TEXT 10		
Jur	rent number of r	ows: 325		
/loc	lify Password: No le Definition:	,		
olu	umn definitions			
	Name	Туре	Index Expression	
	appcode	TEXT 1		
	detner	TEXT 3 TEVT 2		
	usuiam cwis	icai j Integed		
	W VT 642	DITECTO		
	catclass	THAT LEADERS		
	catelass projnam	TEXT 48		
	catclass projnam state	TEXT 48 TEXT 2		
	catclass projnam state totcost	TEXT 48 TEXT 2 CURRENCY		
	catclass projnam state totcost user1	TEXT 48 TEXT 2 CURRENCY INTEGER		
0	catclass projnam state totcost user1 descrip	TEXT 48 TEXT 2 CURRENCY INTEGER TEXT 56		
0 Juri	catclass projnam state totcost user1 descrip rent number of re	TEXT 48 TEXT 2 CURRENCY INTEGER TEXT 56		
0 Jurn	catclass projnam state totcost user1 descrip rent number of re	TEXT 48 TEXT 2 CURRENCY INTEGER TEXT 56		
0 Sur:	catclass projnam state totcost user1 descrip rent number of re	TEXT 48 TEXT 2 CURRENCY INTEGER TEXT 56		
0 'urı	catclass projnam state totcost user1 descrip rent number of re	TEXT 48 TEXT 2 CURRENCY INTEGER TEXT 56		
0 'urı	catclass projnam state totcost user1 descrip rent number of re	TEXT 48 TEXT 2 CURRENCY INTEGER TEXT 56		
0 'urı	catclass projnam state totcost user1 descrip rent number of re	TEXT 48 TEXT 2 CURRENCY INTEGER TEXT 56		
0 Suri	catclass projnam state totcost user1 descrip rent number of re	TEXT 48 TEXT 2 CURRENCY INTEGER TEXT 56		
0 Curi	catclass projnam state totcost user1 descrip rent number of re	TEXT 48 TEXT 2 CURRENCY INTEGER TEXT 56		

Appendix D Tables in Database

Table: environm Read Password: No Modify Password: No **Table Definition: Column definitions** Name Type TEXT 1 , Index Expression APPCODE 1 2 DISTRICT TEXT 3 DSTNAM 3 TEXT 3 CWIS INTEGER 4 5 CATCLASS INTEGER PROJNAM 6 **TEXT 48** 7 STATE **TEXT 2** 8 TOTCOST CURRENCY 9 USER1 INTEGER 10 DESCRIP TEXT 56 Current number of rows: 21 **Table: wetlands** Read Password: No Modify Password: No **Table Definition: Column definitions** Name Ŧ Туре **Index Expression** 1 DISTRICT TEXT 3 2 DSTNAM TEXT 3 3 CWIS INTEGER 4 YEAR TEXT 2 5 FUNCID INTEGER 6 WETCAT INTEGER 7 PROJNAM **TEXT 48** 8 USER1 INTEGER Current number of rows: 74

Appendix D Tables in Database

D22

Table: pelantab Rand Password: No Modify Password: No Table Definition: Column definitions / Name Type Index Expression 1 riab TEXT 18 2 al CURRENCY 3 a2 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 6 a5 CURRENCY Carrent number of rows: 38 Table: temp2353 Read Password: No Modify Password: No Modify Password: No Table Definitions / Name Type Index Expression 1 acconance TEXT 8 2 divnam TEXT 8 3 food TEXT 5 4 listons INTEGER 5 sundol CURRENCY Carrent number of rows: 2763			**************************************
Modify Password: No Table Definition: Column definitions / Name Type Index Expression 1 risb TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY 5 a4 CURRENCY Carrent samber of rows: 38 Table: temp2SSS Read Password: No Modify Password: No Table Definitions / Name Type Index Expression 1 scename TEXT 8 2 divam TEXT 8 2 divam TEXT 5 4 istool CURRENCY 5 sundol CURRENCY Current number of rows: 2763	Table: pcisxtab		
Table Definition: Index Expression 1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 4 a3 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 7 a4 CURRENCY 6 a5 CURRENCY 6 a5 CURRENCY 6 a5 CURRENCY 7 a4 CURRENCY 6 a5 CURRENCY 6 a5 CURRENCY Current number of rows: 38 Index Expression 1 scenname TEXT 8 2 divnam TEXT 5 3 food TEXT 5 4 listpos INTEGER 5 sumdol CURRENCY Carrent number of rows: 2763 Index Expression	Medify Password: No		
Table Definition: V Name Type Index Expression 1 riab TEXT 18 2 al CURRENCY 3 a2 CURRENCY 5 a4 CURRENCY 6 a5 CURRENCY 6 a5 CURRENCY Carrent number of rows: 38 Table temp2555 Read Pasword: No Modify Pasword: No Modify Pasword: No Modify Pasword: No Table Definition: V Name Type Index Expression 1 scename TEXT 8 2 divnam TEXT 8 2 divnam TEXT 5 3 food TEXT 5 4 listgos INTEGER 5 sumdol CURRENCY Carrent number of rows: 2763			
Column definitions Name Type Index Expression 1 riab TEXT 18 2 al CURRENCY 3 a2 CURRENCY 5 a4 CURRENCY 5 a5 CURRENCY 5 a5 CURRENCY Current number of rows: 38 Table: temp2555 Read Password: No Modify Password: No Modify Password: No Table Definition: Column definitions Name Type Index Expression 2 divam TEXT 8 2 divam TEXT 8 3 fcod TEXT 5 4 listos INTEGER 5 sumdol CURRENCY Current number of rows: 2763	Table Definition:		
Index Expression 1 risb TEXT 18 2 al CURRENCY 3 a2 CURRENCY 5 a4 CURRENCY 5 a5 CURRENCY Carrent number of rows: 38 Table: temp2535 Read Password: No Modify Password: No Table Definition: Column definitions Column definitions V Name Type Index Expression 2 divant TEXT 8 2 divant TEXT 5 4 listpos INTEGER 5 sumdol CURRENCY	Column definitions		
1 riab TEXT 18 2 a1 CURRENCY 3 a2 CURRENCY 5 a4 CURRENCY 5 a5 CURRENCY 5 a5 CURRENCY 5 a5 CURRENCY Current number of rows: 38 Table: temp2535 Read Password: No Modify Password: No Modify Password: No Index Expression Column definition: Index Expression Column definitions Index Expression 1 scename TEXT 5 1 istopo INTEGER 5 sumdol CURRENCY Current number of rows: 2763 2763	/ Name	Туре	Index Expression
a 1 CURRENCY a 2 CURRENCY a 3 CURRENCY 5 a 4 CURRENCY 5 a 5 CURRENCY 5 a 5 CURRENCY Current number of rows: 38 Table: temp2555 Read Pasword: No Modify Pasword: No Table Definitions Name Type Index Expression 1 scenname TEXT 8 2 divnam TEXT 8 2 divnam TEXT 3 3 fccd TEXT 5 4 listpos INTEGER 5 sundol CURRENCY Current number of rows: 2763	l riab	TEXT 18	
a 22 CURRENCY a 3 CURRENCY 5 a 4 CURRENCY 5 a 5 CURRENCY Current number of rows: 38 Table: temp2355 Read Password: No Modify Password: No Table Definitions 7 Name Type Index Expression 1 scenname TEXT 8 2 divnam TEXT 5 3 food TEXT 5 4 listpos INTEGER 5 sundol CURRENCY Current number of rows: 2763	2 al	CURRENCY	
a 3 CURRENCY 5 a 5 CURRENCY 5 a 5 CURRENCY 5 a 5 CURRENCY Carrent number of rows: 38 Table Definition: Table Definition: Column definitions 7 Name Type Index Expression 1 scename TEXT 8 2 divnam TEXT 8 2 divnam TEXT 3 3 fccd TEXT 5 4 listpos INTEGER 5 sundol CURRENCY Current number of rows: 2763	3 12	CURRENCY	
Concernent number of rows: 38 Current number of rows: 38 Table: temp2355 Read Presword: No Mane Type Index Expression Column definitions Name Type Index Expression 2 divanm TEXT 8 2 divanm TEXT 3 3 feed TEXT 5 4 listoe INTEGER 5 sumdol CURRENCY Current number of rows: 2763		CURRENCY	
Current number of rown: 38 Table: temp23535 Read Pansword: No Modify Pansword: No Table Definition: Name Type Index Expression scenname TEXT 8 divinam TEXT 3 food TEXT 5 listpos INTEGER 5 sundol CURRENCY Current number of rown: 2763	5 84 5 85	CURRENCY	
Current number of rows: 38 Table: temp2\$\$\$ Read Pansword: No Modify Pansword: No Table Definition: Vanue Type Index Expression 1 scenname TEXT 8 2 divnam TEXT 3 3 food TEXT 5 4 listpos INTEGER 5 sumdol CURRENCY Current number of rows: 2763		CORREIOT	
Table: temp2\$\$\$ Read Password: No Modify Password: No Table Definition: Column definitions Name Type Index Expression accentance TEXT 8 divaam TEXT 3 food TEXT 5 dispos INTEGER 5 sundol CURRENCY Current number of rows: 2763	Current number of rov	vs: 38	
Read Preswoord: No Modify Presword: No Table Definitions Name Type Index Expression Name TEXT 8 divnam TEXT 8 divnam TEXT 5 food TEXT 5 listpos INTEGER sumdol CURRENCY Carrent number of rows: 2763	Table: temp2\$\$\$		
Table Definitions Name Type Name TEXT 8 divnam TEXT 3 fccd TEXT 5 listpos INTEGER sumdol CURRENCY	Read Password: No Modify Password: No		
Table Definition: Column definitions Name Type Iscenname TEXT 8 divnam TEXT 3 fcod TEXT 5 listpos INTEGER sumdol CURRENCY Current number of rows: 2763			
Column definitions Name Type Index Expression scenname TEXT 8 divnam TEXT 3 food TEXT 5 istpos INTEGER sumdol CURRENCY Current number of rows: 2763	Table Definition:		
View Name Type Index Expression 1 scenname TEXT 8 2 divnam TEXT 3 3 fcod TEXT 5 4 listpos INTEGER 5 sumdol CURRENCY	Column definitions		
divnam TEXT 8 2 divnam TEXT 3 3 feed TEXT 5 4 listpos INTEGER 5 sumdol CURRENCY Current number of rows: 2763	Name	Туре	Index Expression
2 diviam TEXT 3 3 feed TEXT 5 4 listpos INTEGER 5 sumdol CURRENCY Current number of rows: 2763	scenname	TEXT 8	
istpos INTEGER sumdol CURRENCY Current number of rows: 2763	2 divnam	TEXT 3	
5 sumdol CURRENCY Current number of rows: 2763	5 ICCO	TEXT 3	
Current number of rows: 2763	sumdol	CURRENCY	
Current number of rows: 2763		001001	
	Current number of rov	vs: 2763	
			· ·
Т	bie: availnum		
--------------	---------------------	----------	------------------
Be	ad Pastword: No		
	dife Bernarde No.		
	ounty rassword: Ino		
_			
Ta	bie Definition:		
Co	lumn definitions		
	Name	Туре	Index Expression
1	avail	INTEGER	
-			
C	rrent number of roy	we• 1	
00		MØ1 1	
60 -1			
12	ose: temp3333		
KC	Ra Passwora: No		
Mo	dify Password: No		
Tal	ble Definition:		
Col	umn definitions		
#	Name	Туре	Index Expression
1	divnam	TEXT 3	
2	prefix	INTEGER	
3	s1\$	CIDDENCV	
Ă	25	CURDENCY	
\$	-35	CURRENCY	
5		CURRENCI	
7		CURRENCI	
	X)	CURRENCY	
8	\$05	CURRENCY	
9	\$7\$	CURRENCY	
_			
Cui	rent number of rov	rs: 234	
			•

11	be Definition:		
Col Y	umn definitions Name	Туре	Index Expression
l	scenname	TEXT 8	
2	listpos	INTEGER	
Cui	rent number of row	rs: 1	
l'ab Rec	ole: temp4\$\$\$		
10	dify Password: No		
fab	le Definition:		
Col i 1	umn definitions Name	Type	Index Expression
	divnam	TEXT 3	
•	fccd	TEXT 5	-
	81 5	CURRENCY	
	135	CURRENCY	
	245	CURRENCY	
5	s4\$ £5\$	CURRENCY CURRENCY	
	265 255 265	CURRENCY CURRENCY CURRENCY	
	54\$ 255 265 275	CURRENCY CURRENCY CURRENCY CURRENCY	
Jur	94\$ 25\$ 26\$ 27\$ rent number of row	CURRENCY CURRENCY CURRENCY CURRENCY S: 541	
Jur	s4\$ £5\$ £6\$ £7\$ rent number of row	CURRENCY CURRENCY CURRENCY CURRENCY St 541	
Jur	s4\$ s5\$ s6\$ s7\$ rent number of row	CURRENCY CURRENCY CURRENCY CURRENCY s: 541	
Jur	94\$ 25\$ 36\$ 37\$ rent number of row	CURRENCY CURRENCY CURRENCY CURRENCY S: 541	
Jur	s4\$ 25\$ 36\$ 37\$ rent number of row	CURRENCY CURRENCY CURRENCY CURRENCY St 541	
Jur	s4\$ s5\$ s6\$ s7\$ rent number of row	CURRENCY CURRENCY CURRENCY CURRENCY St 541	
Jur	s4\$ s5\$ s6\$ s7\$ rent number of row	CURRENCY CURRENCY CURRENCY CURRENCY S: 541	
Jur	s4\$ £5\$ \$6\$ \$7\$ rent number of row	CURRENCY CURRENCY CURRENCY CURRENCY 55: 541	
Jur	s4\$ £5\$ £6\$ £7\$ rent number of row	CURRENCY CURRENCY CURRENCY CURRENCY St 541	
Lur	s4\$ £5\$ £6\$ £7\$ rent number of row	CURRENCY CURRENCY CURRENCY CURRENCY St 541	
Jur	s4\$ s5\$ s6\$ s7\$ rent number of row	CURRENCY CURRENCY CURRENCY CURRENCY S: 541	
Cur	s4\$ £5\$ \$6\$ \$7\$ rent number of row	CURRENCY CURRENCY CURRENCY CURRENCY 55: 541	
Jur	sd\$ 25\$ 26\$ 37\$ rent number of row	CURRENCY CURRENCY CURRENCY CURRENCY St 541	
Cur	sd\$ s5\$ s6\$ s7\$ rent number of row	CURRENCY CURRENCY CURRENCY CURRENCY St 541	
Jur	s4\$ s5\$ s6\$ s7\$ rent number of row	CURRENCY CURRENCY CURRENCY CURRENCY St 541	
.	s4\$ £5\$ \$6\$ \$7\$ rent number of row	CURRENCY CURRENCY CURRENCY CURRENCY 55: 541	

Table: checki		
Paod Barmand: No		
Manuel Japawords Mo		
Modely Password: No		
Table Definition:		
Column definitions		
# Name	Type	Index Expression
1 wf num	INTEGER	•
· wi_mum		
Comment months of mo	20600	
Current multiper of 10	H3. 20077	
Tables feederab		
THOSE: ICCULUD		
Kend Philword: No		
Modify Password: No		
Table Definition:		
Column definitions		
# Name	Туре	Index Expression
1 rlab	TEXT 18	-
2 al	CURPENCY	
~ EL 2 • 7		
J 42	CURRENUI	
4 83	CURRENCY	
5 a4	CURRENCY	
Current number of rows	:: 56	
Table: fcprxtab Read Password: No		
Modify Password: No		
Table Definition:		
Oaluma 4-8-11		
Column definitions	_	* *
Name .	Туре	Index Expression
1 riab	TEXT 18	
2 al	CURRENCY	
3 a2	CURRENCY	
Current number of row	ws: 28	

Table: divxtab Read Password: No Modify Password: No

Table Definition:

Column definitions

1	Name	Турс	Index Expression
1	ziab	TEXT 18	
2	al	CURRENCY	
3	#2	CURRENCY	

. ...

