THESE WORK ITEMS WERE DEVELOPED TO HELP NEW ECONOMISTS IDENTIFY THINGS THAT NEED TO BE ACCOMPLISHED, AND REMIND EXPERIENCED ECONOMISTS OF STEPS NEEDED, TO EVALUATE A PROJECT.

IRRIGATION

PRELIMINARY STAFF

PROJECT EVALUATION

INFORMATION ABOUT A POTENTIAL PROJECT HAS BEEN RECEIVED. PROJECT POTENTIAL IS DETERMINED BY THE STAFF ACCESSING THE FOLLOWING:

A. IDENTIFY THE RESOURCE PROBLEMS
   1. QUANTIFY PROBLEMS
   2. DETERMINE IF PROBLEM FITS PURPOSE LISTED UNDER PL-566 (URBAN FLOOD, AG. FLOOD, WATER-SHED PROTECTION, IRRIGATION, ETC.)
   3. DETERMINE IF PROJECT CAN BEST BE SOLVED UNDER THE PL-566 PROGRAM
   4. DETERMINE POTENTIAL FOR PROJECT ECONOMIC FEASIBILITY

B. IDENTIFY OBJECTIVES OF LOCAL PEOPLE AND DETERMINE POTENTIAL SPONSORS
   1. COMPARE SPONSOR OBJECTIVES TO PROGRAM REQUIREMENTS
   2. DETERMINE RANGE OF ALTERNATIVES THAT ARE SOCIALLY ACCEPTABLE

C. ASSIST IN PREPARING A PRELIMINARY REPORT AND IF PROJECT PLANNING CONTINUES, USE THE FOLLOWING WORK ITEMS TO GUIDE THE ECONOMIC ANALYSIS

DEVELOP A STUDY PLAN, ECONOMICS PORTION.

A. LIST IN TIME SEQUENCE ALL ECONOMIC WORK ITEMS NEEDED TO SOLVE THE PROBLEMS IDENTIFIED IN THE PROJECT, USE THE WORK ITEMS DESCRIBED BELOW. ADD AND DELETE WORK ITEMS TO MAKE THE PLAN OF WORK SPECIFIC TO THE PROJECT BEING PLANNED. COORDINATE WITH APPROPRIATE STAFF AND TSC ECONOMISTS AS NEEDED. (BEGINNING OF POST APPLICATION PLANNING 502.31(a) NMS)

B. DESCRIBE PROCEDURES FOR ACCOMPLISHING EACH WORK ITEM WITH WORK DAYS REQUIRED. PROVIDE TO STUDY LEADER.

C. OBTAIN COPY OF THE OVERALL SCHEDULE AND USE IT TO SCHEDULE THE ECONOMIST WORK ITEMS ON DAILY CALENDAR, INDIVIDUAL ANNUAL PLAN OF OPERATIONS OR STATE ANNUAL PLAN OF OPERATIONS.

ASSEMBLE BASIC STAFF

A. ASSEMBLE ON A WATERSHED OR COUNTY BASIS AS APPLICABLE. GATHER ONLY DATA THAT IS USEFUL FOR THE PROJECT EVALUATION AND NARRATIVE
1. BASIC ECONOMY OF THE AREA
   A. POPULATION— BOTH RURAL AND URBAN, AGE, 
      EDUCATION, MINORITIES
   B. EMPLOYMENT BY SECTOR, E.G. AG, MFG., 
      COMMERCIAL, ETC.
   C. INCOME
      (1) RANGE
      (2) MEDIAN
      (3) COMPARE TO STATE AND NATION
D. FARM AND RANCH ENTERPRISES
   (1) TYPE—DAIRY, BEEF, SPECIALIZED, CASH CROP, ETC.
   (2) SIZE
   (3) NUMBER
   (4) TENURE
   (5) AVERAGE VALUE OF BUILDINGS
E. OFF-FARM EMPLOYMENT
   (1) NUMBER OF DAYS
   (2) KINDS, IF KNOWN

