

- 3. Visitors Centers.** 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. Much design data prepared for previously designed features may be available and should be utilized for the design of the visitor center. Communication between visitor center designers and project personnel is essential in arriving at adequate design data.

A. Design Narrative:

- (1) Discuss the determination of the need for public visitation.
 - (a) Uniqueness or informational/educational aspects of the project which would merit public visitation.
 - (b) Information to be related to the public for other interested agencies.
- (2) Visitation projections basis.
 - (a) Accessibility.
 - (b) Visitor center density within 100 miles.
 - (c) Recreation facility density within 100 miles.
 - (d) Visitor use of similar facilities within project area, river basin, or Region.
 - (e) Visitor interest in project during construction phase if applicable.

B. Overall Planning:

- (1) Relationship between the visitor center and planned recreation facilities.
- (2) Accessibility of potential or selected visitor center sites to highways and project features.
- (3) Complementary facilities to be located within or near other project features such as information kiosks, overlooks, tour routes, signage, exhibit spaces within structures, etc.
- (4) Community or other use of portions of the building during hours when it is not open for public visitation.

C. General Requirements of the Visitor Facilities:

- (1) General outline of interpretive plan including suggested physical requirements for presentation of information.
- (2) Overall space requirements for above.
- (3) Estimated number of people to be accommodated at one time.
- (4) Parking facilities.
- (5) Offices and/or other associated space requirements.
- (6) Concessionaire considerations.
- (7) Anticipated hours and months of operation.
- (8) Number of operating and support personnel required.
- (9) Description of existing project fire protection and security plans which will be applied to this feature, along with any specific requirements for this visitor center.
- (10) Special heating, ventilation, and air conditioning requirements for artifact storage and preservation, and laboratory ventilation and exhaust.

D. Physical and Climatic Data:

(1) General Map Showing:

- (a) A key map locating the general map area within the State.
- (b) The structure site.
- (c) Existing towns, highways, roads, railroads, public utilities, transmission lines, substations, townships, range, and section line.
- (d) Locations of access road and sites for required construction facilities.
- (e) Locations of borrow areas for natural construction materials and disposal areas for waste excavation.

- (2) Availability or Accessibility of Public Facilities or Utilities Such As:** Water supply, sewage disposal, telephone utility, fire protection services, natural gas supply, and electric power for construction and operation. Provide names and addresses of utility suppliers. Also provide gas and electric rates.

- (3) **Climatic and Physical Site Conditions.** Include items that will affect design, construction, and operation and maintenance such as: amount, rate, and distribution of rain, snow, and hail; heating and air-conditioning design temperatures; maximum wind velocities and their directions; probability of excessive dust or sand; local frost depths; ground water presence and depths; vegetation to be cleared or preserved including kinds, sizes, and density of growth. Show exact locations of existing utilities and/or other facilities on site which must be removed, avoided, or where special criteria is provided for interference and restoration.
- (4) **Photographs.** Color photographs of the site including surrounding construction features and pertinent geologic and topographic features of terrain. Include aerial photographs if available.
- (5) **Survey Control.** Minimal field surveys should be done to obtain horizontal and vertical control. Use of any existing coordinate system or vertical control system is acceptable, but tying to the State or national system is recommended where practical.
- (6) **Detailed Site Topography.** A topographic map covering an area sufficient to include all practical arrangements of the structure, access, rights-of-way, survey control, existing manmade features, vegetation, and locations and identification of drill holes, test pits, etc., where not included on separate maps. The scale and contour interval should be determined on the basis of the size of structure to be built and the complexity of the terrain. A scale of 1 inch equals 50 feet and contour interval of 2 feet will generally be suitable.

E. **Foundation Data:**

- (1) **General Engineering Requirements.** The amount and detail of foundation data required will vary with the site and with the type of construction. The guiding criteria should be to provide sufficient data to allow the designer to determine the type of foundation required for the structure and to identify major foundation problems. Adequate foundation data may be obtained for small structures from an inspection of surface conditions and one or two exploratory holes to determine foundation conditions some distance below the footings of the structure. Maximum use should be made of existing data. For larger structures and/or for more complex geological areas a field conference should be held to determine the geologic investigations program required.
- (2) **Geological Data.** The following list of geologic design data provides general guidelines for the collection and reporting of geologic information for this type of facility. The TSC geologic and geophysical staff will provide necessary assistance and guidance in the gathering of these design data.

- (a) Compilation, summary, and reporting of Reclamation and non-Reclamation geologic information on the area, with attention being paid to the sequence of explorations and historical geologic events.
- (b) Surface geologic map showing location of explorations. Locations of all existing explorations should be indicated by coordinates or stationing of the permanent survey control system for the facility.
- (c) Factual narrative description of surficial deposits with attention being paid to engineering geologic matters, such as swelling minerals, presence of gypsum, and other sulfates, caliche erodibility (see *Earth Manual*).
- (d) Factual narrative description of bedrock with attention being paid to engineering geologic matters such as swelling minerals, presence of gypsum, and other sulfates; and to depth, weathering, joints, faults, and other planes of weakness.
- (e) Photographs, preferably in color, of representative or particular geologic conditions.
- (f) Selected determination of engineering properties of surficial deposits and bedrock.
- (g) Summary and data of exploration geophysical surveys (seismic, resistivity, etc.).
- (h) Determine ground water conditions with attention being paid to water levels and their seasonal fluctuation occurrence of unconfined and confined aquifers, water producing capabilities, chemistry, and subsidence.
- (i) Logs of explorations. An effort should be made to run appropriate borehole geophysical logs in appropriate drill holes.
- (j) Evaluation of landslide, snowslide, and rockfall conditions.
- (k) Determine age of faulting in vicinity, especially if suspected to be late Pleistocene or Holocene, to assist in the determination of the maximum credible earthquake by the Engineering Geology Group, TSC.
- (l) Document past, present, and possible future petroleum water, and mineral extraction operations in vicinity.
- (m) Determine geologic conditions which may affect construction methods such as, boulders on ground surface, marshes, drilling

conditions, and stability of grout or footing holes, ground temperatures, gases. Any potential surface water runoff problems should be brought to the attention of a regional hydrologist.