.

Current number of rows: 12

Appendix E Menus/Forms

.

Appendix E Menus/Forms

	Figure C1 - Main Mean	
Database: desabs	Figure C2 - Manage Scenarios Menu Hanage Scenarios	
	 (2) Enter/Elit/Clone Composite Scenario (3) Enter/Elit/Clone SQL Scenario (4) Scenario Description Reports News (5) Delete Scenario (6) Check Scenario Dependencies (7) Change Scenario Name (8) Set/Elit Scenario Report Titles 	
Database: dssabs		

٠

Figure C3 - Manage P	rimary Scenarios Form	/1
Lit Go to Luit		
Name Approp Low Use Navigat level1 C	ion DIV	CLASS
1889868 to 1999999 OCE Ranks		
-8- to -8- Output Measure		
-8- to -8- User 1		
-8- to -8- User 2		
Min Cost Cumilative Cost -88-	R/9 -	
8 Description 1 Level 1 work functions in OBM, (Notes Level 1 work functions in OBM, General Level 1 work functions in OBM, General functions functio	General program	
Form: primeit1 Table: primscen	Field: scenlunp	Page: 1
Figure C4 - Manage P	rimery Scenarios Form	2
Edit Go to Exit		
Scenario CWIS	OCE Ranks	Feature Cost Codes
level1		
	1	
No editable data in this table Form: primet! Table: primeen	Field: scennage	Page: 1

Figure C5 - Composite Scenerio Form
Edit Co to Exit Composite Scenario Bata Entry/Edit Form
Scenario Name: LEVICEIL Number: 36 8 uf: 7994 tot \$: \$1,188,524.89
Description:
Notes: Level 1 work functions in the ceiling target
Code Scenario Name
i NELCELNG I lovel1
Form: coupeit1 Table: sceniesc
Figure C6 - SQL Scenario Form
Rdd/discard Go to Exit SQL Scenario Data Entry/Edit Form
Scenario Name: Scenario Number:
Description:
Notes:
Where Clause:
Test SQL?
Form: selscen3 Table: scendesc Field: scennane Page: 1







Figure C13 - Edit / Browse / Move Work Functions Mean	
Edit Work Function Bata (2) Edit Work Functions Based On Stored Scenario (3) Edit Work Functions Based On Temporary Scenario (4) Move Work Functions To Hold Table (By Appropriation) (5) Move Work Functions From Hold Table (By Appropriation) (6) Tally Work Functions (By Appropriation)	
latabase: dssabs	
Figure C14 - Set OCE Rank Range Form	
Start Range: 0	
End Range: 9999999	
Set UCE Mank Manges, FZ to exit, esc to quit	

Appendix E Menus/Forms

Figure C15 - Work Fu	action Entry Form
Edit Co to Exit OF1933 Bata Entru/Edit Form Dat Div Cls WF_Num CWIS Yr Ra: LMD NC 4 7440 94 2	nk DetRank DivRank OCEBank Lv 28212 20150 2002935 2
cofmarid: 29828 orgcode: NAU categor	ry: 285 FCCD: 87.12 Funcid: 20
\$: totcost: \$5.00 contracts: \$0.00 dirlabor: \$0.00	lownse: - inspectd: -0- typdreg: -0 constraint:
contred: \$8.00 corpsed: \$8.00 contraa: \$8.00	output measure: 0 user1: 18 user2: -8-
corpsza: \$0.00 totáreg: \$0.00	Bid: 0 Adv: 0
contcontr: \$8.88	NeuRank: 2980163 Level: -8-
Description: OTHER CONDITION & OPERATION	STUDIES
Argument1: TO PROVIDE WATER ANALYSIS -	ELUTRIATE TEST - FISH SAMPLING TEST
Argument2: TO COMPLY WITH STATE ENVIRO	MENTAL REGULATIONS PER SEC 484.
Form: fullomb Table: workfunc	Field: district Page: 1
Figure C16 - Appro	priations Menu
C GEN Operations and Myintenance E MRT Mississippi River and Trill F GRG Regulatory Programs	e, General Appropriation Butaries



	F	igure C1	9 - Browse Di	vision FCCD 7	ables	
Sort I scennage	dit Calcula target_\$	te Lay	out Query f title1	anage views title2	Print Exit title3	
ALLSRUF ASACUTI BANDELU BANDELU	\$23,	\$9.00 615.00 \$9.00 \$9.00	OPER. CUT	PROPOSED	ALLSRUP BY ASA (CM) BANKHAU BANKHA IU	
BASE94 baseline BASE0P BL/D9382	\$1, 589 ,	\$8.90 \$8.90 \$8.90 \$8.90 \$8.90	F Y 1994	Division	BASE94 Request BASE0P BL/D9302	
BL/109385 BL/109386 BL/109387 BL/109389		\$8.88 \$8.88 \$8.88 \$8.89 \$8.89			BL/109385 BL/109386 BL/109387 BL/109389	
BL/09311 BL/09311 BL/09313 B/RD9382		\$8.88 \$9.88 \$9.88 \$9.58			BL/09310 BL/09311 BL/09313 BMR09302	
BIRD9385 BIRD9386 BIRD9318 BIRD9311		58.89 58.89 58.80 58.80			BMRD9306 BMRD9306 BMRD9310 BMRD9311	
Database:	<u>dssabs Tab</u>	le: scei	ntitle Read	<u>P4 to Brows</u>	8	Edit
Sort E divnam	dit Calcula prefix	te Laux s1\$	ut Query M	anage views) s2\$	Print Exit s3\$	54
LMD LMD	6 29		\$100.00 \$1,688.00	\$0. \$8.	88	\$0.09 \$8.08
MRD MRD NAD	6 29		\$658.08 \$850.00	\$8.9 \$9.1	36 38	\$8.68 \$8.69
NAD NCD	29 6		\$3.00 \$465.00	58. \$8.	56 59 69	\$9.00 \$9.00
NCD NED	29 23		\$436.00 \$95.00	\$0.(\$8.)	80 80	\$8.08 \$8.08
NPD ORD	6 29 6		\$337.00 \$337.00 \$399.00	50. 50. 59.	58 38 39	50.00 50.00 50.00
ord Sad	29 6	ł	\$2,182.08 \$383.00	\$8.0 \$8.0	30 38	\$0.00 \$0.00
sad SPD SLD	29 29		\$2,197.00 \$580.00	50.1 50.1		\$0.00 \$9.09
SUD	29		\$6,683.08	\$8.0	38	\$8.88 \$8.88
Database:	desahs Tah	le: tem	3555 F4	to Browse		FAII
			<u> </u>			

Figure C21 - Rank Generator / Evaluator Menu	
Nank Generator / Evaluator III Assign/Liit Scenario Scores By Form (2) Assign/Liit Scenario Scores (Browse Formt) (3) List Scenario Scores (4) Generate Work Function Scores (5) Dualuate Work Function Scores (6) Re-Rank	
Database: dssabs	
Figure C22 - Scenario Score Entry / Edit Form Edit Go to Exit	
Scenario Score Entry/Edit Form	
ALLSRUF 6 All SRUF work functions in FY 1994 database ASACUTI 84 Operations Cut Proposed by ASA(CM) MASE94 186 Baseline amounts for selected features within each division baseline 28 baseline work functions recommended Division Program MASE0F 225 All operations feature costs in division baseline request BLM09382 185 Baseline for feature 82 in LMUD up to \$4,2480K BLM09385 187 Baseline for feature 85 in LMUD up to \$4,2480K BLM09386 188 Baseline for feature 86 in LMUD up to \$2,2680K BLM09386 188 Baseline for feature 87 in LMUD up to \$11,9148 BLM09386 188 Baseline for feature 87 in LMUD up to \$1,9148 BLM09389 118 Baseline for feature 87 in LMUD up to \$4,8490K BLM09389 118 Baseline for feature 18 in LMUD up to \$1,3260K BLM09311 112 Baseline for feature 11 in LMUD up to \$1,3260K BLM09382 115 Baseline for feature 82 in MRD up to \$48,8470K BLM09385 116 Baseline for feature 82 in MRD up to \$4,8470K BLM09385 116 Baseline for feature 85 in MRD up to \$4,8470K BLM09385 116 Baseline for feature 85 in MRD up to \$4,8470K BLM09386 117 Baseline for feature 85 in MRD up to \$4,920K BLM09386 117 Baseline for feature 85 in MRD up to \$4,920K BMR09386 117 Baseline for feature 86 in MRD up to \$4,920K BMR09386 117 Baseline for feature 86 in MRD up to \$4,920K BMR09386 117 Baseline for feature 86 in MRD up to \$4,920K BMR09318 118 Baseline for feature 18 in MRD up to \$4,920K BMR09318 118 Baseline for feature 18 in MRD up to \$4,920K BMR09318 118 Baseline for feature 18 in MRD up to \$4,920K BMR09318 119 Baseline for feature 19 in MRD up to \$4,920K BMR09318 119 Baseline for feature 11 in MRD up to \$4,920K BMR09318 119 Baseline for feature 11 in MRD up to \$2,917K	++++ ++++++++++++++++++++++++++++++++
Form: scenscor Table: scendesc Field: scenscor Page	: 1

•



Appendix F Sample Reports

The Utilities reports condensed	following series Menu, option # were routed to to represent a	ies of 1 7, Initia an ASCI 1 portion	reports 11 Report 11 disk 1 1 of the	were generated fro on Workfunc Table. file and, in some o original report.	m the These Cases,
QUERY by OCE	Funding level rank >= 0 and	1 , App < 9999	rop. Cod	•,	
PundLev 1	Count (FundLev) 8075	AppCoae	Sum (To 1,182,	177.00	
1	260	E	\$107,9	959.00	
OCE OCE	Funding level rank >= 0 and	1 , Appr < 9999	op. Code 999	, Division,	
FundLev	Count (FundLev)	AppCode	DivNam	Sum (TotCost)	
1 1 · 1	410 691 433	C C C	lmd MRD NAD	\$136,573.00 \$69,137.00 \$91.715.00	
1	626 438	C	NCD	\$133,964.00 \$20,366.00	
1 1 1	831 1429 3	с с с	NPD ORD POD	\$135,140.00 \$162,527.00	
1	996 208	C C C	SAD SPD	\$150.00 \$169,518.00 \$42.826.00	
1	1994 16 260	C	SWD 221	\$175,171.00 \$45,110.00	
1	200	E	NND	\$107,959.00	
	•				

Appendix F Sample Reports

oce Greet py	Funding level rank >= 0 and	1 , Appro OCE ran	op. Code, K < 9999	Project class, 999
FundLev	Count (FundLev)	AppCode	ProjCls	Sum (TotCost)
	1 103 1 46 4174 300 1 708 1395 1 1 1 1 1 1 1 1 1 1 1 1 1		FA FC FE FI FR FS FX MN MP NA MD ML NO MC MD ML NO MC MD ML NO MC MD ML NO MC MD ML NO MC MD MC MD MC MD MC MD MC MD MC MD MC MD MC MD MC MC MC MC MC MC MC MC MC MC MC MC MC	\$200.00 \$9,709.00 \$4,000.00 \$3,261.00 \$213,553.00 \$3,216.00 \$3,931.00 \$106,438.00 \$106,438.00 \$182,950.00 \$365,629.00 \$300.00 \$228,668.00 \$2,100.00 \$3,487.00 \$3,487.00 \$3,487.00 \$3,487.00 \$3,780.00 \$4,247.00 \$6,000.00 \$1,702.00 \$575.00 \$3,780.00 \$3,780.00 \$3,780.00 \$4,310.00 \$4,300.00 \$4,300.00 \$4,300.00 \$4,300.00 \$4,300.00 \$4,300.00 \$4,300.00 \$4,300.00 \$4,300.00 \$4,300.00 \$4,300.00 \$4,300.00 \$4,300.00 \$4,300.00 \$4,300.00 \$4,300.00 \$4,300.00 \$4,300.00 \$4,300.00 \$4,00