2. PROJECT BASE MAP.
3. SOILS INFORMATION
4. DRAINAGE AREA
5. COUNTY MAPS
6. AERIAL MOSAICS
7. WATERSHED LAND USE (PRESENT AND FUTURE)
8. WATER AND LAND RESOURCE PROBLEMS
   SOURCE: PUBLISHED SOIL SURVEYS; AERIAL PHOTOS,
   CITY & COUNTY DATA BOOK, AG. CENSUS, STATE AG.
   STATISTICS, URSITE FIELD EXAMINATION, APPLICATION
   FOR ASSISTANCE, AND OTHER SUCH SOURCES.
B. OTHER DATA: (MOST RECENT PRICES AND INTEREST
   TO BE USED IN PLAN.)
   1. PRICE DATA: EWAR 820-6-C
   2. INTEREST RATES EWAR 820.02(C)
   3. EVALUATION PERIOD EWAR 820.02(D)
   4. COST RETURN STUDIES
   5. YIELD DATA
   SOURCE: NATIONAL BULLETINS, EXTENSION SERVICE,
   AG. STATISTICS, AG. COMMISSIONERS

208IR DETERMINE PROCEDURES TO USE FOR
EVALUATION

204IR INTENSIFICATION BENEFITS
   A. IF THERE IS A PROJECTED CHANGE IN CROPPING
      PATTERN WITH PROJECT AND THE PROJECTED CROP IS ONE
      OF THE TEN CROPS, THEN BASE THE EVALUATION ON ONE
      OF THE FOLLOWING:
      1. CROP BUDGET ANALYSIS
      2. LAND VALUE ANALYSIS
   B. DETERMINE IF EFFICIENCY BENEFITS ARE PART OF
      THE EVALUATION

20° COMPUTER PROGRAM
   DETERMINE THE POTENTIAL FOR USE OF COMPUTER
   PROGRAMS.
2C  PROBLEM AREA

A. USE AERIAL PHOTOS OR MOSAICS OR OTHER SUITABLE
   BASE SHOWING NUMBER OF ACRES BENEFITED

2D1R  DETERMINE CURRENT LAND USE

DEVELOP CROPPING PATTERNS FOR AREA AND DISPLAY
ON BASE MAPS AND IN A TABLE WITH ACRES
AND/OR PERCENT LAND USE AND CROPS GROWN.
DETERMINE WHAT CHANGE IS EXPECTED FROM THE CURRENT CONDITION. PROJECT BY APPROPRIATE TIME PERIOD AND DISPLAY ON BASE MAP AND IN TABLE. PROJECTIONS SHOULD BE BASED ON INTERVIEWS WITH FARMERS, LOCAL RESIDENTS, EXTENSION PERSONNEL, AND OTHER KNOWLEDGEABLE PEOPLE.

YIELDS DETERMINED FROM QUESTIONAIRES FROM LOCAL RESIDENTS. AVERAGE MANAGEMENT IS ASSUMED. YIELDS REFLECT CURRENT PROBLEM AND OTHER HAZARDS THAT EXIST.

YIELDS SHOULD BE BASED ON INFORMATION OBTAINED FROM ON-SITE INTERVIEWS AND SIMILAR PROBLEM FREE CONDITIONS. STATISTICAL REPORTING SERVICE COUNTY AVERAGES AND SOILS & YIELDS MAY BE HELPFUL. AVERAGE MANAGEMENT IS ASSUMED. DISPLAY IN TABLE FORM.

DETERMINE CHANGE EXPECTED FROM CURRENT CONDITIONS PROJECT BY TIME PERIOD. DISPLAY THE RESULTS IN A TABLE.

A. EVALUATE CURRENTLY AVAILABLE CROP BUDGET DATA AND THE NEED TO DEVELOP NEW DATA. CONSIDER IF PRESENT BUDGETS CAN BE MODIFIED OR IF NEW ONES NEED TO BE DEVELOPED.

