

7. **Access Roads and Highway or Railroad Relocation.** The Introduction (Chapter 1) for these design data collection guidelines contains additional information concerning: preparing a design data collection request, design data collection requirements, and coordinating the design data collection and submittal. The following data and information are required for feasibility design.
- A. **General.** On some projects it is possible that the cost of relocating railroads and highways and constructing access roads will exceed the cost of the dam or other features; therefore, it is essential that the scope and cost of the relocation work be fully documented in the feasibility study. The future impact of recreation and environment should also be given due consideration.
- B. **Design Standards:**
- (1) **Relocated Roads and Highways.**
- (a) Feasibility designs shall be based on construction to current local and/or county codes and standards where the traffic count and other considerations show justification.
- (b) Replacement in kind shall be used where the existing roadway is equivalent to current local or county codes and standards or where there is no justification for upgrading to current standards.
- (c) Standards higher than current local or county codes and standards shall be used only when the owner will pay the difference in costs due to the higher standards, or when due to recreation needs or special considerations, nonreimbursable funds are appropriated by Congress to cover the higher standards.
- (2) **Access Roads.** Feasibility designs shall be based on the current local and/or county codes and design standards with modifications for unusual circumstances such as need for higher standards due to magnitude of the project, special haul problems, recreation needs or that the access will be used as a recreational facility, etc.
- (3) **Recreation Roads.** Relocated roads, highways, or access roads intended for recreation purposes, or which will contribute to such purposes, may be constructed to higher standards with nonreimbursable recreation funds under project specific authorizing legislation or under the Federal Water Project Recreation Act of July 9, 1965, as amended by Title 28 of Public Law 102-575, but only after a non-Federal managing partner has agreed to cost share development and to operate and maintain the constructed facilities. In the absence of specific authorizing legislation, a non-Federal managing partner as stated above, or policy stating otherwise, Reclamation is limited to “minimum basic” facilities, as stipulated in Public Law 89-72. It is necessary that any roads intended for such use be

fully identified and described, including proposed standards, in the feasibility designs and in the feasibility report submitted to the Congress.

- (4) **Railroads.** Feasibility designs shall be based on replacement in kind, with consideration given to higher standards only in the event of unavailability of certain materials, or at owner's expense.

C. **General Map Showing:**

- (1) A key map locating the general map area within the State.
- (2) The proposed road or railroad alignment.
- (3) Existing towns, highways, roads, railroads, public utilities, townships, range, and section line.
- (4) Sources of natural construction materials and disposal areas for waste material.
- (5) Existing or potential areas or features having a bearing on the design, construction, operation, or management of the project feature such as: recreation areas; fish and wildlife areas; building areas; areas of cultural sensitivity; and areas of archeological, historical, and mining or paleontological interest.

D. **Topographic Map.** A topographic map or strip topography shall be provided showing alignment of facility and location of major structures. A scale of 1 inch equals 400 feet and a contour interval of not over 5 feet shall be used unless relief is such that a contour interval of less than 5 feet is necessary to adequately depict the topography.

E. **Foundation Data.** Sufficient data on foundation conditions must be included to determine the type of excavation that will be encountered and to delineate possible unstable areas. Logs of all auger holes, test pits, and results of materials testing that are applicable and available will be included.

F. **Construction Materials Data Including:**

- (1) Source location and estimated available quantities of roadway and surfacing material, ballast, concrete aggregate, and any other construction materials required in large quantities, including the mitigation features required to restore borrow areas, etc.
- (2) A description of above construction materials that generally defines their character and acceptance for the intended use.

- (3) Information on firms within practical hauling distance from the site that provide a commercial source of construction materials. Include service history and photographs of these sources.
- (4) Requirements concerning stockpiles and suggested permanent stockpile locations.

**G. Operating Data:**

- (1) For railroad: Limiting grades and curvature, load limits, other operating limitations or requirements, and typical roadbed section, showing depth and type of ballast, weight of rail, size, spacing, and type of tie.
- (2) For railroad: Information on operating facilities such as communication or signal lines.
- (3) For highways: Design speed, limiting grades and curvature, load limits, and typical roadway section, showing width, thickness, and type of surfacing if other than those specified in local and/or county codes and standards.

**H. Miscellaneous Data:**

- (1) Provide a description of bridges and other major structures with appropriate local and/or county codes and design standards.
- (2) Provide a list of number, type, and size of required cross-drainage structures. For major structures include hydraulic requirements.
- (3) List any public use areas along or adjacent to any potential alignments.

**I. Cost Data.** Any other pertinent cost estimates that have been prepared (either by Reclamation or the owner of the facility). Include a description or outline of estimating methods and data used.

**J. Environmental Considerations.** Highways and railroads should be located to minimize impacts to environmental resources. Design data should include a brief description of environmental resources that could be affected by the proposed location. Photographs, if available, are most helpful in describing the environmental setting. The following items should be considered in preparing the design data:

- (1) Cultural (historical, archeological, architectural, and paleontological) resources along or adjacent to any potential alignment.
- (2) The need for restoring borrow areas, and reseeding cuts and fills.

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- (3) The need for erosion and sediment control.
- (4) Landscaping requirements.
- (5) The need for game protection, including crossings, fencing, etc.
- (6) Any threatened and/or endangered critical habitat in/or adjacent to potential alignments.