Appendix F Sample Report

٢

Count (FundLev)	AppCode	DivNam	ProjCls	Sum (TotCost)
12	C	LID	FI	\$560.00
90	C		FR MR	\$9,010.00
•3 123	c		NC .	\$11,/35.00 \$95.117.00
99	č	LND	NL	\$18,275.00
1	C	LID	PA	\$1,698.00
2	ç		PS	\$178.00
3	C		PC PT	\$65.00 \$294.00
431	č	HRD	TR	\$21.131.00
6	C	IRD	75	\$698.00
216	ç	HRD	NP	\$41,277.00
32 6	C	MAD		\$5,672.00
2	č	NAD	11	\$64.00
254	C	NAD	77.	\$15,472.00
4	C	NAD	78	\$128.00
151	C	MAD	NC PD	\$66,030.00
6	č	NAD	PD	\$5,666.00
8	č	NAD	P8	\$3,011.00
4	C	NCD	PC	\$61.00
4	C	NCD	PI	\$258.00
223 A1	C C	NCD	rx Mi	\$11,176.00
191	č	NCD	XC	\$41.560.00
1	C	NCD	ND	\$300.00
148	C	NCD	NL	\$62,665.00
	C	NCD	PN DC	\$3,576.00
11	c	NED	IC .	\$337.00
1	č	NED	FI	\$150.00
414	C	NED	FR	\$10,283.00
9	C	JED MED	NC .	\$6,131.00
2	Ċ	NRD	PR PS	\$16.00
18	c	NPD	PC	\$1,514.00
5 (C	NPD	FI	\$303.00
217	C	NPD	TR	\$8,385.00
253 (ארע הסע	13 MM	\$790.00
257	Č	NPD	10P	\$38,367.00
35 (C .	NPD	NC	\$28,013.00
31 (C I	NPD	ML.	\$5,567.00
2 (NPD NPD	PR Dg	\$188.00
12		ORD	PC	\$836.00 \$2.084.00
4	C I	ORD	PI	\$219.00
993 (C (ORD	FR	\$47,425.00
196 /				
	90 83 123 99 1 2 3 3 431 6 216 32 6 216 32 6 2254 4 151 2 6 8 4 151 191 1 148 8 6 11 191 1 148 8 6 11 191 1 148 8 6 11 191 1 1 148 8 6 215 6 253 6 12 1 6 253 6 253 6 215 7 255 6 255 7 255 7 255 7 255 7 255 7 255 7 255 7 255 7 255 7 255 7 255 7 255 7 255 7 255 7 255 7 255 7 255 7 25 255 7 255 7 255 7 255 7 255 7 255 7 255 7 255 7 255 7 255 7 255 7 255 7 25 255 7 25 255 25	30 C 83 C 83 C 83 C 99 C 1 C 2 C 3 C 431 C 6 C 216 C 32 C 6 C 254 C 40 C 254 C 40 C 254 C 4 C 254 C 40 C 254 C 40 C 223 C 41 C 10 1 11 C 12 C 13 C 253 C 257 C 31 C 257 C 31 C 25 C 31 C 25 C 32	90 CIAD83 CIAD123 CIAD99 CIAD1 CIAD2 CIAD3 CNRD3 CNRD431 CNRD6 CNRD216 CNRD22 CNAD216 CNRD32 CNRD431 CNRD216 CNRD32 CNRD6 CNAD2 CNAD6 CNAD2 CNAD4 CNAD6 CNAD3 CNCD151 CNAD6 CNCD151 CNAD6 CNCD151 CNAD6 CNCD151 CNCD16 CNCD17 CNCD18 CNCD18 CNPD217 CNPD253 CNPD253 CNPD253 CNPD257 C	30 C LMD YR 83 C LMD MP 123 C LMD MC 99 C LMD NL 1 C LMD PA 2 C LMD PA 2 C LMD PA 2 C LMD PA 2 C LMD PS 3 C MRD FT 431 C MRD FS 216 C MRD MP 32 C MRD MP 32 C MRD MC 2 C MAD PC 2 C MAD PS 151 C MAD MC 2 C MAD PS 4 C MCD PR 4 C MCD PR 4 C MCD PR 4 C MCD MN 191 C </td

.....

.

76 376 294 187 398 315 34 24 91 276 14 29 73 11 354 1		01.1 01.2 01.3 02.1 02.2 02.3 03.1 03.2 04 05.1 05.2 05.3 05.4 05.5	\$110,854.00 \$42,574.00 \$20,522.00 \$7,553.00 \$40,176.00 \$19,018.00 \$1,631.00 \$52,071.00 \$17,720.00 \$7,083.00 \$5,438.00 \$1,871.00
376 294 187 398 315 34 24 91 276 14 29 73 11 354 1		01.2 01.3 02.1 02.2 02.3 03.1 03.2 04 05.1 05.2 05.3 05.4 05.5	\$42,574.00 \$20,522.00 \$7,553.00 \$40,176.00 \$19,018.00 \$2,434.00 \$1,631.00 \$52,071.00 \$17,720.00 \$7,083.00 \$5,438.00 \$1,871.00
187 187 398 315 34 24 91 276 14 29 73 11 354 1		01.3 02.1 02.2 03.1 03.2 04 05.1 05.2 05.3 05.4 05.5	\$20,522.00 \$7,553.00 \$40,176.00 \$19,018.00 \$2,434.00 \$1,631.00 \$52,071.00 \$17,720.00 \$7,083.00 \$5,438.00 \$1,871.00
398 315 34 24 91 276 14 29 73 11 354 1		02.2 02.3 03.1 03.2 04 05.1 05.2 05.3 05.4 05.5	\$40,176.00 \$19,018.00 \$2,434.00 \$1,631.00 \$52,071.00 \$17,720.00 \$7,083.00 \$5,438.00 \$1,871.00
315 34 24 91 276 14 29 73 11 354 1 1		02.3 03.1 03.2 04 05.1 05.2 05.3 05.4 05.5	\$19,018.00 \$2,434.00 \$1,631.00 \$52,071.00 \$17,720.00 \$7,083.00 \$5,438.00 \$1,871.00
34 24 91 276 14 29 73 11 354 1		03.1 03.2 04 05.1 05.2 05.3 05.4 05.5	\$2,434.00 \$1,631.00 \$52,071.00 \$17,720.00 \$7,083.00 \$5,438.00 \$1,871.00
24 91 276 14 29 73 11 354 1		03.2 04 05.1 05.2 05.3 05.4 05.5	\$1,631.00 \$52,071.00 \$17,720.00 \$7,083.00 \$5,438.00 \$1,871.00
276 14 29 73 11 354 1		05.1 05.2 05.3 05.4 05.5	\$17,720.00 \$17,083.00 \$5,438.00 \$1,871.00
14 29 73 11 354 1		05.2 05.3 05.4 05.5	\$7,083.00 \$5,438.00 \$1,871.00
29 73 11 354 1 1	0000	05.3 05.4 05.5	\$5,438.00 \$1,871.00
73 11 354 1 1		05.5	¥1,871.00
354 1 1	č		\$1 E40 AA
1	~	06.1	\$97.669.00
1	L	06.2	\$36.00
1	C	06.3	\$96.00
24	C	06.4	\$31.00
131	č	07.12	\$37,251.00
2	Č	07.13	\$89.00
107	C	07.21	\$2,307.00
430	C	07.22	\$11,644.00
135	C	07.24	\$3,427.00 \$1,768.00
16	č	07.41	\$3,156.00
15	C	07.42	\$213.00
39	C	07.53	\$4,534.00
10	C	07.34	\$2,374.00
650	č	09.1	\$39,162.00
443	C	09.2	\$30,516.00
287	C	09.3	\$8,450.00
44	C	10.11 10.22	\$2,588.00
481	č	11	\$12,065.00
139	С	13	\$1,201.00
2	C	14	\$575.00
96	c	20	\$6,384.00
3	č	20.6	\$477.00
37	С	20.7	\$673.00
5	C	20.8	\$313.00
400 29	C C	21.11	\$16,387.00
4	č	21.16	\$203.00
81	С	21.2	\$3,978.00
84	C	22.1	\$45,422.00
8	C	22.5	\$832.00
	107 430 214 135 16 15 39 10 2 650 443 287 44 3 481 139 2 191 96 3 37 5 200 29 4 81 84 8	107 C 430 C 214 C 135 C 16 C 15 C 39 C 10 C 2 C 650 C 443 C 287 C 44 C 3 C 481 C 139 C 2 C 191 C 96 C 3 C 191 C 96 C 3 C 200 C 29 C 4 C 81 C 81 C 84 C	107 C 07.21 430 C 07.22 214 C 07.23 135 C 07.24 16 C 07.41 15 C 07.42 39 C 07.53 10 C 07.54 2 C 07.7 650 C 09.1 443 C 09.2 287 C 09.3 44 C 10.11 3 C 10.22 481 C11139 C132 C14191 C1696 C203 C20.637 C20.75 C20.8200 C21.1129 C21.154 C21.1681 C21.284 C22.185 C22.5

Appendix F Sample Report

.

ł

12 16 7 4 20 19 1 2 4 11 10 13 37 7 4 20 8 4 11 10 13 37 7 2 4 20			01.1 01.2 01.3 02.1 02.2 02.3 03.1 03.2 04 05.1 05.4 06.1 07.11 07.12 07.21 07.22 07.23	\$14,353.00 \$3,434.00 \$410.00 \$136.00 \$2,402.00 \$1,758.00 \$360.00 \$1,769.00 \$1,570.00 \$335.00 \$9,316.00 \$6,842.00 \$407.00 \$116.00 \$1,189.00
16 7 4 20 19 1 2 4 11 10 13 37 7 4 20 8 4 1 2 24			01.2 01.3 02.1 02.2 03.1 03.2 04 05.1 05.4 05.1 07.11 07.11 07.21 07.21 07.23	\$3,434.00 \$410.00 \$136.00 \$2,402.00 \$1,758.00 \$360.00 \$1,769.00 \$1,769.00 \$1,570.00 \$335.00 \$9,316.00 \$6,842.00 \$407.00 \$116.00 \$1,189.00
4 20 19 1 2 4 11 10 13 37 7 4 20 8 4 1 2 24			02.1 02.2 02.3 03.1 03.2 04 05.1 05.4 05.1 07.11 07.12 07.21 07.22 07.23	\$10.00 \$136.00 \$2,402.00 \$1,758.00 \$29.00 \$360.00 \$1,769.00 \$1,769.00 \$335.00 \$9,316.00 \$6,842.00 \$407.00 \$116.00 \$1,189.00 \$153.00
20 19 1 2 4 11 10 13 37 7 4 20 8 4 1 2 24			02.2 02.3 03.1 03.2 04 05.1 05.4 05.4 07.11 07.12 07.21 07.22 07.23	\$2,402.00 \$1,758.00 \$29.00 \$360.00 \$1,769.00 \$1,570.00 \$335.00 \$9,316.00 \$6,842.00 \$407.00 \$116.00 \$1,189.00 \$153.00
19 1 2 4 11 10 13 37 7 4 20 8 4 1 2 24			02.3 03.1 03.2 04 05.1 05.4 06.1 07.11 07.12 07.21 07.22 07.23	\$1,758.00 \$29.00 \$360.00 \$1,769.00 \$1,570.00 \$335.00 \$9,316.00 \$6,842.00 \$407.00 \$116.00 \$1,189.00 \$153.00
1 2 4 11 10 13 37 7 4 20 8 4 1 2 24			03.1 03.2 04 05.1 05.4 06.1 07.11 07.12 07.21 07.22 07.23	\$29.00 \$360.00 \$1,769.00 \$1,570.00 \$335.00 \$9,316.00 \$6,842.00 \$407.00 \$116.00 \$1,189.00 \$153.00
4 11 10 13 37 7 4 20 8 4 1 2 24			04 05.1 05.4 06.1 07.11 07.12 07.21 07.22 07.23	\$1,769.00 \$1,769.00 \$335.00 \$9,316.00 \$6,842.00 \$407.00 \$116.00 \$1,189.00 \$153.00
11 10 13 37 7 4 20 8 4 1 2 24			05.1 05.4 06.1 07.11 07.12 07.21 07.22 07.23	\$1,570.00 \$335.00 \$9,316.00 \$6,842.00 \$407.00 \$116.00 \$1,189.00 \$153.00
10 13 37 7 4 20 8 4 1 2 24			05.4 06.1 07.11 07.12 07.21 07.22 07.23	\$335.00 \$9,316.00 \$6,842.00 \$407.00 \$116.00 \$1,189.00 \$153.00
13 37 7 4 20 8 4 1 2 24			06.1 07.11 07.12 07.21 07.22 07.23	\$9,316.00 \$6,842.00 \$407.00 \$116.00 \$1,189.00 \$153.00
37 7 4 20 8 4 1 2 24			07.12 07.21 07.22 07.23	\$6,842.00 \$407.00 \$116.00 \$1,189.00 \$153.00
4 20 8 4 1 2 24			07.21 07.22 07.23	\$116.00 \$1,189.00 \$153.00
20 8 4 1 2 24	00000		07.22	\$1,189.00
8 4 1 2 24	с с с	LID	07.23	\$153.00
1 2 24	C		A7 64	
2 24	č	LMD	07.42	\$78.00 \$7.00
24	-	LND	07.53	\$60.00
	C	LMD	09.1	\$2,691.00
12	C	LND	09.2	\$1,001.00
13	C		09.3	\$793.00
14	c	LND	11	\$560.00 \$864.00
2	č	LHD	13	\$10.00
9	C	LND	16	\$458.00
9	C		20	\$111.00
•	C C		20.7	\$68.00
1	č	LND	21.16	\$25.00
5	Ċ	LID	22.1	\$4,215.00
8	C	LND	23.1	\$1,196.00
1	C	LHD	23.2	\$20.00
3	c	LMD	25.1	\$84.00 \$115.00
2	č	LND	27.1	\$109.00
6	C	LND	29.1	\$405.00
1	C		29.11	\$100.00
3	C		29.3	\$470.00 \$170.00
5	č	LND	29.4	\$66.00
1	C	LMD	30.1	\$19.00
6	C		30.2	\$241.00
1			31	\$60.00
34	č	LND	33.11	\$154.00
1	C	LMD	33.21	\$1,698.00
11	C	LMD	33.22	\$4,481.00
1	C	LND	33.3	\$250.00
	24 12 13 14 2 9 9 4 3 1 5 8 1 3 4 2 6 1 5 3 5 1 6 1 7 34 1 1	2 C 24 C 12 C 13 C 12 C 14 C 2 C 9	2 CLMD24 CLMD12 CLMD13 CLMD14 CLMD2 CLMD9 CLMD9 CLMD3 CLMD1 CLMD3 CLMD1 CLMD3 CLMD3 CLMD1 CLMD3 CLMD1 CLMD	2 C LMD 07.53 24 C LMD 09.1 12 C LMD 09.3 12 C LMD 10.11 14 C LMD 11 2 C LMD 13 9 C LMD 16 9 C LMD 20 4 C LMD 20 4 C LMD 20.7 3 C LMD 20.11 1 C LMD 21.11 1 C LMD 21.16 5 C LMD 23.1 1 C LMD 29.1 1 C LMD 29.1 1 C LMD 29.1 1 C LMD 29.2 3 C LMD 29.3 5 C LMD 29.4 1 C LMD 30.1 6 C LMD 30.2 1 C

Appendix F Sample Reports

Total wor	rk function count by a	pprop code
C	19886	
-		
QUERY by OCE	Approp. Code, rank >= 0 and < 99	99999
AppCode	Count (AppCode) Sum (TotCost)
C E	19886 3,11 813 \$22	8,935.00 1,299.00
QUERY by OCE	Approp. Code, Divisio rank >= 0 and < 99	D, 99999
AppCode	Count(AppCode) DivNa	n Sum (TotCost)
000000000m	1074 LHD 1830 MRD 778 NAD 1632 NCD 1095 NED 2090 NPD 3576 ORD 11 POD 2399 SAD 394 SPD 4989 SWD 18 Z21 813 MND	\$266,814.00 \$142,951.00 \$157,436.00 \$856,859.00 \$322,940.00 \$345,890.00 \$1,458.00 \$408,696.00 \$408,696.00 \$435,767.00 \$435,347.00 \$45,885.00 \$221,299.00
QUERY by OCE rank	Approp. Code, Funding >= 0 and < 9999999	level 1
AppCode	Count (AppCode) FundL	ev Sum (TotCost)
CB	8075 1 260 1	1,182,177.00 \$107,959.00

