

DEPARTMENT OF THE ARMY  
Office of the Chief of Engineers  
Washington, D. C. 20314

DAEN-CWR-R

Regulation  
No. 1165-2-25

30 May 1979

Water Resources Policies and Authorities  
NAVIGATION POLICY: COST APPORTIONMENT OF BRIDGE ALTERATIONS

1. Purpose. This regulation provides policies and guidelines for the apportionment of bridge alteration costs required in connection with navigation improvements recommended in reports transmitted to the Chief of Engineers for approval or submitted to Congress for authorization.

2. Applicability. This regulation is applicable to all OCE elements and all field operating agencies having Civil Works responsibilities.

3. References.

a. Section 6, Public Law 647, 67th Congress 21 June 1940, as amended (33 U.S.C. 516). (Appendix A)

b. Section 6, Public Law 89-670, Department of Transportation Act, 15 October 1966 (49 U.S.C. 1655).

c. Coast Guard reference: G-ECV-1, Truman-Hobbs Act.

d. ER 1105-2-50

e. EP 1165-2-2

4. Definitions. The following definitions are applicable to this regulation:

a. "Bridge". The term bridge means a lawful bridge over navigable waters of the United States, including approaches, fenders, and appurtenances thereto, which is used and operated for the purpose of carrying railroad traffic, or both railroad and highway traffic, or if a State, county, municipality, or other political subdivision is the owner or joint owner thereof, which is used and operated for the purpose of carrying highway traffic.

b. "Bridge owner". Bridge owner means any State, county, municipality, or other political subdivision, or any corporation, association, partnership, or individual owning, or jointly owning, any bridge, and, when any bridge shall be in the possession or under the control of any trustee, receiver, trustee in bankruptcy, or lessee, such term shall include both the owner of the legal title and the person or the entity in possession or control of such bridge.

c. "Navigable waters". Navigable waters of the United States means those waterbodies, except the territorial seas, which are subject to the ebb and flow of the tide, or are presently, or have been in the past, or may be in the future susceptible for use for purposes of interstate or foreign commerce.

d. "Alteration". The term alteration includes changes of any kind, reconstruction, or removal in whole or in part.

5. General. Public Law 647 as amended, (33 U.S.C. 511-523) commonly referred to as the "Truman-Hobbs Act" provides for the alteration of railroad and highway bridges when found unreasonably obstructive to navigation. Section 6 of that Act establishes policies for the apportionment of such bridge alteration costs. Public Law 89-670, transferred to the Secretary of Transportation from the Secretary of the Army the responsibility for administration of the Act. Pursuant to this responsibility, the Secretary of Transportation has established implementing procedures based on those previously adopted and utilized by the Chief of Engineers prior to 15 October 1966. This regulation adapts these cost apportionment procedures, found in reference paragraph 3c, to Corps of Engineers planning.

6. Basic Policies.

a. The cost apportionment principles of 33 U.S.C. 516, are applicable to the costs of bridge alterations recommended by reporting officers in the interest of navigation during preauthorization planning, including studies conducted under the Continuing Authorities Program (ER 1105-2-50).

b. The bridge owner shall bear such part of the cost as is attributable to the direct and special benefits which will accrue to the bridge owner as a result of the alteration, including the expectable savings in repair or maintenance costs. That part of the cost attributable to the requirements of railroad or highway traffic shall also be borne by the bridge owner, to include any expenditure for increased carrying capacity of the bridge, and such proportion of the actual capital cost of the old bridge as the used service life bears to the total estimated service life.

c. In general, the Federal government's participation in the cost of a bridge alteration shall be limited to providing a functional facility equal in every respect, as near as possible, to the existing facility, while also providing navigational clearances required to meet the anticipated and reasonable needs of navigation.

d. If the bridge owner or other local interests desire improvements or modifications in the new bridge design for reasons other than that required by the navigation improvement project, the reporting officer may recommend such improvements if such local interests provide necessary assurances to pay the costs apportioned to them.

e. In the case of small boat harbors and channels, the costs of bridge alterations, strictly for recreation navigation shall be apportioned in accordance with the procedures provided in this regulation. Bridge alteration costs associated with small boat harbors and channels and not apportioned to the bridge owner by the procedures in this regulation, shall be cost shared on the basis of 50 percent Federal and 50 percent non-Federal, the same as the costs of other general navigation facilities.

f. Reporting officers shall obtain letters of intent from local interests for non-Federal costs apportioned under the provisions of this regulation, in accordance with established procedures for preauthorization feasibility studies. If such letters cannot be obtained from the bridge owner, the reporting officers shall then include in their report a statement that the cost of such alterations shall be borne by the bridge owner or, in the alternative, be apportioned between the bridge owner and the Government as provided under the principles of Section 6 of the Truman-Hobbs Act (33 USC 516).