B. INTERVIEW FARMERS IN THE AREA TO DETERMINE THEIR CULTURAL PRACTICES, MANAGEMENT TECHNIQUES, AND COST OF PRODUCTION FOR THE CROPS BEING ANALYSED FOR THE PURPOSE OF DEVELOPING FULL OR PARTIAL BUDGETS. NECESSARY DATA TO BE DEVELOPED FOR PRESENT CONDITIONS AND PROJECT ALTERNATIVES INCLUDES:

1. DETERMINE TYPICAL FARM SIZE
2. DETERMINE SIZE, COST, EFFICIENCIES OF TILLAGE OPERATIONS, FUEL CONSUMPTION, FUEL COST, YEARS OF OWNERSHIP, AND HOURS OF ANNUAL USE OF EACH MACHINE USED
3. DETERMINE SEQUENCE OF OPERATIONS FOR EACH CROP
4. DETERMINE AMOUNT AND COST OF SEED, FERTILIZER, CHEMICALS, AND OTHER INPUTS OF PRODUCTION.
5. DETERMINE THE COST OF LABOR FOR FARM WORKERS IN THE AREA
6. DETERMINE COST OF CUSTOM WORK PERFORMED BY OTHERS FOR THE CROP
C. INTERVIEW RESEARCHER, PHYSICAL SCIENTISTS, UNIVERSITY PERSONNEL, AND STATE AND FEDERAL
AGENCIES TO OBTAIN ANY ADDITIONAL DATA NEEDED AND
TO VERIFY DATA OBTAINED FROM PRODUCERS.
D. USE CROP BUDGETS TO CALCULATE THE CHANGE IN
NET RETURNS FOR EACH CROP.
1. CALCULATE FUTURE WITHOUT PROJECT
2. CALCULATE RETURNS FOR EACH ALTERNATIVE

TWO THINGS HAVE TO BE DETERMINED BEFORE THE COR-
RECT WORK ITEMS CAN BE DETERMINED—TYPE OF IRRI-
GATION EVALUATION AND TYPE OF CROP EVALUATION.
A. IF THE EVALUATION IS FOR NEW IRRIGATED LAND OR
SUPPLEMENTAL WATER TO EXISTING IRRIGATED LAND,
THEN WORK ITEM 214 WILL DETERMINE THE CROP USE
EVALUATION.
B. IF THE EVALUATION IS FOR PRIMARILY THE REPAIR OF A SYSTEM AS A RESULT OF SUDDEN FAILURE FROM A STORM, USE WORK ITEM 214 TO DETERMINE THE CROP USE EVALUATION AND THEN USE WORK ITEMS 227-239 FOR THE IRRIGATION PORTION OF THE EVALUATION.

C. IF THE EVALUATION IS FOR PRIMARILY REHABILITATION USE WORK ITEM 214 TO DETERMINE THE CROP USE EVALUATION AND THEN USE WORK ITEMS 240-256 FOR THE IRRIGATION PORTION OF THE EVALUATION.

214IR DETERMINE CHANGE IN CROP USE

DETERMINE IF THERE IS A CHANGE IN THE PERCENT OF NON BASIC 10 CROPS.

A. IF THE CHANGE IN LAND USE IS RESTRICTED TO THE 10 BASIC CROPS OR IF THE PERCENT OF NON BASIC 10 CROPS DOES NOT CHANGE SO TO WORK ITEM 215.

B. IF THERE IS A PERCENT CHANGE IN THE NON BASIC 10 CROPS, THEN GO TO WORK ITEMS 216-222 IF THE BENEFIT ANALYSIS IS BASED ON CROP BUDGETS OR GO TO WORK ITEMS 223-225 IF THE BENEFIT ANALYSIS IS BASED ON THE LAND VALUE APPROACH.

215IR BENEFITS FOR NO CHANGE IN CROPS

COMPARE THE DIFFERENCE IN NET RETURN FOR CROP BUDGETS DEVELOPED IN WORK ITEM 212IR THE CROP BUDGETS SHOULD REFLECT THE DIFFERENCE IN CROP YIELDS AND PRODUCTION EXPENSES ASSOCIATED WITH THE DIFFERENT ALTERNATIVES THE BENEFITS ARE BASED ON THE REDUCED DAMAGE TO CROPS FROM DROUGHT AND REDUCED COSTS ASSOCIATED WITH USING WATER AND LAND RESOURCES FOR THE PRODUCTION OF CROPS. BENEFITS ARE:

