

APPENDIX B
FORMULAS FOR DETERMINING AMOUNT OF ALLOWABLE CREDIT

1. General. The amount of credit that non-Federal interests may receive under the provisions of Section 104 of the Water Resources Development Act of 1986 depends first on the value of the compatible work they have accomplished and then on the value of the local cooperation against which they may receive credit. If the compatible work is for construction which was outside the scope of the project as authorized, the costs for the compatible work for which credit is desired are additive to the original estimate of total project cost. This increases the estimated cost of basic local cooperation requirements, thus enlarging the target against which credit may be given.

2. The "formulas" for determining the amount of credit that may be allowed in the various cases are provided in the following paragraphs. TPC means the total estimate of project costs for the project as it was authorized. LERRD means the costs for lands, easements, rights-of-way, relocations and disposal areas as included in that estimate.

3. Calculations for several hypothetical examples are provided to illustrate how crediting determinations would impact on project costs and on cost sharing. For each of these examples it is assumed that the estimated total project cost (TPC) of the project as authorized is \$100.0 million. All of the elements of cost are given in millions of dollars.

4. Integral Work. For compatible work that is integral with the project as authorized [240.7(a)(1)] or compatible work that constitutes an advantageous substitution for work integral with the authorized project [i.e. substitute work, 240.7(a)(3)]:

a. LERRD 20% TPC

Credit = Value of compatible work up to 20% TPC

b. LERRD 20% TPC

Credit = Value of compatible work up to LERRD

Crediting non-Federal interests for constructing an integral part of the project or substitute work will not result in any increase in project costs. Ordinarily, the result will simply be a transfer of equivalent responsibilities between the Corps and non-Federal interests. If non-Federal interests should accomplish compatible integral or substitute work exceeding the possible credit, the Corps will be relieved of the expense of constructing an increment of the project. An example is provided below. In this example, non-Federal interests have

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accomplished integral project work amounting to 30.0 million. LERRD are less than 20% of TPC so that the maximum value of local cooperation against which they may receive credit is \$20.0 million. Since the \$10.0 for which credit cannot be given nonetheless represents useful project work, in this example the Corps would be relieved of the costs for accomplishing that much construction.

Case: LERRD 20% TPC	Basic Project	<u>Credit Example 1</u> Compatible Work 30.0
Non-Federal:		
5% Cash	5.0	5.0
LERRD	14.0	0.0
Extra cash (toward constr.)	6.0	0.0
Construction (actual)	-	30.0
Subtotal	25.0	35.0
Federal:		
Construction	75.0	51.0
LERRD	-	14.0
Subtotal	75.0	65.0
TPC	100.0	100.0
Reduction in Federal costs	-	10.0(1)

(1) The amount by which the integral or substitute work actually accomplished by non-Federal interests exceeds the requirements of local cooperation against which credit may be given.

5. External Work. For compatible work outside the scope of the project as authorized [i.e. external work, 240.7(a)(2)]:

a. LERRD 25% TPC

Credit = Value of compatible work up to 25% TPC

b. LERRD 25% TPC

Credit = Value of compatible work up to LERRD

Crediting non-Federal interests for compatible work which was not part of the project as authorized (external work) will result in an increase in project costs and an increase in net Federal costs. The costs for compatible external work for which non-Federal interests desire credit must be incorporated into the estimate of total project costs (but only to the extent that credit can actually be given). Assigned Federal and non-Federal project costs then making up the adjusted total project costs will both be greater than for the basic project. However, the

net effect will be a savings to non-Federal interests in the further costs they will have for fulfilling local cooperation requirements. The maximum amount that can be credited for compatible external work (and thus added to project costs), where LERRD = 25% TPC, follows from Credit, $C = 20\%(TPC + C)$ which reduces to $C = 0.2TPC + 0.2C$, then to $0.8C = 0.2TPC$, and finally $C = (0.2/0.8)TPC$ or $0.25TPC$ as indicated in a, above. An example of crediting in a case involving external work is provided below. In this example, as in example 1, non-Federal interests have accomplished work amounting to \$30.0 million. This work, however, was not integral with the project as authorized (it has been determined to be compatible external work), so that any part of it for which credit is given must be added to TPC. Since, in this case LERRD are less than 25% of TPC, the maximum amount that can be credited is 25% of TPC, or \$25.0 million. Adjusting TPC by this amount results in an added Federal cost of \$18.75 million (75% of the \$25.0 million increase).