7. Coordination With the U.S. Coast Guard. In accordance with an agreement signed by the Chief of Engineers on 18 April 1973, (EP 1165-2-2 for a copy of the agreement), reporting officers shall consult with the Coast Guard on contemplated and recommended navigation improvements which involve the consideration of bridge alterations. Determination of navigational requirements for horizontal and vertical clearances of bridges across navigable waters is a responsibility of the Coast Guard. The Chief of Engineers shall coordinate preauthorization feasibility reports, which include recommended bridge alterations, with the Commandant, U.S. Coast Guard.

8. Procedures for Apportionment of Costs. This paragraph provides the procedures for apportionment of costs of bridge alterations, as established by the U.S. Coast Guard (reference para 3c) and adapted for use in Corps planning and construction programs. A sample apportionment of the cost of a hypothetical bridge alteration is provided in Appendix B.

a. Calculate the Total Estimated Cost of Bridge Alteration. The total estimated cost, to be apportioned by these procedures, includes the cost of all necessary appurtenances required to complete the alteration for use by both highway and railway traffic, including engineering, design and inspection.

b. Determine the Salvage Value of Bridge to be Altered. The salvage value represents the worth of the materials in the old bridge which may be used for scrap or for other purposes. The value will vary depending on the intended use of the materials.

c. Determine Direct and Special Benefits.

(1) Removing old bridge. The bridge owner shall pay a share of the removal cost computed as that part of the removal cost that the used service life bears to the total estimated service life. The share of the bridge owner, thus computed, represents an obligation incurred by the owner now by reason of the needs of navigation which otherwise would not have to be met until the bridge had reached the end of its useful life. Accordingly, the present worth of the amount is computed deferred over the unexpired life. The discount rate to be used in the present worth computation is that established by the Water Resources Council, current at the time of the study.

(2) Fixed charges. A fixed charge such as engineering, design, and inspection costs, realtor and counsel fees, and the bridge owner's administrative expenses is an undistributed cost, shared in the ratio that each party shares in the cost of construction less fixed charges. In computing the bridge owner's share of the fixed charges, all other financial liabilities assigned to the bridge owner shall be included in the computation.

(3) Contribution. If a third party should be involved in a bridge alteration project, such as a party which might benefit from some reasonable modification beyond the needs of navigation and the needs and desires of the bridge owner, that party would be responsible for the incremental costs of such further modification, and such costs would not enter into the apportionment between the bridge owner and the Federal Government.

(4) Betterments. Items desired by the bridge owner, but which have no counterpart in the old bridge or are of higher quality than similar items in the old bridge, will be included under this heading. Items considered to fall within this category are listed below. It is intended this list serve as a guide to indicate the types of items that may be considered betterments. The cost of such items will be borne by the bridge owner.

(a) Access roads.

(b) Concrete or stone finish of embankment slopes instead of seeding.

(c) Water proofing and skid-resistant epoxy finish of masonry surfaces.

(d) Steel or concrete spans instead of timber trestle.

(e) Ballasted deck instead of open deck.

(f) Trainman's walkways and sidewalks.

(g) Elevators costing more than stairways.

(h) Materials of greater thickness or heavier weight than supported by design requirements.

(i) Exotic materials for machinery and operator's house, including tinted and insulated windows.

(j) Heaters and insulation in the machinery house.

(k) Operator's house furnishings, air-conditioners, water coolers, and medicine cabinets.

(l) Hydraulic jacks for counterweight support.

(m) Fourth coat of paint, and exotic paint systems.

(n) Brass pipe and high alloy steel conduits.

(o) Floodlights and metallic vapor arc lights.