A. CHANGES IN COSTS OF EQUIPMENT OWNERSHIP
B. CHANGES IN COSTS OF EQUIPMENT OPERATION
C. CHANGES IN PRODUCTION MATERIALS
D. CHANGES IN LABOR AND MANAGEMENT
E. CHANGES IN SYSTEM OPERATION, MAINTENANCE, AND REPLACEMENT

216IR BENEFITS FOR A CHANGE IN CROPS

THESE BENEFITS ARE BASED ON FOLLOWING THE PROCEDURE OF USING A CROP BUDGET ANALYSIS METHOD: PAG 2.3.5 STEPS 4-0

217IR TEN BASIC CROPS

DETERMINE IF ANY CROPS GROWN IN THE PROJECT AREA ARE NOT BASIC CROPS

METHOD: PAG 2.4.2 (B)

218IR DETERMINE IF OTHER CROPS WILL BE TREATED AS BASIC CROPS

A. SELECT A SAMPLE OF FARM OPERATORS ON LANDS COMPARABLE TO LANDS BENEFITING FROM THE PROJECT UNDER WITH-PROJECT CONDITIONS.
1. FOR EACH FARM OPERATION DETERMINE THE RESPECTIVE ACREAGES OF BASIC AND OTHER CROPS
2. USE THESE DATA TO COMPUTE THE PROPORTION OF OTHER CROP ACREAGE TO TOTAL CROP ACREAGE FOR
1. Use crop budgets to determine the top 25 percent of farms in the expected net income per acre.

2. Average the proportions of other crop acres to total crop acres for the top 25 percent of farms.
B. IF STANDARD STATISTICAL TESTS SHOW THAT THE PROPORTION OF OTHER CROP ACRES TO TOTAL CROP ACRES FOR THE SAMPLE IS STATISTICALLY NOT DIFFERENT FROM THE PROPORTION IN THE TOTAL SAMPLE, THEN THE CROPS CAN BE TREATED AS BASIC CROPS. IF THE PROPORTIONS ARE STATISTICALLY DIFFERENT BENEFITS FROM THESE CROPS ARE CONSIDERED EFFICIENCY BENEFITS AND ARE EVALUATED USING A PROCEDURE DESCRIBED BELOW. EVALUATE THE STATISTIC TEST AT THE 95 PERCENT LEVEL OF CONFIDENCE

METHOD: P&G 2.3.5 STEP 4

2191R DETERMINE OTHER CROP ACREAGE TREATED AS BASIC CROPS

DETERMINE THE ACREAGE LIMIT ON CROPS TREATED AS BASIC CROPS IN THE PROJECT EVALUATION

1. MULTIPLY THE ACREAGE OF COMPARABLE LAND IN THE PROJECT AREA BY THE SAMPLE PROPORTION OF THE TOP 25 PERCENT OF FARMS DEVELOPED IN WQR ITEM 2181R.

2. ALL REMAINING ACRES OF NON BASIC CROPS WILL BE CONSIDERED EFFICIENCY BENEFITS AND ARE EVALUATED USING THE PROCEDURES DESCRIBED BELOW IN WORK ITEM 222.

METHOD: P&G 2.3.5 STEP 5

22: VALUE OF AG PRODUCTION

A. COMPARE THE DIFFERENCE IN NET RETURN FOR CROP BUDGETS DEVELOPED IN WORK ITEM 2121R.

B. THE CROP BUDGETS SHOULD REFLECT THE DIFFERENCE IN CROP YIELDS AND PRODUCTION EXPENSES ASSOCIATED WITH THE DIFFERENT ALTERNATIVES.