QUERY by	Approp. Code, D rank >= 0 and	ivision, < 999	, Funding	level 1
AppCode	Count (AppCode)	DivNam	FundLev	Sum (TotCost)
С	410	LMD	1	\$136,573.00
C	691	MRD	1	\$69,137.00
č	433 626	NCD	1	\$91,715.00
C	438	NED	1	\$20,366.00
C	831	NPD	1	\$135,140.00
c	1429	POD	1	\$162,527.00 \$130.00
C	996	SAD	ī	\$169,518.00
c	208	SPD	1	\$42,826.00
č	16	ZZ1	1	\$45,110.00
B	260	NOD	1	\$107,959.00
QUERY by OCE	Approp. Code, F rank >= 0 and	roject c < 9991	lass, 9999	
AppCode	Count (AppCode)	ProjCla	Sum (To	tCost)
C	1	PA	\$	200.00
C	163	FC	\$19,0	658.00
č	127	FI	\$8,0	530.00
c	9345	FR	\$489,	916.00
C	38	7S 74	\$3,! ¢/	515.00
č	1	FX	\$3,9	931.00
C	4	MF	\$16,9	00.00
C	1898	MN	\$429,1 \$445.1	753.00
č	4095	NA	9775) \$	559.00
C	1	NB	\$(500.00
C	1961	NC	\$808,4	196.00
č	15	NG	\$29,8	344.00
C	2122	nl.	\$781,	522.00
C	12	NM	\$1,3 \$2,5	
č	î	NR	\$3,4	87.00
C	1	NT	\$3	35.00
C C	1	NU	\$5,0	
č	1	NW	\$4,2	47.00
C	1	NX	\$6,0	00.00
C C	8	PA PC	\$5,1	92.00
c	16	PD	\$1.6	i21.00
C	11	PN	\$3,7	80.00
С	1	PP	\$8,0	00.00
	•			

•

Appendix F Sample Reports

.

2 22 258 298 266 224 2 2 2 2 2 4	LND LND LND LND LND LND LND LND LND NRD	FC FI FR MP NC NL PA PS	\$425.00 \$1,558.00 \$23,562.00 \$44,714.00 \$144,597.00 \$49,982.00 \$1,788.00 \$178.00
22 258 298 266 224 2 2 2 4 19		PI PR MP NC NL PA PS	\$1,558.00 \$23,562.00 \$44,714.00 \$144,597.00 \$49,982.00 \$1,798.00 \$128.00
258 298 266 224 2 2 2 4 19	LND LND LND LND LND LND LND NRD	FR MP NC NL PA PS	\$23,562.00 \$44,714.00 \$144,597.00 \$49,982.00 \$1,798.00
298 266 224 2 2 4 19	LND LND LND LND LND LND NRD	MP NC NL PA PS	\$44,714.00 \$144,597.00 \$49,982.00 \$1,798.00 \$1,798.00
266 224 2 2 4 19	LND LND LND LND NRD	NC NL PA PS	\$144,597.00 \$49,982.00 \$1,798.00 \$178.00
224 2 2 4 19	LMD LMD MRD	NL Pλ Ps	\$49,982.00 \$1,798.00 \$178.00
2 2 4 19	LMD MRD	PS	\$1,/ 98.00 \$178.00
4	MRD	F0	
19		FC	\$265.00
	MRD	PI	\$836.00
976	MRD	FR	\$42,799.00
6	HRD	P S	\$698.00
753	MRD	MP	\$89,437.00
72	NRD	NC	\$8,916.00
0 12	NAD	FC PT	\$819.00 \$597.00
433	NAD	FI	\$28/.00 \$23 639 00
5	NAD	FS	\$132.00
1	NAD	NA	\$45.00
295	NAD	NC	\$120,984.00
5	NAD	PD	\$1,621.00
10	NAD	PR	\$6,598.00
8	NAD	PS	\$3,011.00
0 14	NCD	FC	\$1,111.00
453	NCD	PD F1	\$1,002.00 \$25 720 00
71	NCD	MN	\$194.331.00
456	NCD	NC	\$151.093.00
3	NCD	ND	\$6,050.00
15	NCD	NG	\$29,844.00
587	NCD	NL	\$442,170.00
12	NCD	NM	\$1,168.00
8	NCD	PN	\$3,576.00
19	NED	F0	\$785.UU \$1 343 00
2	NED	FI	\$200.00
1048	NED	FR	\$29.834.00
20	NED	NC	\$13,322.00
1	NED	Pn	\$16.00
5	NED	PS	\$4,177.00
29	NPD	FC	\$2,131.00
11 195	NDD	ED ED	\$573.00
10	NPD	PS	\$10,332.00 \$961 nn
	NPD	MF	\$6.900.00
708	NPD	MN	\$135,220.00
700	NPD	MP	\$80,461.00
1	NPD	NA	\$382.00
169	NPD	NC	\$66.546.00
132	NDO		400,540100
	72 8 12 433 5 1 295 6 10 8 6 14 453 71 456 3 15 587 12 8 7 19 2 1048 20 1 1 5 29 11 391 10 3 3708 700 1	72 MRD 8 NAD 12 NAD 433 NAD 5 NAD 1 NAD 295 NAD 6 NAD 10 NAD 8 NAD 6 NCD 14 NCD 453 NCD 14 NCD 453 NCD 71 NCD 456 NCD 3 NCD 15 NCD 15 NCD 12 NCD 12 NCD 8 NCD 12 NCD 12 NCD 13 NCD 12 NCD 14 NCD 587 NCD 12 NCD 12 NCD 13 NCD 14 NCD 587 NCD 12 NCD 14 NCD 587 NCD 12 NCD 13 NCD 10 NED 20 NED 10 NED 10 NED 30 NED 10 NED 30 NED 10 NED 30 NED 10 NED 30 NED 10 NED 30 NED 10 NED 30 NED 11 NED 5 NED 20 NED 10 NPD 10	72 MRD NC 8 NAD FC 12 NAD FI 433 NAD FR 5 NAD FS 1 NAD NA 295 NAD NC 5 NAD PS 1 NAD NA 295 NAD PC 3 NAD PR 8 NAD PS 6 NCD FC 14 NCD FI 453 NCD FR 71 NCD MN 456 NCD NC 3 NCD ND 15 NCD NG 587 NCD NL 12 NCD NM 8 NCD PN 7 NCD PS 19 NED PC 2 NED PT 10 NED PS 29 NPD FC 11 NPD </td

Appendix F Sample Report

Γ

OCE OCE	Approp. Code, F rank >= 0 and	CCD, < 999	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
AppCode	Count (AppCode)	FCCD	Sum (TotCost)
	Count (AppCode) 105 382 314 272 646 535 345 127 757 15 65 345 17 814 109 41 300 387 269 222 152 615 243 155 67 112 19 447 14 22 190 641 300 387 269 222 152 615 243 155 67 112 19 447 14 212 19 67 10 5 67 112 19 67 112 19 67 112 19 67 112 19 67 112 19 67 10 76 266 93 52 10 7 7 7 7 7 7 7 7 7 7 7 7 7	PCCD 01.1 01.2 01.3 02.1 02.2 02.3 03.1 03.2 04 05.1 05.2 05.4 05.5 06.1 06.3 06.4 07.11 07.22 07.23 07.24 07.42 07.52 07.53 07.54 07.52 07.53 07.54 07.52 07.53 07.54 07.52 07.53 07.54 07.52 07.53 07.54 07.52 07.53 07.54 07.52 07.53 07.54 07.52 07.53 07.54 07.52 07.53 07.54 07.52 07.53 07.54 07.52 07.53 07.54 07.52 07.53 07.54 07.52 07.53 07.54 07.52 07.53 07.54 07.52 07.53 07.54 07.52 07.53 07.54 07.52 07.53 07.54 07.52 07.53 07.53 07.54 07.52 07.52 07.53 07.54 07.52 07.54 07.52 07.53 07.54 07.52 07.54 07.52 07.52 07.54 07.52 07.52 07.54 07.52 07.52 07.54 07.52 07.52 07.54 07.52 07.52 07.54 07.52 07.52 07.54 07.52 07.52 07.54 07.52 07.52 07.54 07.52 07.52 07.54 07.52 07.52 07.54 07.52 07.52 07.54 07.52 07.52 07.54 07.52 07.52 07.54 07.52 07.52 07.52 07.54 07.52 07.52 07.54 07.52 07.52 07.52 07.54 07.52 07.52 07.52 07.52 07.54 07.52 07.52 07.52 07.52 07.54 07.52 07.52 07.52 07.52 07.54 07.52 07.52 07.52 07.52 07.54 07.52 07.52 07.54 07.52 07.52 07.54 07.52 07.52 07.54 07.52 07.52 07.54 07.52 07.52 07.54 07.52 07.52 07.54 07.52 07.52 07.54 07.52 07.52 07.54 07.52 07.54 07.52 07.54 07.52 07.54 07.52 07.52 07.54 07.52 07.54 07.52 07.54 07.52 07.54 07.52 07.54 07.52 07.54 07.52 07.54 07.54 07.55	Sum (TotCost) \$118,936.00 \$42,757.00 \$21,621.00 \$8,706.00 \$26,328.00 \$2,453.00 \$1,631.00 \$52,677.00 \$34,707.00 \$7,115.00 \$12,318.00 \$11,961.00 \$2,013.00 \$126,732.00 \$7,779.00 \$45,169.00 \$21,670.00 \$1,616.00 \$4,525.00 \$2,151.00 \$2,151.00 \$2,151.00 \$2,151.00 \$2,151.00 \$2,503.00 \$1,431.00 \$626.00 \$23,133.00 \$1,871.00 \$42,627.00 \$38,409.00 \$11,549.00 \$1,871.00 \$42,627.00 \$38,409.00 \$11,549.00 \$1,67.00 \$1,621.00 \$21,799.00 \$1,621.00 \$2,76,139.00 \$1,400 \$3,134.00 \$3,134.00 \$688.00

Count (AppCode)	DivNam	FCCD	Sum (TotCost)
17	LHD	01.1	\$14,523.00
16	LMD	01.2	\$3,434.00
10		02.1	\$410.00
35	LMD	02.2	\$2,919.00
32	LIND	02.3	\$2,093.00
1	LHD	03.1	\$29.00
2	LMD	03.2	\$360.00
4	LHD	04	\$1,769.00
37		05.1	\$3,209.00 \$1,355.00
JU 1		05.5	\$1,555.00
41	LID	06.1	\$14,017.00
18	LMD	06.2	\$732.00
1	LMD	06.3	\$100.00
27		05.4	\$748.00
40		07.11	\$0,903.00 \$773.00
19		07.21	\$201.00
24	LND	07.22	\$1.311.00
9	LMD	07.23	\$219.00
7	LMD	07.24	\$124.00
3	LMD	07.42	\$27.00
1		07.52	\$43.00
10	LAD	07.6	\$32.00
2	LOD	07.7	\$430.00
32	LMD	09.1	\$2,959.00
19	LMD	09.2	\$1,324.00
25		09.3	\$1,125.00
22		10.11	\$1,558.00
	LMD	11	\$1.866.00
11	LND	13	\$75.00
16	LMD	16	\$578.00
24	LMD	20	\$1,225.00
15	LMD	20.6	\$106.00
7		20.7	\$142.00
26	LMD	20.0	\$1,747.00
1	LMD	21.13	\$3.00
ī	LMD	21.15	\$25.00
4	LMD	21.16	\$510.00
5	LMD	21.2	\$358.00
32	LND	22.1	\$22,080.00
4 1	LAD	22.3	\$145.00
10	LMD	23.2	\$1,756.00
1	LMD	23.6	\$20.00
17	LMD	24.1	\$1,518.00
	7 10 35 32 4 4 37 30 1 41 18 17 7 40 19 7 7 24 9 7 7 24 9 7 7 24 9 7 7 24 10 1 2 5 22 23 2 19 25 25 22 25 7 7 44 11 16 24 11 10 19 7 7 24 10 10 11 2 7 7 24 10 10 11 2 7 7 24 10 10 11 2 7 7 24 10 10 11 2 7 7 7 24 10 10 10 11 2 7 7 7 24 10 10 11 2 7 7 7 7 24 10 10 11 2 2 5 2 2 2 2 7 7 7 7 2 4 10 10 11 2 5 5 7 7 7 2 4 11 10 2 5 5 2 2 2 2 7 7 7 2 4 10 10 10 2 5 5 2 2 2 2 7 7 7 7 2 4 10 10 10 10 10 10 10 10 10 10 10 10 10	7 LMD 10 LMD 35 LMD 32 LMD 1 LMD 2 LMD 4 LMD 37 LMD 30 LMD 1 LMD 30 LMD 1 LMD 30 LMD 1 LMD 30 LMD 1 LMD 41 LMD 41 LMD 40 LMD 7 LMD 40 LMD 7 LMD 24 LMD 3 LMD 3 LMD 3 LMD 3 LMD 3 LMD 3 LMD 3 LMD 32 LMD 32 LMD 32 LMD 32 LMD 32 LMD 32 LMD 32 LMD 34 LMD 35 LMD 32 LMD 32 LMD 32 LMD 32 LMD 33 LMD 34 LMD 32 LMD 32 LMD 32 LMD 32 LMD 32 LMD 33 LMD 34 LMD 35 LMD 32 LMD 34 LMD 35 LMD 32 LMD 34 LMD 35 LMD 32 LMD 32 LMD 33 LMD 34 LMD 35 LMD 36 LMD 37 LMD 37 LMD 38 LMD 39 LMD 30 LMD 30 LMD 30 LMD 30 LMD 31 LMD 32 LMD 33 LMD 34 LMD 34 LMD 34 LMD 35 LMD 34 LMD	7 LMD 01.3 10 LMD 02.1 35 LMD 02.3 1 LMD 03.1 2 LMD 03.2 4 LMD 04 37 LMD 05.1 30 LMD 05.4 1 LMD 06.1 38 LMD 06.6 1 LMD 06.3 27 LMD 07.11 19 LMD 07.12 7 LMD 07.21 24 LMD 07.22 9 LMD 07.23 7 LMD 07.24 3 LMD 07.52 10 LMD 07.6 2 LMD 07.7 32 LMD 09.1 19 LMD 09.2 25 LMD 09.1 19 LMD 09.2 25 LMD 09.1 11 LMD 13 16 LMD 10