(p) Spare parts.

(q) Lubricants and lubrication equipment, and tools in excess of minimum requirements.

d. Determine Expectable Savings in Repair or Maintenance Costs.

(1) The provisions of any features that would reduce annual maintenance costs of the altered bridge, such as a wider navigation span eliminating the requirement for protection works, reducing the overall length of the bridge by fill in lieu of a trestle, or replacing two bridges with one bridge, will be included under this heading. The bridge owner should bear the increased annual maintenance cost that will accrue as a result of providing any increased loading and width desired by the bridge owner or attributable to the requirements of railway or highway traffic. Since 33 U.S.C. 516 does not mention bridge operating costs, any increase or decrease in such costs shall not be included in the cost

of alteration to be apportioned. The bridge owner's obligation is computed by capitalizing the estimated annual savings at the same rate of interest used in paragraph 8c(1) above.

(2) Expectable savings in repair costs is that amount which the bridge owner will not have to pay to restore his bridge, which may be in a damaged condition or may be dilapidated, since the bridge is being altered or removed as a part of the contemplated navigation improvement.

e. Estimate Costs Attributable to Requirements of Railway and Highway Traffic. Items desired by the bridge owner to meet the requirements of railway and highway traffic, but which have no counterpart in the old bridge, will be included under this heading. Items considered to fall within this category are listed below. This list does not contain all such items, but it is intended to serve as a guide in determining which items might fall within this category.

(1) Increased navigational clearances for the benefit of land traffic.

(2) Wider roadbed.

(3) Additional traffic lanes or track.

(4) Medians and wider traffic lanes.

(5) Increased train clearances and spacing of tracks.

(6) Larger cross and bridge ties.

(7) New and heavier rail and expansion joint devices.

(8) Additional signaling and communications systems.

(9) Additional right-of-way.

f. Estimate Expenditure for Increased Carrying Capacity. The bridge owner is required to pay the difference in cost between a bridge meeting the navigation clearance requirements with the same live loading capacity as the old bridge and new or altered bridge having any increased live loading capacity desired. The cost of increased live loading capacity will be based on the estimated cost of the new or altered bridge with unit prices applied to the quantity of materials estimated for a hypothetical bridge with the same live loading as the old bridge, but with the increased clearances required by the navigation improvement. The live loading of the new or altered bridge should be compared with the live loading of the old bridge, based on normal working stresses without overstress, overload, or reduction of safety factor.

g. Determine Value of Expired Service Life of Old Bridge.

(1) Section 6 of the Act provides, among other things, that the bridge owner shall bear such proportion of the actual capital cost of the old bridge or such part of the old bridge as may be altered or rebuilt, as the used service life of the whole or a part bears to the total estimated service life of the whole or such part. Guide service life figures have been obtained from retirement curves based on mortality statistics, which represent an attempt to consider economic causes of retirement in addition to physical causes.

(2) For railroad bridges service life, figures of 100 years for substructure, 70 years for superstructure, 37 years for treated timber, 35 years for automatic signals, 20 years for main rail, 30 years for siding rail, and 20 years for crossties and bridge ties are considered to be reasonable and will be used in computing the bridge owner's liability. The service life of the operator's house and machinery house, including machinery, is considered to expire with the removal of the superstructure. For timber structures which have been in existence for more than 50 percent of their estimated service life, the expired service life is held usually at 50 percent providing the structure has been adequately maintained and is in a good state of repair.

(3) The service life of highway bridges, except for certain long span bridges, is usually limited by obsolescence as well as structural deficiency and deterioration. Obsolescence may be due to insufficient capacity for heavier loads and greater volume of traffic than the bridge was originally designed for, safety requirements, and location. Superstructures and pile bents are considered to have a service life of 50 years. Masonry substructure which could be reused in the renovation of a bridge is considered to have a service life of 100 years.

(4) The foregoing service life figures are not to be used arbitrarily, but as a basis for a fair judgment of the service life considering all other factors that pertain in any particular case.

FOR THE CHIEF OF ENGINEERS:



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2 Appendixes  
APP A - Sec 6, PL 647  
as amended (33 USC 516)  
APP B - Hypothetical Example  
of Cost Apportionment