B. THE BENEFITS ARE BASED ON THE REDUCED DAMAGE TO CROPS FROM DROUGHT AND REDUCED COSTS ASSOCIATED WITH USING WATER AND LAND RESOURCES FOR THE PRODUCTION OF CROPS. BENEFITS ARE

1. CHANGES IN COSTS OF EQUIPMENT OWNERSHIP
2. CHANGES IN COSTS OF EQUIPMENT OPERATION
3. CHANGES IN PRODUCTION MATERIALS
4. CHANGES IN LABOR AND MANAGEMENT
5. CHANGES IN SYSTEM OPERATION, MAINTENANCE, AND REPLACEMENT

2211R INTENSIFICATION BENEFITS

A. CALCULATE THE CHANGE IN NET INCOME BETWEEN WITHOUT PROJECT AND EACH ALTERNATIVE
B. EXPRESS THE DIFFERENCE IN NET INCOME IN AVERAGE ANNUAL EQUIVALENT TERMS

2221R DETERMINE EFFICIENCY BENEFITS

THESE BENEFITS ARE FROM LANDS PRODUCING NON BASIC CROPS OR CROPS NOT TREATED AS BASIC CROPS.

A. DETERMINE THE DIFFERENCE IN COST OF PRODUCING CROPS IN THE PROJECT AREA AS COMPARED TO THE COST OF PRODUCING THEM IN OTHER AREAS IN THE WQR ASSESSMENT SUBAREA. USE WORK ITEM 2121R FOR BOTH OUTSIDE THE PROJECT AREA AND INSIDE THE PROJECT.
B. DETERMINE THE NET INCOME THAT WOULD ACCRUE FROM PRODUCTION OF AN APPROPRIATE MIX OF BASIC CROPS ON THE OTHER LANDS IN THE WRC ASSESSMENT SUBAREA. USE WORK ITEM 212IR.

C. THE EFFICIENCY BENEFITS ARE THE SUM OF A AND B.

THESE BENEFITS ARE BASED ON FOLLOWING THE PROCEDURE OF USING A LAND VALUE ANALYSIS USING WORK ITEMS 224-226.

METHOD: P&G 2.3.5 STEP 9
224.8 APPRAISE PROJECT LAND
A. HAVE A QUALIFIED REAL ESTATE APPRAISER DETERMINE THE CURRENT MARKET VALUE OF THE PROJECT LAND
   1. LAND SHOULD BE CATEGORIZED FOR DIFFERENT QUALITY
   2. ADJUST THE VALUE OF THE LAND FOR IMPROVEMENTS, CROPS GROWN, TRANSPORTATION, AND OTHER CONSIDERATIONS

225IR APPRAISE SIMILAR LAND
A. HAVE A QUALIFIED REAL ESTATE APPRAISER DETERMINE THE CURRENT MARKET VALUE OF COMPARABLE NON-PROJECT LANDS THAT WOULD HAVE WATER CONDITIONS SIMILAR TO WHAT WOULD RESULT WITH PROJECT ACTION
   1. LAND SHOULD BE CATEGORIZED FOR DIFFERENT QUALITY
   2. ADJUST THE VALUE OF THE LAND FOR IMPROVEMENTS, CROPS GROWN, TRANSPORTATION, AND OTHER CONSIDERATIONS
   3. MAKE ADJUSTMENTS FOR THE PRESENT VALUE OF WATER COSTS INCURRED BY THE OPERATOR IN NON-PROJECT LANDS

225IR DETERMINE INTENSIFICATION BENEFIT
A. SUBTRACT THE CURRENT MARKET VALUE OF THE PROJECT LANDS FROM THE CURRENT MARKET VALUE OF SIMILAR NON-PROJECT LANDS
B. THE INTENSIFICATION BENEFIT IS THE DIFFERENCE OBTAINED IN A. ANNUALIZED OVER THE LIFE OF THE PROJECT AT THE PROJECT DISCOUNT RATE.

227IR BENEFIT EVALUATION FOR IRRIGATION SYSTEMS SUBJECT TO SUDDEN FAILURE
IF THE IRRIGATION COMPONENT IS PRIMARILY FOR REPAIR OF A SYSTEM AS A RESULT OF A SUDDEN FAILURE FROM A STORM, DEVELOP THE AVERAGE ANNUAL BENEFITS USING THE WORK ITEMS 228-238.

228IR LAND USE
THE FOLLOWING PROCEDURES ASSUME THAT THERE WILL NOT BE A CHANGE IN LAND USE. IF THERE IS A CHANGE IN LAND USE OR IF THERE ARE CROPS GROWN OTHER THAN THE TEN BASIC CROPS, A COMBINATION OF WORK ITEMS 216IR-222IR AND THE WORK ITEMS THAT FOLLOW WILL BE REQUIRED. CONSULT THE TS CONOMIST FOR GUIDANCE.