Case LERRD 25% TPC	Basic Project	<u>Credit Example 2</u> Compatible Work 30.0
Non-Federal:		
5% Cash	5.0	6.25
LERRD	14.0	0.0
Extra cash (toward constr.)	6.0	0.0
Construction (actual)	-	25.0
Subtotal	25.0	31.25
Federal:		
Construction	75.0	79.75
LERRD	-	14.0
Subtotal	75.0	93.75
TPC	100.0	
Adjusted TPC		125.0
Excess of Compatible Work		5.0(1)
Increase in Federal Costs		18.75(2)

(1) This portion of the compatible external work is not incorporated in the project costs because it would be a disadvantage to the project sponsor to do so (if included, the sponsor would become obligated for an additional 5% up-front cash contribution but without any savings in other local cooperation because there would be nothing left to give credit against).

(2) This is also the measure of the net savings to non-Federal interests by virtue of crediting.

6. Combined integral and external works. For cases where non-Federal interests have accomplished compatible work, some of which is integral with the project as authorized and some of which is outside the original scope (external), determination of the allowable credit is a two step process. Work that is integral to the project is credited first. This, C1, is accomplished in accordance with paragraph 4 above. If, after this step, there remain local cooperation requirements against which credit may be given, credit for compatible external work, C2, is determinable on the following basis.

a. LERRD $20\%(TPC + C2)$

$$C2 = \text{Value of compatible work up to } 25\%TPC - 1.25C1$$

b. LERRD $20\%(TPC + C2)$

$$C2 = \text{Value of compatible work up to remaining LERRD}$$

Note that total credit, $C = C1 + C2$. Formula 6.a. is derived from $C = C1 + C2 = 20\%(TPC + C2)$. An example of crediting in a case involving both kinds of compatible works is provided below. In this example non-Federal interests have accomplished \$25.0 million in compatible work, \$5.0 of which was integral with the project as authorized and \$20.0 of which was external. The integral work is credited in the first step against the extra cash component of the original local cooperation requirements. TPC is unaffected; however, the target against which credit for the external work might be credited has been partially used up. The second step shows only the incremental effects of crediting external work. Using 6.a. the maximum credit that can be given for this work is \$18.75 million. Although other non-Federal requirements are extinguished as a result of the credit for the external work, the non-Federal 5% cash contribution increases by \$0.9375 million, say \$0.94 (5% of \$18.75). In the final step, the incremental effects of crediting the external work are added in with the values obtained in step 1.

Case: LERRD	20%(TPC + C2)	<u>Credit Example 3</u>		
		Compatible Work		
		<u>25.0 (1)</u>		
	Basic Project	Step 1	Step 2	Final
Non-Federal:				
5% Cash	5.0	5.0	0.94	5.94
LERRD	14.0	14.0	0.0	0.0
Extra cash (toward constr.)	6.0	1.0	0.0	0.0
Construction (actual)	-	5.0	18.75	23.75
Subtotal	25.0	25.0		29.69
Federal:				
Construction	75.0	75.0	0.06	75.06
LERRD	-	-	14.0	14.0
Subtotal	75.0	75.0		89.06
TPC	100.0	100.0		
Adjusted TPC				118.75
Excess of Compatible Work			1.25	1.25
Increase in Federal Costs				14.06

(1) Compatible work consisting of 5.0 integral work credited in first step of calculations plus 20.0 external work credited, to the extent possible, in second step.