ļ

F11

The following pages represent option #8 from the Utilities Menu, Logic Check on Workfunc Table. These reports were routed to an ASCII disk file and, in some cases, condensed to represent a portion of the original report. Note that the logical checks are looking for inconsistencies in the initial mainframe-imported data set. For many of the checks, these inconsistencies are not found. Logic Checking Report 10/07/92 13:08:21 CHECK WORKFUNC FOR UNIQUE WORK FUNCTION NUMBERS -----WFNUM COUNT . ------WARNING- No rows exist or satisfy the specified clause. 13:08:44 MAXINUM AND MINIMUM WORK FUNCTION NUMBERS Appropriation Max# Nin≢ 21196 1 21218 19883 -0- -0-С Ē

Appendix F Sample Reports

13:09:38	
CHECK WORKFUNC FOR INVALID DIVISIONS AS REFERENCED IN DISTCODE	5
WFNUM DIVNAM	
21197 MMD	
21198 NMD	
21199 MMD 21200 MMD	
21200 AND 21201 MMD	
21202 MMD	
21203 MMD	
21204 MMD 21205 MMD	
21205 MMD 21206 MMD	
21207 191D	
21208 MHD	
21209 MMD	
21210 MMD 21211 MMD	
21212 MD	
21213 MMD	
21214 NMD	
21215 NMD 21216 NMD	
21218 MD	
19883 10D	
19884 MMD	
19886 MMD	
19887 NMD	
19888 MMD	
19889 MMD	
19890 MMD 19891 MMD	
19892 MMD	
19893 MMD	
19894 MMD	
19895 MMD 19896 MMD	
19897 MMD	
19898 MMD	
19899 MMD	
19900 MMD 19801 MMD	
19902 MMD	
19903 MMD	
19904 MMD	
19905 MMD 19906 MMD	
19907 MMD	
19908 MMD	

Appendix F Sample Report

```
13:10:00
CHECK WORKFUNC FOR INVALID DISTRICTS AS REFERENCED IN DISTRICT
      WFNUM DISTRICT
-WARNING- No rows exist or satisfy the specified clause.
13:10:30
CHECK WORKFUNC FOR INVALID FCCD AS REFERENCED IN FEAT TIT
      WFNUM DISTRICT DIVNAM FCCD
-WARNING- No rows exist or satisfy the specified clause.
13:11:11
CHECK WORKFUNC FOR INVALID PROJCLS AS REFERENCED IN CLASS
      WFNUM DISTRICT DIVNAM PROJELS
-WARNING- No rows exist or satisfy the specified clause.
13:11:37
CHECK WORKFUNC FOR APP CODE NOT EQUAL TO "C", "E", OR "F"
     WFNUM DISTRICT DIVNAM APPCODE
-WARNING- No rows exist or satisfy the specified clause.
13:11:55
CHECK WORKFUNC FOR MISSING COFMARID
     WFNUM DISTRICT DIVNAM COFMARID
-WARNING- No rows exist or satisfy the specified clause.
```

```
13:12:11
```

CHECK WORKFUNC FOR MISSING CATEGORY WFNUM DISTRICT DIVNAM CATEGORY -WARNING- No rows exist or satisfy the specified clause. 13:12:27 CHECK WORKFUNC FOR MISSING CWIS NUMBER WFNUM DISTRICT DIVNAM CWIS -WARNING- No rows exist or satisfy the specified clause. 13:12:44 CHECK WORKFUNC FOR MISSING WORK FUNC NUMBER WFNUM DISTRICT DIVNAM -WARNING- No rows exist or satisfy the specified clause. 13:12:44 CHECK WORKFUNC FOR MISSING FUNCID WFNUM DISTRICT DIVNAM FUNCID -WARNING- No rows exist or satisfy the specified clause. 13:13:01 CHECK WORKFUNC FOR MISSING RANK WFNUM DISTRICT DIVNAM RANK -WARNING- No rows exist or satisfy the specified clause.

```
13:13:17
```

.