229IR DETERMINE FREQUENCY OF FAILURE
A. DETERMINE FREQUENCY OF LOSS OF SYSTEM AS A RESULT OF THE STORM
B. DETERMINE NUMBER OF DAYS TO CLEAN OUT AND RESTORE SERVICE
   1. USE IRRIGATION DISTRICT RECORDS
   2. OBTAIN INFORMATION FROM OTHER SOURCES WITH SIMILAR SYSTEMS

229IR DETERMINE MONETARY DISTRIBUTION AS A PERCENT OF ANNUAL
A. Determine land use of affected area
B. Estimate yield of area served by system
C. Estimate gross income from crops served by the system
D. Determine composite acre gross return for area served by the system

Determine net monthly irrigation requirements (crop consumptive use minus effective rainfall minus carryover)
A. MULTIPLY NET MONTHLY IRRIGATION REQUIREMENTS WATER USE PER MONTH BY THE PERCENT CROP TO DETERMINE THE TOTAL MONTHLY COMPOSITE ACRE WATER REQUIREMENTS METHOD: EHWR: PART 621-C

239IR DETERMINE VALUE OF INCH OF WATER

A. DIVIDE COMPOSITE ACRE GROSS RETURN CALCULATED IN WORK ITEM 239IR BY THE NET MONTHLY IRRIGATION WATER USE CALCULATED IN WORK ITEM 232IR METHOD: EHWR: PART 621-C

234IR DETERMINE VALUE OF WATER PER MONTH

A. MULTIPLY VALUE OF INCH OF IRRIGATION WATER CALCULATED IN WORK ITEM 234IR TIMES THE TOTAL MONTHLY COMPOSITE WATER REQUIREMENTS CALCULATED IN WORK ITEM 232IR METHOD: EHWR: PART 621-C

235IR DETERMINE VALUE OF WATER PER DAY

A. DIVIDE THE VALUES CALCULATED IN WORK ITEM 234IR BY 30 DAYS TO GET THE VALUE ADDED PER DAY FOR EACH MONTH.

236IR DETERMINE DAMAGE VALUE PER FAILURE

A. MULTIPLY THE VALUE ADDED PER DAY OF WATER LOSS FROM WORK ITEM 235IR BY THE APPROPRIATE MONTH TIMES THE AVERAGE NUMBER OF DAYS TO RESTORE SERVICE FROM WORK ITEM 226IR.

2: DETERMINE WEIGHTED DAMAGE

A. MULTIPLY THE DAMAGE VALUE CALCULATED IN WORK ITEM 236IR TIMES THE MONTHLY STORM DISTRIBUTION INFORMATION COLLECTED IN WORK ITEM 229IR.

METHOD: EHWR PAR 621-C

238IR DETERMINE AVERAGE ANNUAL DAMAGES

A. MULTIPLY THE WEIGHTED DAMAGE PER COMPOSITE ACRE CALCULATED IN WORK ITEM 237IR TIMES THE PROBABILITY OF A SYSTEM FAILURE THAT WAS COLLECTED IN WORK ITEM 229IR TIMES THE NUMBER OF ACRES AFFECTED.

239IR OTHER DAMAGES

A. IF OTHER DAMAGE OCCURS TO THE SYSTEM AS A RESULT OF THE FAILURE ADD THESE INCREASED COSTS TO THE DAMAGE TOTALS
B. IF INCREASED COSTS ARE INCURRED BY THE IRRIGATION DISTRICT TO KEEP THE REST OF THE SYSTEM OPERATING AS A RESULT OF THE FAILURE ADD THESE INCREASED COSTS TO THE DAMAGE TOTALS
C. IF THERE IS A CHANGE IN THE SYSTEM OPERATION, MAINTENANCE AND REPLACEMENT COSTS AS A RESULT OF PROJECT ACTION, THESE COSTS CAN BE INCLUDED IN THE BENEFIT CALCULATIONS.