F. Corrosion Survey:

- (1) In situ electrical resistivity measurements of geologic materials in the area of construction. Additional measurements should be made in the areas where there is a pronounced change in type of geologic materials, drainage, and/or moisture conditions.
- (2) Performance history of materials of construction that have been used in the area.
- (3) List of structures in the vicinity of (within ¼ mile) the proposed structure and appurtenant features. Determine if buried structures in the vicinity have corrosion protection and, if so, the type of corrosion protection.
- (4) List location, output, and purpose of the direct-current sources in the earth situated within ¼ mile of the proposed structure and appurtenant features. If the purpose of the direct current is for cathodic protection, describe the structure protected and its location.
- (5) Chemistry of geologic materials, ground water, and/or product water.

G. Construction Materials Data Including:

- (1) Inventory of available impervious and pervious embankment materials and rock for riprap and rockfill. Location of and distance to borrow areas and approximate quantities available.
- (2) Information on concrete aggregates. (See *Concrete Manual*)
- (3) Information on sources and character of acceptable road surfacing materials. Consider required excavation material as a possible source.
- (4) Data on commercial concrete plants within practical hauling distances from the structure site.
- (5) References to results of sampling and analysis of materials including previous tests and photographs of sources.
- (6) Report alkali conditions in soil and water which might affect the choice of sulfate resisting cement.
- (7) Statement of availability of timber for structural work and lumber for other purposes.

- (8) Environmental impacts associated with removing or obtaining construction materials.
- (9) Requirements concerning permanent stockpiles and suggested permanent stockpile locations.
- (10) Information including catalogues on firms, within practical hauling distance from the site, manufacturing precast concrete products and brick or other masonry units.

H. **Environmental Considerations.** Design data should include, as a minimum, the environmental commitments listed in the NEPA compliance document that would affect the design and a brief description of the setting and the resources that would be affected by the proposed visitor center.

The following items should be included:

- (1) Cultural (historical, archeological, architectural, and paleontological) resources in the area of the plant.
- (2) The need for blending the structure with surroundings. Include reasoning for this suggested handling.
- (3) Landscaping and other special environmental requirements.
- (4) A brief listing of the area's native and/or commonly used plant materials.

I. **Electrical Data.** Data listed below will be required to initiate design. The data furnished should be sufficient to permit designers to complete the basic design (single-line diagram) for the visitors' center. After designs have progressed enough to develop details of electrical system needs, designers will prepare a list of additional data required to complete final design of electrical installation.

- (1) Names and telephone numbers of electrical power suppliers and contacts within those organizations.
- (2) Location of point where connection to power supply will be made.
- (3) System voltage at which power will be supplied, number of phases, and whether service will be overhead or underground.
- (4) Discuss requirements for an alternate power source. If an alternate supply is required, indicate:
 - (a) If required by State or local authority.
 - (b) If source should be an engine-generator.
 - (c) If a threat to life or property will result if normal power supply is lost.

- (d) Loads requiring service from alternate source.
- (5) Requirements for remote monitoring of conditions at the facility, such as fire protection or security systems. Discuss location of remote station, and items required to be monitored.

J. Miscellaneous Data:

- (1) Heating, ventilating, and air-conditioning system requirements. Preference for evaporative cooling or refrigeration cooling for the main plant/building area. Preference for electric or gas heat utilizing propane/natural gas.
- (2) Is natural gas available at the site?
- (3) Noise restrictions at the site.
- (4) Requirements for emergency engine generator set for the plant/building. Systems to be connected to the standby emergency engine generator set.
- (5) Anticipated engine generator usage for sizing the fuel storage tank.
- (6) Preferred fuel (diesel/propane/natural gas) for the engine generator set.
- (7) Required water quality analysis to determine the materials of construction for the plant piping systems. Types of materials of construction for existing piping systems conveying water. Have there been any corrosion problems with existing systems?
- (8) Types of water supplies available at the site for plant/building fire suppression and other water usage requirements.
- (9) Preferences concerning the method of joining the piping components for the various plant/building auxiliary mechanical systems. Are victaulic type grooved coupling connections acceptable?
- (10) Types of hazardous materials on the existing piping systems (i.e., lead based paint, asbestos).

K. Site Security. Many Reclamation projects may require a security risk assessment. The need for a site-specific security risk assessment should be considered for feasibility designs where an assessment may impact the field cost estimate and for specifications designs. Specific issues to consider are contained in Section 14 of Chapter 7 – Site Security and Public and Worker Safety. If assistance is required to determine specific design data needs, contact the Office of Security, Safety and Law Enforcement. Where design data and designs include

site-specific security assessment, compliance with Reclamation Manual DM Part 444 – Physical Protection and Facility Security, Chapters 1 and 2 is required.