EB2 MOD 600 EB3 MOD 588 EB3 MOD 271 EB4 MOD 237 EB4 MOD 213 EB4 MOD 213 EB4 MOD 213 EB4 MOD 213 EB4 MOD 252 EB4 MOD 276 EB4 MOD 150 EB4 MOD 302 EB4 MOD 389 CB3 LMD 167 CB3 LMD 184 CB3 LMD 184 CB3 LMD 184 CB3 LMD 184	7 EB2 MOD 600 8 EB3 MMD 268 9 EB3 MMD 271 3 EB4 MMD 213 6 EB4 MMD 213 6 EB4 MMD 213 6 EB4 MMD 213 6 EB4 MMD 252 7 EB4 MMD 252 7 EB4 MMD 252 7 EB4 MMD 252 7 EB4 MMD 137 2 EB4 MMD 137 2 EB4 MMD 302 8 EB4 MMD 137 2 EB4 MMD 369 9 CB3 LMD 389 9 CB3 LMD 147 2 CB3 LMD 184 2 CB3 LMD 184 2 CB3 LMD 184 2 CB3 LMD 184
EB3 NMD 588 EB3 NMD 271 EB4 NMD 237 EB4 NMD 213 EB4 NMD 213 EB4 NMD 252 EB4 NMD 302 EB4 NMD 302 EB4 NMD 369 CB3 LMD 389 CB3 LMD 167 CB3 LMD 184 CB3 LMD 1	8 EB3 NMD 588 9 EB3 NMD 271 3 EB4 NMD 213 6 EB4 NMD 213 6 EB4 NMD 213 6 EB4 NMD 213 6 EB4 NMD 241 7 EB4 NMD 252 4 EB4 NMD 276 5 EB4 NMD 137 2 EB4 NMD 302 8 EB4 NMD 137 2 EB4 NMD 302 8 EB4 NMD 189 9 CB3 LMD 182 9 CB3 LMD 184
EB3 MMD 271 EB4 MMD 237 EB4 MMD 213 EB4 MMD 241 EB4 MMD 241 EB4 MMD 241 EB4 MMD 252 EB4 MMD 276 EB4 MMD 150 EB4 MMD 302 EB4 MMD 389 CB3 LMD 167 CB3 LMD 184 CB3 LMD 182 CB3 LMD 184 CB3 LMD 184 CB3 LMD 184 CB3 LMD 184 CB4 LMD 2	9 EB3 NOLD 271 3 EB4 NOLD 207 4 EB4 NOLD 213 6 EB4 NOLD 213 6 EB4 NOLD 213 6 EB4 NOLD 213 6 EB4 NOLD 252 4 EB4 NOLD 150 9 EB4 NOLD 137 2 EB4 NOLD 302 8 EB4 NOLD 167 2 CB3 LMD 389 9 CB3 LMD 184 2 CB3 LMD 184 2 CB3 LMD 184 2 CB3 LMD 1270 1 CB3 LMD 142 2 CC1 MRD
EB4 NMD 207 EB4 NMD 213 EB4 NMD 241 EB4 NMD 241 EB4 NMD 241 EB4 NMD 276 EB4 NMD 150 EB4 NMD 137 EB4 NMD 302 EB4 NMD 137 EB4 NMD 302 EB4 NMD 389 CB3 LMD 389 CB3 LMD 142 CB3 LMD 184 CC1 MRD 1	3 EB4 NMD 207 4 EB4 NMD 213 5 EB4 NMD 241 7 EB4 NMD 252 4 EB4 NMD 252 5 EB4 NMD 150 9 EB4 NMD 302 6 EB4 NMD 302 6 CB3 LMD 389 7 CB3 LMD 184 2 CB3 LMD 184 2 CB3 LMD 184 2 CB3 LMD 184 2 CB3 LMD 142 2 CC1 MRD 111 5 CC1 MRD 380
EB4 NMD 237 EB4 NMD 213 EB4 NMD 252 EB4 NMD 252 EB4 NMD 276 EB4 NMD 276 EB4 NMD 150 EB4 NMD 302 EB4 NMD 369 CB3 LMD 167 CB3 LMD 184 CB4 LMD 2	4 EB4 MMD 237 5 EB4 MMD 213 6 EB4 MMD 241 7 EB4 MMD 252 4 EB4 MMD 276 5 EB4 MMD 150 9 EB4 MMD 137 2 EB4 MMD 302 8 EB3 LMD 389 3 CB3 LMD 184 2 CC1 MRD 111
EB4 MMD 213 EB4 MMD 252 EB4 MMD 150 EB4 MMD 150 EB4 MMD 137 EB4 MMD 389 CB3 LMD 189 CB3 LMD 117 CB3 LMD 184 CB4 LMD 1660 CC1 MRD 111 CC1 MRD 142 CC2 MRD 378 CC2 MRD	5 EB4 MMD 213 6 EB4 MMD 252 4 EB4 MMD 276 5 EB4 MMD 150 9 EB4 MMD 137 2 EB4 MMD 167 2 EB3 LMD 389 3 CB3 LMD 167 2 CB3 LMD 184 2 CB3 LMD 184 2 CB3 LMD 184 4 CB3 LMD 184 5 CC1 MRD 139 6 CC1 MRD 142 6 CC2 MRD 239
EB4 MMD 241 EB4 MMD 252 EB4 MMD 150 EB4 MMD 137 EB4 MMD 137 EB4 MMD 137 EB4 MMD 137 EB4 MMD 302 EB4 MMD 137 CB3 LMD 167 CB3 LMD 167 CB3 LMD 117 CB3 LMD 140 CB3 LMD 184 CC1 MRD 111 CC1 MRD 1	6 EB4 MMD 241 7 EB4 MMD 252 4 EB4 MMD 150 9 EB4 MMD 137 2 EB4 MMD 302 8 EB3 LMD 389 9 CB3 LMD 184 2 CB3 LMD 184 2 CB3 LMD 184 2 CB3 LMD 184 2 CB3 LMD 139 0 CB4 LMD 1660 5 CC1 MRD 111 6 CC2 MRD 380
EB4 MMD 252 EB4 MMD 150 EB4 MMD 137 EB4 MMD 302 EB4 MMD 369 CB3 LMD 167 CB3 LMD 184 CB3 LMD 182 CB3 LMD 184 CB3 LMD 139 CB4 LMD 2660 CC1 MRD 111 CC1 MRD 142 CC2 MRD 376 CC2 MRD 376 CC2 MRD 103 CC2 MRD	7 EB4 MMD 252 4 EB4 MMD 150 5 EB4 MMD 137 2 EB4 MMD 302 8 EB4 MMD 302 8 EB4 MMD 302 8 EB4 MMD 170 7 CB3 LMD 389 9 CB3 LMD 389 9 CB3 LMD 117 2 CB3 LMD 184 2 CB3 LMD 182 0 CB3 LMD 184 2 CB3 LMD 142 2 CC1 MRD 111 5 CC1 MRD 142 6 CC2 MRD 376
EB4 MMD 276 EB4 MMD 137 EB4 MMD 302 EB4 MMD 369 CB3 LMD 167 CB3 LMD 117 CB3 LMD 184 CB3 LMD 184 CB3 LMD 182 CB3 LMD 182 CB3 LMD 182 CB3 LMD 182 CB3 LMD 139 CB4 LMD 287 CB4 LMD 1660 CC1 MRD 111 CC1 MRD 142 CC2 MRD 380 CC2 MRD 378 CC2 MRD 120 CC2 MRD 130 CC2 MRD 103 CC2 MRD	4 EB4 NMD 276 5 EB4 NMD 150 9 EB4 NMD 302 8 EB4 NMD 302 8 EB4 NMD 302 8 EB4 NMD 170 7 CB3 LMD 389 9 CB3 LMD 389 3 CB3 LMD 117 2 CB3 LMD 184 2 CB3 LMD 182 2 CB3 LMD 184 2 CB3 LMD 111 5 CC1 MRD 111 5 CC2 MRD 239
EB4 NMD 150 EB4 NMD 302 EB4 NMD 302 EB4 NMD 370 CB3 LMD 389 CB3 LMD 389 CB3 LMD 167 CB3 LMD 117 CB3 LMD 184 CB3 LMD 184 CB3 LMD 182 CB3 LMD 182 CB3 LMD 184 CB3 LMD 184 CB3 LMD 139 CB4 LMD 1660 CC1 MRD 111 CC1 MRD 142 CC2 MRD 380 CC2 MRD 378 CC2 MRD 120 CC2 MRD 120 CC2 MRD 130 CC2 MRD 130 CC2 MRD 130 CC2 MRD 376 CC2 MRD	5 EB4 NMD 150 9 EB4 NMD 302 2 EB4 NMD 377 2 EB4 NMD 170 7 CB3 LMD 389 9 CB3 LMD 389 9 CB3 LMD 167 2 CB3 LMD 184 2 CC1 MRD 111 5 CC1 MRD 142 6 CC2 MRD 378
EB4 NHD 137 EB4 NHD 302 EB4 NHD 170 CB3 LMD 389 CB3 LMD 167 CB3 LMD 389 CB3 LMD 117 CB3 LMD 117 CB3 LMD 184 CB3 LMD 182 CB3 LMD 182 CB3 LMD 182 CB3 LMD 184 CB3 LMD 184 CB3 LMD 139 CB4 LMD 1660 CC1 MRD 111 CC1 MRD 142 CC2 MRD 239 CC2 MRD 380 CC2 MRD 378 CC2 MRD 114 CC2 MRD 120 CC2 MRD 103 CC2 MRD 130 CC2 MRD 160 CC2 MRD	BAS NED 137 2 EB4 NMD 302 8 EB4 NMD 170 7 CB3 LMD 389 9 CB3 LMD 389 9 CB3 LMD 389 9 CB3 LMD 167 2 CB3 LMD 184 2 CB3 LMD 142 2 CC1 MRD 111 5 CC1 MRD 142 5 CC2
EB4 MMD 302 EB4 MMD 170 CB3 LMD 389 CB3 LMD 167 CB3 LMD 117 CB3 LMD 117 CB3 LMD 117 CB3 LMD 440 CB3 LMD 184 CB3 LMD 184 CB3 LMD 184 CB3 LMD 184 CB3 LMD 139 CB4 LMD 287 CB4 LMD 1660 CC1 MRD 111 CC1 NRD 142 CC2 MRD 380 CC2 NRD 239 CC2 MRD 378 CC2 NRD 314 CC2 NRD 114 CC2 NRD 130 CC2 NRD 130 CC2 NRD 316 CC2 NRD 130 CC2 NRD	International MAD 302 8 EB4 MMD 170 7 CB3 IMD 389 9 CB3 IMD 167 2 CB3 IMD 189 3 CB3 IMD 117 2 CB3 IMD 1440 4 CB3 IMD 184 2 CB3 IMD 182 9 CB3 IMD 184 2 CB3 IMD 184 2 CB3 IMD 184 2 CB3 IMD 184 CB3 IMD 139 0 CB4 IMD 184 CB3 IMD 111 5 CC1 MRD 111 5 CC1 MRD 142 6 CC2 MRD 380 6 CC2 MRD 378 6 CC2 MRD
CB3 LMD 389 CB3 LMD 167 CB3 LMD 167 CB3 LMD 117 CB3 LMD 440 CB3 LMD 117 CB3 LMD 184 CB3 LMD 184 CB3 LMD 184 CB3 LMD 139 CB4 LMD 287 CB4 LMD 1660 CC1 MRD 111 CC1 MRD 195 CC1 MRD 142 CC2 MRD 239 CC2 MRD 218 CC2 MRD 218 CC2 MRD 114 CC2 MRD 114 CC2 MRD 103 CC2 MRD 114 CC2 MRD 103 CC2 MRD 103 CC2 MRD 103 CC2 MRD 150 CC2 MRD	7 CB3 LMD 389 9 CB3 LMD 167 2 CB3 LMD 167 2 CB3 LMD 184 2 CB3 LMD 440 4 CB3 LMD 184 2 CB3 LMD 184 2 CB3 LMD 182 9 CB3 LMD 184 CB3 LMD 139 0 CB4 LMD 287 0 CB4 LMD 1660 5 CC1 MRD 111 5 CC2 MRD 142 6 CC2 MRD 218 6 CC2 MRD 378 6 CC2 MRD 114 7 CC2 MRD 103 6 CC2 MRD 103 <tr< td=""></tr<>
CB3 LMD 167 CB3 LMD 389 CB3 LMD 117 CB3 LMD 440 CB3 LMD 440 CB3 LMD 184 CB3 LMD 184 CB3 LMD 182 CB3 LMD 184 CB4 LMD 287 CB4 LMD 142 CC2 MRD 142 CC2 MRD 218 CC2 MRD 376 CC2 MRD 114 CC2 MRD 103 CC2 MRD 1	CB3 LMD 167 CB3 LMD 389 CB3 LMD 389 CB3 LMD 117 CB3 LMD 440 CB3 LMD 184 CB3 LMD 182 CB3 LMD 182 CB3 LMD 182 CB3 LMD 184 CB3 LMD 182 CB3 LMD 184 CB3 LMD 195 CC4 MRD 111 CC1 MRD 142 CC2 MRD 239 CC2 MRD 218 CC2 MRD 218 CC2 MRD 203 CC2 MRD 2
CB3 LMD 389 CB3 LMD 117 CB3 LMD 440 CB3 LMD 184 CB3 LMD 184 CB3 LMD 184 CB3 LMD 182 CB3 LMD 184 CB4 LMD 287 CB4 LMD 1660 CC1 MRD 111 CC1 MRD 195 CC1 MRD 142 CC2 MRD 239 CC2 MRD 218 CC2 MRD 376 CC2 MRD 114 CC2 MRD 114 CC2 MRD 103 CC2 MRD 103 CC2 MRD 150 CC2 MRD	2 CB3 LMD 389 3 CB3 LMD 117 2 CB3 LMD 440 4 CB3 LMD 184 2 CB3 LMD 182 2 CB3 LMD 184 2 CB3 LMD 182 2 CB3 LMD 182 3 CB3 LMD 182 4 CB3 LMD 184 5 CB3 LMD 184 6 CB3 LMD 186 7 CB4 LMD 1660 5 CC1 MRD 195 6 CC2 MRD 142 6 CC2 MRD 218 6 CC2 MRD 376 6 CC2 MRD 114 CC2 MRD 103 6 CC2 MRD 203 7 CC2 MRD 103 <tr< td=""></tr<>
CB3 LMD 117 CB3 LMD 440 CB3 LMD 184 CB3 LMD 182 CB3 LMD 182 CB3 LMD 182 CB3 LMD 184 CB3 LMD 184 CB3 LMD 139 CB4 LMD 287 CB4 LMD 1660 CC1 MRD 111 CC1 MRD 195 CC1 MRD 142 CC2 MRD 239 CC2 MRD 380 CC2 MRD 316 CC2 MRD 218 CC2 MRD 376 CC2 MRD 114 CC2 MRD 120 CC2 MRD 130 CC2 MRD 130 CC2 MRD 140 CC2 MRD 150 CC2 MRD 150 CC3 NPD	3 CB3 LMD 117 2 CB3 LMD 440 4 CB3 LMD 184 2 CB3 LMD 182 2 CB3 LMD 182 2 CB3 LMD 182 2 CB3 LMD 184 2 CB3 LMD 180 2 CB4 LMD 1660 5 CC1 MRD 195 5 CC1 MRD 142 6 CC2 MRD 218 6 CC2 MRD 376 6 CC2 MRD 114 CC2 MRD 103 6 CC2 MRD 103 6 CC2 MRD 103 <tr< td=""></tr<>
CB3 LMD 440 CB3 LMD 184 CB3 LMD 182 CB3 LMD 182 CB3 LMD 184 CB3 LMD 184 CB3 LMD 139 CB4 LMD 1660 CC1 MRD 111 CC1 MRD 111 CC1 MRD 142 CC2 NRD 142 CC2 NRD 239 CC2 NRD 218 CC2 NRD 218 CC2 NRD 376 CC2 NRD 114 CC2 NRD 120 CC2 NRD 103 CC2 NRD 150 CC2 NRD 150 CC3 NPD 135 CC2 NPD	2 CB3 LMD 440 4 CB3 LMD 184 2 CB3 LMD 182 9 CB3 LMD 182 9 CB3 LMD 182 9 CB3 LMD 184 4 CB3 LMD 139 9 CB4 LMD 287 9 CB4 LMD 1660 5 CC1 MRD 111 5 CC1 MRD 142 5 CC2 NRD 239 5 CC2 NRD 239 5 CC2 NRD 218 6 CC2 NRD 378 7 CC2 NRD 376 7 CC2 NRD 114 7 CC2 NRD 120 7 CC2 NRD 120 7 CC2 NRD 135 7 CC2 NRD 139 6 CC2 NRD 141 7 CC2 NRD 130 7 CC2 NRD 130 7 CC2 NRD 130 7 CC2 NRD 130 <
CB3 LMD 184 CB3 LMD 182 CB3 LMD 1270 CB3 LMD 139 CB4 LMD 287 CB4 LMD 1660 CC1 MRD 111 CC1 MRD 111 CC1 MRD 142 CC2 MRD 142 CC2 MRD 239 CC2 MRD 380 CC2 MRD 218 CC2 MRD 376 CC2 MRD 376 CC2 MRD 114 CC2 MRD 120 CC2 MRD 130 CC2 MRD 103 CC2 MRD 103 CC2 MRD 103 CC2 MRD 103 CC2 MRD 130 CC2 MRD 130 CC2 MRD 130 CC3 NCD 141 CP5 NCD <td< td=""><td>4 CB3 LMD 184 2 CB3 LMD 182 2 CB3 LMD 182 2 CB3 LMD 184 2 CB3 LMD 184 2 CB3 LMD 184 2 CB3 LMD 184 4 CB3 LMD 139 0 CB4 LMD 1660 5 CC1 MRD 111 5 CC1 MRD 195 5 CC1 MRD 142 5 CC2 MRD 239 6 CC2 MRD 380 7 CC2 MRD 218 6 CC2 MRD 376 6 CC2 MRD 114 7 CC2 MRD 120 7 CC2 MRD 396 CC2 MRD 103 CC2 MRD 130 CC2 MRD 130 CC2</td></td<>	4 CB3 LMD 184 2 CB3 LMD 182 2 CB3 LMD 182 2 CB3 LMD 184 2 CB3 LMD 184 2 CB3 LMD 184 2 CB3 LMD 184 4 CB3 LMD 139 0 CB4 LMD 1660 5 CC1 MRD 111 5 CC1 MRD 195 5 CC1 MRD 142 5 CC2 MRD 239 6 CC2 MRD 380 7 CC2 MRD 218 6 CC2 MRD 376 6 CC2 MRD 114 7 CC2 MRD 120 7 CC2 MRD 396 CC2 MRD 103 CC2 MRD 130 CC2 MRD 130 CC2
CB3 LMD 182 CB3 LMD 1270 CB3 LMD 139 CB4 LMD 287 CB4 LMD 1660 CC1 MRD 111 CC1 MRD 111 CC2 MRD 142 CC2 MRD 239 CC2 MRD 218 CC2 MRD 218 CC2 MRD 376 CC2 MRD 376 CC2 MRD 114 CC2 MRD 114 CC2 MRD 103 CC2 MRD 150 CC3 NCD 141 CP5 NCD <td< td=""><td>2 CB3 LMD 182 2 CB3 LMD 1270 1 CB3 LMD 184 4 CB3 LMD 139 0 CB4 LMD 287 0 CB4 LMD 1660 5 CC1 MRD 111 5 CC1 MRD 195 5 CC1 MRD 142 5 CC2 MRD 239 6 CC2 MRD 380 7 CC2 MRD 218 6 CC2 MRD 378 7 CC2 MRD 376 7 CC2 MRD 114 7 CC2 MRD 120 7 CC2 MRD 103 7 CC2 MRD 103 7 CC2 MRD 103 7 CC2 MRD 103 7 CC2 MRD 135 7 MRD 135 141<!--</td--></td></td<>	2 CB3 LMD 182 2 CB3 LMD 1270 1 CB3 LMD 184 4 CB3 LMD 139 0 CB4 LMD 287 0 CB4 LMD 1660 5 CC1 MRD 111 5 CC1 MRD 195 5 CC1 MRD 142 5 CC2 MRD 239 6 CC2 MRD 380 7 CC2 MRD 218 6 CC2 MRD 378 7 CC2 MRD 376 7 CC2 MRD 114 7 CC2 MRD 120 7 CC2 MRD 103 7 CC2 MRD 103 7 CC2 MRD 103 7 CC2 MRD 103 7 CC2 MRD 135 7 MRD 135 141 </td
CB3 LMD 1270 CB3 LMD 184 CB3 LMD 139 CB4 LMD 287 CB4 LMD 1660 CC1 MRD 111 CC2 MRD 195 CC1 MRD 195 CC1 MRD 142 CC2 MRD 239 CC2 MRD 380 CC2 MRD 218 CC2 MRD 376 CC2 MRD 114 CC2 MRD 114 CC2 MRD 103 CC2 MRD 150 CC3 NCD 141 CP5 NCD 370 CG2 NPD <td< td=""><td>CB3 LMD 1270 CB3 LMD 184 CB3 LMD 139 CB4 LMD 287 CB4 LMD 1660 CC1 MRD 111 CC2 MRD 195 CC1 MRD 142 CC2 MRD 239 CC2 MRD 380 CC2 MRD 218 CC2 MRD 378 CC2 MRD 376 CC2 MRD 114 CC2 MRD 120 CC2 MRD 120 CC2 MRD 120 CC2 MRD 1396 CC2 MRD 103 CC2 MRD 103 CC2 MRD 135 CC3 NCD 141 CC2 NPD 135 CC2 NPD 135 CC2 NPD 251 CG4 NPD 109 </td></td<>	CB3 LMD 1270 CB3 LMD 184 CB3 LMD 139 CB4 LMD 287 CB4 LMD 1660 CC1 MRD 111 CC2 MRD 195 CC1 MRD 142 CC2 MRD 239 CC2 MRD 380 CC2 MRD 218 CC2 MRD 378 CC2 MRD 376 CC2 MRD 114 CC2 MRD 120 CC2 MRD 120 CC2 MRD 120 CC2 MRD 1396 CC2 MRD 103 CC2 MRD 103 CC2 MRD 135 CC3 NCD 141 CC2 NPD 135 CC2 NPD 135 CC2 NPD 251 CG4 NPD 109
CB3 LMD 184 CB3 LMD 139 CB4 LMD 287 CB4 LMD 1660 CC1 MRD 111 CC1 MRD 195 CC1 MRD 195 CC2 MRD 239 CC2 MRD 239 CC2 MRD 218 CC2 MRD 218 CC2 MRD 376 CC2 MRD 114 CC2 MRD 120 CC2 MRD 115 CC2 MRD 103 CC2 MRD 139 CC2 MRD 103 CC2 MRD 135 CC2 MRD 150 CP4 NCD 150 CP5 NCD 141 CP5 NCD	L CB3 LMD 184 CB3 LMD 139 D CB4 LMD 287 D CB4 LMD 1660 C C1 MRD 111 C C2 MRD 195 D CC1 MRD 142 C C2 MRD 239 C C2 MRD 380 D CC2 MRD 218 C C2 MRD 218 C C2 MRD 376 C C2 MRD 376 C C2 MRD 114 C C2 MRD 396 C C2 MRD 103 C C2 MRD 103 C C2 MRD 103 C C2 MRD 103 C C2 MRD 135 C C2 MRD 1396 C C2 MRD 135 C C2 MRD 135 C C2 MRD 103 C C2 MRD 135 C C2 MRD 135 C C2
CB3 LMD 139 CB4 LMD 287 CB4 LMD 1660 CC1 MRD 111 CC1 MRD 195 CC1 MRD 142 CC2 MRD 239 CC2 MRD 380 CC2 MRD 218 CC2 MRD 218 CC2 MRD 376 CC2 MRD 114 CC2 MRD 120 CC2 MRD 120 CC2 MRD 139 CC2 MRD 103 CC2 MRD 103 CC2 MRD 103 CC2 MRD 103 CC2 MRD 150 CP3 NCD 141 CP5 NCD 141 CP5 NCD 370 CQ2 NPD 251 CQ2 NPD 251 CQ2 NPD 251 CQ2 NPD	CB3 LMD 139 CB4 LMD 287 CB4 LMD 1660 CC1 MRD 111 CC1 MRD 195 CC1 MRD 142 CC2 MRD 239 CC2 MRD 380 CC2 MRD 218 CC2 MRD 378 CC2 MRD 376 CC2 MRD 114 CC2 MRD 376 CC2 MRD 120 CC2 MRD 1396 CC2 MRD 396 CC2 MRD 103 CC2 MRD 103 CC2 MRD 103 CC2 MRD 135 CE5 NAD 103 CF3 NCD 141 CP5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109
CB4 LMD 287 CB4 LMD 1660 CC1 MRD 111 CC1 MRD 195 CC1 MRD 142 CC2 MRD 380 CC2 MRD 380 CC2 MRD 218 CC2 MRD 218 CC2 MRD 376 CC2 MRD 114 CC2 MRD 120 CC2 MRD 120 CC2 MRD 1376 CC2 MRD 160 CC2 MRD 103 CC2 MRD 103 CC2 MRD 103 CC2 MRD 150 CP3 NCD 141 CP5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG2 NPD 251 CG2 NPD 109	CB4 LHD 287 CB4 LHD 1660 CC1 MRD 111 CC1 MRD 195 CC1 MRD 142 CC2 MRD 239 CC2 MRD 380 CC2 MRD 218 CC2 MRD 376 CC2 MRD 376 CC2 MRD 114 CC2 MRD 376 CC2 MRD 376 CC2 MRD 120 CC2 MRD 120 CC2 MRD 396 CE5 NAD 103 CF3 NCD 180 CF4 NCD 150 CF5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109
CB4 LMD 1660 CC1 MRD 111 CC1 MRD 195 CC2 MRD 239 CC2 MRD 380 CC2 MRD 218 CC2 MRD 378 CC2 MRD 376 CC2 MRD 114 CC2 MRD 120 CC2 MRD 120 CC2 MRD 120 CC2 MRD 120 CC2 MRD 130 CC2 MRD 160 CC2 MRD 103 CC2 MRD 103 CC2 MRD 103 CC2 MRD 150 CP5 NCD 141 CP5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG2 NPD 109	CB4 LMD 1660 CC1 MRD 111 CC1 MRD 195 CC1 MRD 142 CC2 MRD 239 CC2 MRD 380 CC2 MRD 218 CC2 MRD 378 CC2 MRD 376 CC2 MRD 114 CC2 MRD 376 CC2 MRD 376 CC2 MRD 120 CC2 MRD 120 CC2 MRD 396 CE5 NAD 103 CF3 NCD 180 CF4 NCD 150 CF5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109
CC1 MRD 111 CC1 MRD 195 CC1 MRD 142 CC2 MRD 239 CC2 MRD 380 CC2 MRD 415 CC2 MRD 218 CC2 MRD 376 CC2 MRD 376 CC2 MRD 114 CC2 MRD 120 CC2 MRD 120 CC2 MRD 103 CC3 NCD 180 CP5 NCD 141 CP5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109	CC1 MRD 111 CC1 MRD 195 CC1 MRD 142 CC2 MRD 239 CC2 MRD 380 CC2 MRD 218 CC2 MRD 378 CC2 MRD 376 CC2 MRD 114 CC2 MRD 114 CC2 MRD 120 CC2 MRD 120 CC2 MRD 103 CF3 NCD 180 CF4 NCD 150 CF5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109
CC1 NRD 195 CC1 MRD 142 CC2 NRD 239 CC2 MRD 380 CC2 MRD 415 CC2 MRD 218 CC2 MRD 376 CC2 MRD 376 CC2 MRD 114 CC2 MRD 120 CC2 MRD 120 CC2 MRD 103 CC2 MRD 103 CC2 MRD 103 CC2 MRD 180 CC2 MRD 135 CR5 NAD 103 CF3 NCD 141 CF5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109	CC1 MRD 195 CC1 MRD 142 CC2 MRD 239 CC2 MRD 380 CC2 MRD 415 CC2 MRD 218 CC2 MRD 376 CC2 MRD 376 CC2 MRD 114 CC2 MRD 120 CC2 MRD 120 CC2 MRD 120 CC2 MRD 103 CC5 NAD 103 CF3 NCD 180 CF4 NCD 150 CF5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109
CC1 HRD 142 CC2 HRD 239 CC2 HRD 380 CC2 HRD 415 CC2 HRD 218 CC2 HRD 376 CC2 HRD 376 CC2 HRD 114 CC2 HRD 120 CC2 HRD 120 CC2 HRD 103 CC2 HRD 396 CC2 HRD 103 CC2 HRD 103 CC2 HRD 160 CF3 NCD 180 CF4 NCD 150 CF5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109	CC1 NRD 142 CC2 NRD 239 CC2 NRD 380 CC2 NRD 415 CC2 MRD 218 CC2 MRD 376 CC2 MRD 376 CC2 MRD 114 CC2 MRD 120 CC2 MRD 120 CC2 MRD 120 CC2 MRD 103 CC2 MRD 396 CC2 MRD 103 CF3 NCD 180 CF4 NCD 150 CF5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109
CC2 MRD 380 CC2 MRD 415 CC2 MRD 218 CC2 MRD 378 CC2 MRD 376 CC2 MRD 376 CC2 MRD 114 CC2 MRD 120 CC2 MRD 203 CC2 MRD 396 CC2 MRD 396 CC2 MRD 103 CC2 MRD 103 CC2 MRD 160 CC2 MRD 150 CF3 NCD 180 CF4 NCD 150 CF5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109	CC2 NRD 239 CC2 NRD 380 CC2 NRD 218 CC2 NRD 376 CC2 NRD 376 CC2 NRD 114 CC2 NRD 120 CC2 NRD 203 CC2 NRD 396 CC2 NRD 103 CC2 NRD 103 CC2 NRD 103 CC2 NRD 103 CC2 NRD 135 CE5 NAD 141 CP5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109
CC2 HRD 380 CC2 HRD 415 CC2 HRD 218 CC2 HRD 376 CC2 HRD 376 CC2 HRD 114 CC2 HRD 120 CC2 HRD 120 CC2 HRD 396 CC2 HRD 396 CC2 HRD 396 CC2 HRD 103 CC2 HRD 103 CC2 HRD 160 CC3 NCD 180 CP3 NCD 180 CP4 NCD 150 CP5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109	ICC2 NRD 380 CC2 NRD 218 CC2 NRD 378 CC2 NRD 376 CC2 NRD 376 CC2 NRD 114 CC2 NRD 120 CC2 NRD 120 CC2 NRD 103 CC2 NRD 103 CC2 NRD 103 CC2 NRD 103 CC2 NRD 135 CE5 NAD 141 CF5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109
CC2 MRD 218 CC2 MRD 378 CC2 MRD 376 CC2 MRD 114 CC2 MRD 120 CC2 MRD 203 CC2 MRD 396 CC2 MRD 396 CC2 MRD 103 CC2 MRD 103 CC2 MRD 103 CC2 MRD 103 CC3 NCD 180 CP4 NCD 150 CP5 NCD 370 CG2 NPD 135 CG2 NPD 251 G4 NPD 109	CC2 MRD 415 CC2 MRD 218 CC2 MRD 376 CC2 MRD 376 CC2 MRD 114 CC2 MRD 120 CC2 MRD 203 CC2 MRD 396 CC2 MRD 396 CC2 MRD 103 CC2 MRD 103 CC2 MRD 103 CC2 MRD 103 CC2 MRD 135 CE5 NAD 150 CP4 NCD 150 CP5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109
CC2 MRD 378 CC2 MRD 376 CC2 MRD 114 CC2 MRD 120 CC2 MRD 203 CC2 MRD 396 CC2 MRD 103 CC2 MRD 165 CC2 MRD 103 CC2 MRD 103 CC3 NAD 103 CP3 NCD 180 CP4 NCD 150 CP5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109	CC2 NRD 218 CC2 NRD 376 CC2 MRD 114 CC2 NRD 120 CC2 MRD 203 CC2 MRD 396 CC2 MRD 396 CC2 MRD 103 CC2 MRD 103 CC5 NAD 103 CF3 NCD 180 CP4 NCD 150 CP5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109
378 CC2 MRD 376 CC2 MRD 114 CC2 MRD 120 CC2 MRD 203 CC2 MRD 396 CC2 MRD 103 CC2 MRD 103 CC2 MRD 103 CC2 MRD 103 CC3 NAD 103 CP4 NCD 150 CP5 NCD 141 CP5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109	CC2 MRD 376 CC2 MRD 114 CC2 MRD 120 CC2 MRD 203 CC2 MRD 396 CC2 MRD 396 CE5 NAD 115 CE5 NAD 103 CF3 NCD 180 CP4 NCD 150 CP5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109
CC2 MRD 114 CC2 MRD 120 CC2 MRD 203 CC2 MRD 396 CC2 MRD 103 CC2 MRD 103 CC2 MRD 103 CC2 MRD 103 CC3 NCD 180 CP4 NCD 150 CP5 NCD 141 CP5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109	CC2 MRD 114 CC2 MRD 120 CC2 MRD 203 CC2 MRD 396 CE5 NAD 115 CE5 NAD 103 CF3 NCD 180 CP4 NCD 150 CP5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109
CC2 MRD 120 CC2 MRD 203 CC2 MRD 396 CC5 NAD 115 CC5 NAD 103 CP3 NCD 180 CP4 NCD 150 CP5 NCD 141 CP5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109	CC2 MRD 120 CC2 MRD 203 CC2 MRD 396 CE5 NAD 115 CE5 NAD 103 CF3 NCD 180 CF4 NCD 150 CF5 NCD 141 CF5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109
CC2 MRD 203 CC2 MRD 396 CC5 NAD 115 CC5 NAD 103 CP3 NCD 180 CP4 NCD 150 CP5 NCD 141 CP5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109	CC2 MRD 203 CC2 MRD 396 CE5 NAD 115 CE5 NAD 103 CF3 NCD 180 CF4 NCD 150 CF5 NCD 141 CF5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109
CC2 MRD 396 CE5 NAD 115 CE5 NAD 103 CP3 NCD 180 CP4 NCD 150 CP5 NCD 141 CP5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109	CC2 MRD 396 CE5 NAD 115 CE5 NAD 103 CF3 NCD 180 CF4 NCD 150 CF5 NCD 141 CF5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109
2E5 NAD 115 2E5 NAD 103 2F3 NCD 180 2F4 NCD 150 2F5 NCD 141 2F5 NCD 370 2G2 NPD 135 2G2 NPD 251 2G4 NPD 109	CE5 NAD 115 CE5 NAD 103 CF3 NCD 180 CF4 NCD 150 CF5 NCD 141 CF5 NCD 370 CG2 NPD 135 CG2 NPD 244 CG2 NPD 251 CG4 NPD 109
225 NAD 103 273 NCD 180 274 NCD 150 275 NCD 141 275 NCD 370 262 NPD 135 262 NPD 251 263 NPD 109	CE5 NAD 103 CP3 NCD 180 CP4 NCD 150 CP5 NCD 141 CP5 NCD 370 CG2 NPD 135 CG2 NPD 251 CG4 NPD 109
CP3 NCD 180 CP4 NCD 150 CP5 NCD 141 CP5 NCD 370 CG2 NPD 135 G2 NPD 244 CG2 NPD 251 CG4 NPD 109	CP3 NCD 180 CP4 NCD 150 CP5 NCD 141 CP5 NCD 370 CG2 NPD 135 CG2 NPD 244 CG2 NPD 251 CG4 NPD 109
CP4 NCD 150 CP5 NCD 141 CP5 NCD 370 CG2 NPD 135 CG2 NPD 244 CG2 NPD 251 CG4 NPD 109	CP4 NCD 150 CP5 NCD 141 CP5 NCD 370 CG2 NPD 135 CG2 NPD 244 CG2 NPD 251 CG4 NPD 109
CP5 NCD 141 CP5 NCD 370 CG2 NPD 135 CG2 NPD 244 CG2 NPD 251 CG4 NPD 109	CP5 NCD 141 CP5 NCD 370 CG2 NPD 135 CG2 NPD 244 CG2 NPD 251 CG4 NPD 109
CP5 NCD 370 CG2 NPD 135 CG2 NPD 244 CG2 NPD 251 CG4 NPD 109	CF5 NCD 370 CG2 NPD 135 CG2 NPD 244 CG2 NPD 251 CG4 NPD 109
CG2 NPD 135 CG2 NPD 244 CG2 NPD 251 CG4 NPD 109	CG2 NPD 135 CG2 NPD 244 CG2 NPD 251 CG4 NPD 109
CG2 NPD 244 CG2 NPD 251 CG4 NPD 109	CG2 NPD 244 CG2 NPD 251 CG4 NPD 109
G2 NPD 251 G4 NPD 109	CG2 NPD 251 CG4 NPD 109
G4 NPD 109	CG4 NPD 109