240IR BENEFIT EVALUATION FOR IRRIGATION SYSTEM SUBJECT TO SUCTION FAILURE

IF THE IRRIGATION COMPONENT IS PRIMARILY FOR REPAIR AND REHABILITATION OF A SYSTEM AS A RESULT OF STRUCTURE FAILURES, DEVELOP THE AVERAGE ANNUAL BENEFITS USING WORK ITEMS 241-254.
THE FOLLOWING PROCEDURES ASSUME THAT THERE WILL NOT BE A CHANGE IN LAND USE. IF THERE IS A CHANGE IN LAND USE OR IF THERE ARE CROPS GROWN OTHER THAN THE TEN BASIC CROPS, A COMBINATION OF WORK ITEMS 2163R–2251R AND THE WORK ITEMS THAT FOLLOW WILL BE REQUIRED. CONSULT THE TSC ECONOMIST FOR GUIDANCE.
2- DETERMINE AREA AFFECTED

DETERMINE THE AREA AFFECTED BY THE STRUCTURE FAILURE. THE AREA COULD INCLUDE AREA ABOVE AND/OR BELOW THE STRUCTURE.

243IR DETERMINE FREQUENCY OF STRUCTURE FAILURE

DETERMINE THE FREQUENCY OF STRUCTURE FAILURE. ASSUME A UNIFORM SEASON LONG FAILURE RATE UNLESS IRRIGATION DISTRICT RECORDS SHOW OTHERWISE. MAKE THE DISTRIBUTION BY MONTHS AS A PERCENT OF ANNUAL.
A. DETERMINE WHAT STOP-GAP MEASURES WERE APPLIED AND HOW EFFECTIVE THEY WERE.
B. DETERMINE THE LENGTH OF TIME THAT THE AFFECTED AREA WAS WITHOUT WATER.

244IR DETERMINE AGRONOMIC SITUATION

A. DETERMINE LAND USE OF AFFECTED AREA
B. ESTIMATE YIELD OF AREA SERVED BY SYSTEM
C. ESTIMATE GROSS INCOME FROM CROPS SERVED BY THE SYSTEM
D. DETERMINE COMPOSITE ACRE GROSS RETURN FOR AREA SERVED BY THE SYSTEM

245IR NET MONTHLY IRRIGATION REQUIREMENTS

DETERMINE NET MONTHLY IRRIGATION REQUIREMENTS (CROP CONSUMPTIVE USE MINUS EFFECTIVE RAINFALL MINUS CARRYOVER)

27' COMPOSITE USE

A. MULTIPLY NET MONTHLY IRRIGATION REQUIREMENTS BY THE PERCENT CROP TO DETERMINE THE TOTAL MONTHLY COMPOSITE ACRE WATER REQUIREMENTS

METHOD: EUHR: PART 621-C

247IR DETERMINE VALUE OF INCH OF WATER PER MONTH

A. DIVIDE COMPOSITE ACRE GROSS RETURN CALCULATED IN WORK ITEM 244IR BY THE NET MONTHLY IRRIGATION USE CALCULATED IN WORK ITEM 245IR

METHOD: EUHR: PART 621-C

248IR DETERMINE VALUE OF WATER PER DAY

A. MULTIPLY VALUE OF INCH OF IRRIGATION WATER CALCULATED IN WORK ITEM 247IR TIMES THE TOTAL MONTHLY COMPOSITE WATER REQUIREMENTS CALCULATED IN WORK ITEM 246IR.

METHOD: EUHR: PART 621-C

249IR DETERMINE VALUE OF WATER PER DAY

A. DIVIDE THE VALUES CALCULATED IN WORK ITEM 248IR BY 30 DAYS TO GET THE VALUE ADDED PER DAY FOR EACH MONTH.

250IR DETERMINE DAMAGED VALUE PER FAILURE

A. MULTIPLY THE VALUE ADDED PER DAY OF WATER LOSS FROM WORK ITEM 249IR TIMES THE AVERAGE NUMBER OF DAYS TO RESTORE SERVICE THAT WAS DETERMINED

A. MULTIPLY THE DAMAGE VALUE CALCULATED IN WORK ITEM 250IR TIMES THE MONTHLY FAILURE DISTRIBUTION INFORMATION COLLECTED IN WORK ITEM 243IR.
Determine damages from structure failure

A. Multiply the weighted damage per composite acre calculated in work item 2511R times the number of acres affected by the failure as determined in work item 2481R.
2541r Determine PE remaining life of structure

Determine the probable remaining life of the structure in years. If the structure will fail before project implementation, assume they have been repaired in without project condition.

2551r Determine probable damage in any one year

Divide the total damages calculated in work item 2521r and 2531r by the years of remaining life determined in work item 2541r.

2561r Calculate average annual damages

Multiply the value of damages determined in work item 2551r times the appropriate interest and annuity factors to determine average annual benefits.

2571r For various PE, alternatives obtain costs for structural and nonstructural measures.

Estimates are made by planning staff based on recent installation experience.

A. Construction cost - NWSM 501.30k, EHWR 630.01
B. Engineering services - NWSM 501.30e
C. Land rights - NWSM 501.30g, EHWR 628
D. Water rights - NWSM 501.30f
E. Project administration cost - NWSM 501.30j
F. Relocation cost - NWSM 501.30k
G. Operation, maintenance and replacement - estimates made by planning staff and local sponsors based on simulated or recent orm experiences. NWSM 501.30l, EHWR 630.01b
H. Associated cost - NWSM 501.30m, EHWR 620.02
I. External diseconomies - NWSM 501.300, EHWR 630.01C
J. Nonproject cost - NWSM 501.30p

2581r For various staff alternatives estimate the following land treatment cost:

A. Land treatment measures.
B. Land
For each alternative, develop feasible treatments and land treatment practices. Designate the NED alternative and document in tabular form.

Method: Consult NTC Economist for assistance.

Assist in selection of measures for each alternative plan. Determine contribution made to component needs. Document in tabular form with appropriate narrative description and file.
261IR ESTIMATE EMPLOYMENT BENEFITS RESULTING FROM
PROJECT INSTALLATION AND PROJECT OPERATION AND
MAINTENANCE.

262IR DEVELOP DATA FOR SWB ACCOUNT.

263IR COST ALLOCATION.

264IR COST SHARING.

265IR DEVELOP NED DISPLAYS.

266IR PREPARE ECONOMIC PORTIONS OF THE
PLAN, EIS, AND DOCUMENTATION.

EMPLOYMENT BENEFITS CAN BE CLAIMED IN AREAS OF
UNEMPLOYED OR UNDEREMPLOYED LABOR.

METHOD: EHWR 627

WHERE NECESSARY DEVELOP A SOCIAL WELL BEING ACCOUNT
TO DISPLAY PROJECT EFFECTS RELEVANT TO DECISION-
MAKERS. USE CENSUS DATA AND OTHER APPROPRIATE
REFERENCES TO DEVELOP INCOME CLASS AND PERCENTAGES
FOR EACH CLASS.

USE COST ALLOCATION WORKSHEET. NWSM 501.3L,
EHWR 631

METHOD: NWSM 506.80

A. ASSIST STUDY LEADER TO PREPARE FOR PUBLIC MEET-
INGS AND REPORTS, THE NECESSARY MAPS, TABLES, AND
DISPLAYS TO CLEARLY DESCRIBE NED MEASURES AND
EFFECTS; USE DATA FROM COMPLETED WORK ITEMS ABOVE
B. PROVIDE SIGNIFICANT NED EFFECTS FOR THE FOUR
ACCOUNT TABLES AS NEEDED. (INCLUDE TIME FOR
REVISIONS AS A RESULT OF PUBLIC INPUT.)

A. PREPARE, AS ASSIGNED, ECONOMIC PORTIONS OF THE
PLAN, EIS, ENV. ASSESS. SUMMARY, I&A REPORT, ETC.
B. ASSEMBLE ALL RELEVANT ECONOMIC DOCUMENTATION
IN NOTEBOOKS (PREFERABLY ONE) SUITABLE FOR REVIEW.
REFER TO ORGANIZATION OF DOCUMENTATION CHECKLIST
IN THIS GUIDE.
C. PARTICIPATE IN RESOLVING STATE AND TSC COMMENTS