... .

- -

13	2	1	1	4	4	
		-				

÷

WARNING	-	TOTAL	COST	I 8	LESS	THAN	OR	EQUAL	TO	ZERO

WPNUM	DISTRICT	DIVNAN	TOTCOST
1193	CC1	MRD	-\$8.00
1284	CC1	HRD	-\$7.00
1361	CC1	MRD	-\$12.00
1408	CC1	MRD	-\$5.00
1454	CC1	NRD	-\$10.00
1556	CC1	NRD	-\$6.00
1607	CC1	NRD	-\$4.00
1660	CC1	MRD	-\$4.00
1720	CC1	HRD	-\$9.00
1812	CC1	MRD	-\$10.00
1956	CC1	MRD	-\$3.00
13839	CK6	SAD	-\$300.00
14210	CK7	BAD	-\$50.00
14364	CK7	SAD	-\$10.00
			•

11:11.67	

.

MARNING - ZERO OR MISSING DISTRICT RANK IN WORKPUNC TABLE					
WFNUM DISTRIC	DIVNAN	DSTRANK			
4441 CE4	NAD	0			
4442 CE4	NAD	Ō			
4444 CE4	NAD	0			
4456 C E 4 4603 CE 4	NAD	0			
4509 CR4	NAD	0			
4510 CE4	NAD	ŏ			
4511 CE4	NAD	0			
4517 CE4	NAD	0			
4518 CE4 4532 CE4	NAD	0			
4536 CE4	NAD	0			
4553 CE4	NAD	ŏ			
4593 CE5	NAD	Ō			
7948 CG4	NPD	0			
7949 CG4 8025 CG4	KPD NDD	0			
8433 CG4	NPD	0			
11381 CH4	ORD	ō			
16478 CH3	SWD	Ō			
16507 CH(3	SWD	0			
16528 CM3		0			
16535 CH3	SWD	0			
16545 CH3	SWD	ō			
16548 CH3	SWD	0			
	SND	0			
19865 CR0	870 221	0			
19866 CB0	221	0			
19867 CS0	851	0			
19868 CS0	221	0			
19869 CS0 19870 CS0	331	0			
19871 C80	481 221	0			
19872 CS0	221	õ			
19873 CS0	231	0			
19874 CS0	221	0			
19875 C80 19876 C80	221	0			
19877 C80	441 771	0			
19878 CS0	221	ŏ			
19879 CS0	221	Ō			
19880 CS0	221	0			
19881 CSU 19882 CSO	461 771	0			
21193 CL2	SPD	0			
21194 CL2	SPD	0			

٩
					-
73	ā	4	4	ā	U9

WARNING - SERO OR MISSING DIVISION RANK IN WORKFUNC TABLE

WFNUM DISTRICT DIVNAMDIVRAMK19872 CS0SS10

13:14:26

WARNING - SERO OR MISSING OCE RANK IN WORKFUNC TABLE

WINTER DISTRICT DIVNAM OCERANK -WARNING- No rows exist or satisfy the specified clause.

•

2,24 -----2.2 5 <u>ב</u> ... FILE RAAMANA SALAS PRESSER PRE Fr 1994 Bivision Peature Cost Code Cost Aumory Angert Partitions and Multinemons, Annexis Appropriation 14/07/92 13:1413 E 2 PROFESSION • 22. 2,417 E ALANY , È 8 <u>ş</u> , <u>§</u>, areants, I LOCCS, MAR AND REPRIVOLES BUILDINGS, MOLADOS, BAUJPHERT LEVELS, MOLADOS, BAUJPHERT O EXISTICA FORMER ANALONE ANTRAL RESOLACE MANAGENET MATTAL RESOLACE MANAGENET MATTAL RESOLACE MANAGENET MATTAL RESOLACE MANAGENET MATTA CARTHAL MANAGENET MATTA CARTHAL MANAGENET MATTA CARTHAL MANAGENET MATTA CARTHAL MANAGENET MATAL ERFORT ANALONEST MATAL ENFORCEMENT COMM ACTIVITIES - LIMPECTIONS, COMM ACTIVITIES - LIMPECTIONS, POLICY PLAITS POLICY PLAITS MATURAL REPORTS FACILITIES MATURAL REPORTS FACILITIES POLICIATER, ATTIES AND SCAMALLS POLICIATER AND FLOODALLS RECEATION FACILITIES RECEATION FACILITIES RECEATION FACILITIES MAKE STABLILIZATION MAKE STABLILIZATION PULLDINGS, AND CAMALS UR Lover Mississippi Valley Division WETOTAL MAINTENANCE NUBTOTAL OPERATIONS LANDS & DAMAGES DAM & RESERVOIRS LOCKS 2883832855555 ************

		_					
		2,234					
	2020011	4,671					
	-	53'' 15					
	ry 1994 William	14 , 143					
	X	55,4					
	-						
X 4 3	PHOTONES Photones By AAA(CU)	2,417					
Freedorne Con M Relationen US: Mills	ALLERUP	R.					
bivialen peratiene er 10/07/92		Tetal					
Ū	5						
	v olvisi						
	pi valle						
	laafaa (p						
	Lower N						
	5						
			 		•		

.

			•		•	•
			•	•••••	•	o
	IN SEC		60, BK7	•••••	•	6 , 6 ,
	1947 Leice Leice		0,047	÷ičetětě	5 .965	29
		£.835K5	N.		•	÷ ž
Ĩ	ž		X		•	X.
	PROPERTY OF	·	Fa , f		•	140 ,4
r Peture Ces A Neintenen 13:14:5	MILIN	<u>-</u>	8	•••••	2	9 •
Division Operations (10/67/92		R Mant Aunt Ett Ett Strutes Weess Uneversione, oureware,		. 1		Tetal
	d Nissauri Ríver Division	LUCCO, MAR AND REERVOI BUILDING, MACHARA, RAL REALING OF POLIN, NUP REALING OF POLIN, NUM REALING OF POLIN, NUM REALING OF POLIN, NUMBER REALING AND ANALONG REALING OF COPULTING NUMBER REALING OF COPULTING MALENTING OF COPULTING OMA ACTIVITIES - DOMA ACTIVITIES - LAN ENFORCEMENT	SUBTOTAL OPERATIONS	LANDE & DUMARS DARE FLAITS DARE FLAITS MATLAL RECORDS FACILIT MATLAL RECORDS FACILIT MATLAL RECORDS FACILITIES DESCRIPTION FACILITIES DES	SUBTOTAL MAINTENANCE	
	E	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		a a n a n a a a a a a		

3 **Neith** rt 1994 Division Network FY 1994 Division Feature Cost Code Dotall Amport Operations and Maintenenco, General Appropriation 10/07/P2 13:117.23 **N** PROFILE CIT ALIM ĂŶĔŸŔŔ**Ŀ**¥**ĔĂ**Ĩ**.**ĔŶŸĔŸĨĔĔĔĔ ~3HÉÉÉÉÉ LID Lower Mississippi Valley Division

bivialan Aparatians and 18/187/92	n Peature Cr Maintenune Cr	19% Mr Code Pecalit Peneral Appr	Report Periodian				
UB Lower Mississippi Valley Bivision	ALLSNUF	OPER. CUT PROPOSED BY ASA(CU)	ł	ry 1996 Division Nousi	RANCO -	zyskame	
SUBTOTAL OPERAFICHS	54,721	•	•	۵	9	•	
20 LANDS & DAWARES 20.6 LANDS & DAWARES - ENCONCIMENTS 20.7 LANDS & DAWARES - TIMBER MANASTS 20.8 DOURDARY MONLABITATION, RECTIFICATION AND MAINTENANC	ērsľ		••••				
21.15 DOMEST. OF DAMA FACILITIES ON BAN STAUCTURES 21.16 ENVIRONMENTAL COMPLIANCE FOR BAN MULTIENANCE 22.1 LOCK AND SALT WITH CONTROL STRUCTURE MULTIENANCE 22.1 LOCK AND SALT WITH CONTROL STRUCTURE MULTIENANCE	3	•••)		
21.2 NON-SCIEDULED FOME PLAT MAILTENES 21.6 ENVIRONMENTAL COPALINES - POLER PLAT 21.1 MAIT. OF MAILUAL RESOLACE FOLLATIES	R 3 8 8	8900	••••		••••		
3.4. WHINDHERTA, COMPLIANCE - MUTAAL BULDAR SITES 3.4. WHINDHERTA, COMPLIANCE - MUTAAL BEDARCE MUTTER 3.4.1 ROOM AND REIDOR MULT ROM-RECREATIONAL 3.6.1 RELAVINER, STITY, AND SEMAAL MULT. 3.7.1 LEWE, FLOOMMILLE, REMERLANK CAMPAGERA AN AVEN BY A	2.78i	• • • • •		8888			
29.1 MURT. OF RECREATION FACILITIES 29.11 ENVIRONMENTAL COMPLIANCE - RECREATION MUTTERWICE 29.2 ROUG AND RAIDER MURT RECREATION MUTTERWICE 29.3 ENVIRON CONTROL IN RECREATION AREA 29.4 MURT. OF VIETURE FEATURE	1 6.5 293						
29.9 MINT. OF RECRATION FACILITIES USING AND 30.1 PEIN OPER BULP-WIRE CONTROL MIA SYTTENS BULP 30.2 MINT. OF PEIN OPER BULP-HEGULAR 31 AAME STALILIZATION 32.1 MANTE OF MALAFORETIMILE BUAR DATABATION							
33.11 DAEDGING - MAYLAUTION 33.21 MON-DAEDGING MAYLAUTION 33.22 Mint. of Revenuents, Grouns on Dicts to Control CU				000c			
)

	Bivision Foot Lions and Mainto 10/07/92 13	ry 1994 Ure Cost Code P Menter, Beneral	tail Report Appropriation				
LMD Lower Mississippi Valley Division		PRR. CU		FT 19%			
33.3 PAREAREN MATRILAL DISPOSAL FACILITY CONTRACT, A		LUF SY ASA(CU)	,	Reuter	EALEOP	20640118	5056ana
BUDTOTAL IMINTERANCE	121	8	B e	9 6	.		• •
	otal 167,4	21	•	•	•	0	•
			•				

ĨĨĨĨĨĨĨĨĨĨĨĨĨĨĨĨĨĨĨĨĨĨĨĨĨĨĨĨĨĨĨĨĨĨĨĨĨĨ
<pre>Prove I have pluid. Pluid the pluid of standards Pluid of standar</pre>

.

	Sathaura	0					•	•
	2054ent	•					8	•
	WRO	0	0000C				•	•
	FY 1994 DIVISION MENEST	0					•	•
Report oprintion	X	•	8 9 9 8 8		00000		•	•
PA Code Petall Beneral Appr	PPER. CUT Phoroage 7 ABA(CU)	8	0 0 0 0 C				•	•
r 1 n feeture Casi Neintenance, 13:17:27	ALL MARK	41,92	820a4	****	8g238		690'/2	9 9
Bivisia Operations and 10/07/22	MB Nissauri River Bivisian	SUBTOTAL OPERATIONS	20 LANDS & DANAGES 20.6 LANDS & DANAGES - ENCROACHIGHTS 21.15 HANTREMARCE 21.15 HANTREMARCHO MAN STRUCTURES 23.1 SCHEDALED PARE PLANT MAINTRAMARS	23.2 NON-SCHEDULES FORE FLAIT MIRTENANCE 23.6 Environmental conclarce - Pour Plant 23.1 Mirt, of Mitual Resource - Milline 24.4 Environmental Conclarace - Minal Resource Minten 25.1 Pour And Britae Mirt, - Indi-Accarticam	29.1 MAINT, OF RECREATION FACILITIES 29.11 ENVIRONMENTAL CONFLIANCE - RECREATION MAINEMARCE 29.5 MAINT, AND MACHARG OF REMA. OFEA, GAUIPHENT FOR RE 30.1 PENA OPER REULE-MATR CONTROL MATA SYSTEME GAUIP 30.2 MAINT, OF PENA OPER REULE-REAULAR	JI HANK STANILIZATION 32.7 ENVIRONDENTLA CONFLANCE - BUILDINGS, MOUNDS AND U 33.22 MAINT. OF REVETHENTS, GROUNS OR DIRES TO CONTROL CU	SUBTOTAL MAINTERNICE	τ ξ

Appendix G Presentation Materials

Appendix G Presentation Materials



1





•



G5





ate Unique Ranking	ISION RANKS	lank, Division Rank	sion ranks in Division	•		_	<u> </u>
ocess: Evalua	F-ORDER" DIVI	rision, Unique R	out-of-order' divis	Division Rank 3 6 6	7 AYS	for each Divisio	rank
Rank Generation Pr	• LOOK FOR "OUT-O	Order WF's by Div	Examine list for 'c	Unique Rank 1 2 3 4	 GRAPHICAL DISPL 	- Dollars vs. rank,	- Total Dollars vs.

Use Additive Score Algorithm	
Assign Scenario Scores to Reflect Component Importance	
Generate groups of WF's with desirable properties (e.g. environmental enhancement, recreation, health and safety)	
 STRENGTHS SCENARIOS 	
Use Best Score Algorithm	
Assign Scenario Scores to Reflect Overall Desirability	
Divide WF's into near exclusive groups (disjoint sets)	
 PARTIONING SCENARIOS 	
Scenario Definition Types and Ranking Algorithms	

£

1

-





VF Rank			
Unique M			
rocess: 1	Score		
eration P	F's by WF		
ank Gen	Order W		





REPORT DO	Form Approved OMB No. 0704-0188		
Public reporting burden for this collection of infi gathering and maintaining the data needed, and collection of information, including suggestions Dans Hiddhwey, Suits 1204, Arkingson, VA 22382	primation is estimated to avarage 1 hour per completing and revenuing the collection of for reducing this burden. To Washington Ha 4302, and to the Office of Management and	response, including the time for re- information. Send comments regar- inducerers Services, Directorate for Budget, Paperwork Reduction Proje	viewing instructions, searching existing data sources, ding this burden estimate or any other aspect of this information Operations and Reports, 1215 Jefferson ict (0784-0188), Washington, DC 20503.
1. AGENCY USE ONLY (Leave blan	k) 2. REPORT DATE	3. REPORT TYPE AND	DATES COVERED
4. TITLE AND SUBTITLE		I min report	5. FUNDING NUMBERS
Corps of Engineers Operations	and Maintenance Budget I Concept Design and Proj	Decision Support	WU 32717
Volume II: Appendixes B thr	ough G		
Craig A. Strus, Russ E. Robins Michael R. Walsh, Connie L.	son, Richard M. Males Raaymakers, Edward J. Japo	el	
7. PERFORMING ORGANIZATION N/	AME(S) AND ADDRESS(ES)		8. PERFORMING ORGANIZATION
See reverse			
9. SPONSORING/MONITORING AGE	INCY NAME(S) AND ADDRESS(E	5)	10. SPONSORING / MONITORING AGENCY REPORT NUMBER
U.S. Army Corps of Engineers			
U.S. Army Engineer Waterway 3909 Halls Ferry Road, Vickst	ys Experiment Station Durg, MS 39180-6199		Contract Report HL-94-1
11. SUPPLEMENTARY NOTES			
The main text and Appendix A Technical Information Service.	A were published under sepa , Springfield, VA 22161.	trate cover. Copies an	e available from National
12a. DISTRIBUTION / AVAILABILITY	STATEMENT		12b. DISTRIBUTION CODE
Approved for public release; d	listribution is unlimited.		
This report describes and Management Budget Deci Operations and Management designed to assist the Operatio Corps of Engineers (HQUSAC submittals by the Corps Divisi analysis needs of management and the prototype design for a are computer-based informatio volumes of descriptive data, a component for performing opp contains five analysis capabiliti analyst, a rank generator, a cr COMB_DSS at HQUSACE d future improvements.	the development, testing, an ision Support System (COM Techniques (IOMT) Research ons, Construction and Readi CE), with analysis of yearly ions. The report discusses the at HQUSACE, a detailed assisting in the decision make on systems that typically com- user interface such as menu- erations on the data, and re- ies for assisting in the O&M interia analyst, and a statistic luring the budget formation	ad evaluation of the Co B_DSS) developed un ch Program. This dec ness (OCR) Division, Operations and Mainta he budget process for description of general ing process at HQUSA tain four components: is for information man port generation capabi I budget preparation: al analyst. The testing process is described al	brps of Engineers Operation der the Improvement of ision support application was Headquarters, U.S. Army enance (O&M) budget O&M project funding, the decision support system design, ACE. Decision support systems a database for storing large agement, an analysis lity. The COMB_DSS a scenario analyst, a financial and evaluation of the long with recommendations for
Analysis Decision support	t		Vol I-56; Vol II-168
Budget Operations and	maintenance		16. PRICE CODE
17 SECURITY CLASSIFICATION I	CATION 20 LINUTATION OF ABSTRAC		
OF REPORT	OF THIS PAGE	OF ABSTRACT	

7. (Concluded).

Planning and Management Consultants, Limited Route 9, Box 15 (Highway 51 South) PO Box 1316 Carbondale, IL 62903

RMM Technical Services 3319 Eastside Avenue Cincinnati, OH 45208

Institute for Water Resources Casey Building, #2594 Fort Belvoir, VA 22060-5586

U.S. Army Construction Engineering Research Laboratory PO Box 9005 Champaign, IL 61826-9005