

- 13. Recreational Facilities.** 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.

This paragraph lists data required for design of recreation facilities. Small scale site development, such as a single campground loop, would need much of the data listed below but only for the area encompassing and immediately surrounding the project site.

A. General Map(s) Showing:

- (1) A key map locating the general map area.
- (2) The general project area and the area immediately surrounding the project within 2 or 3 miles.
- (3) Any other recreation areas in the general vicinity and facilities available there.
- (4) Restrictions to land uses, such as easements and rights-of-way.
- (5) Land ownership boundaries and legal jurisdictions. Indicate ownership by agency acronym or private land with “private.”
- (6) Land uses in general terms, with private land labeled “private.”
- (7) Name of agency that manages Reclamation land.
- (8) Locations for borrow areas, storage of construction materials, and sites for stockpiling of topsoil.
- (9) Limits of construction or physical boundaries of the proposed site development.

B. Topographic Map Showing:

- (1) Topography covering an area large enough to include all potential site development. The extent of the topography should include the access road and the probable site entrance area. Contours should be at 2-foot intervals or 1 foot intervals if the site is very flat. The data should be in the form of an electronic drawing file which can be used to create a base map. All points contained in the drawing file should have z axis values that correspond to onsite elevation.
- (2) Underwater contours with the elevation referenced to upland elevation, if needed for marina design.

- (3) Surface drainage features such as streams and ravines and any existing bridges or culverts.
- (4) Existing built site features, such as roads, parking, turnarounds, buildings, structures, power lines, buried utility lines and tanks, campgrounds, leach fields, picnic areas, and marinas.

C. **Survey Data:**

- (1) **Survey Control.** Permanent horizontal and vertical survey control should be established at the earliest possible time. A coordinate system on a true north-south grid should be established with the origin located so that all of the features (including borrow areas) will be in one quadrant, and so that the values of the coordinates for any major development are widely separated numerically. The coordinate system should be related to a state or national coordinate system, if available. All preceding survey work should be corrected to agree with the permanent control system; and all subsequent survey work should be based on the permanent control. All surveys should be tied to the established coordinate system at each construction site.
- (2) **Updated Conditions.** A survey of information needed specifically for small scale design. A new survey may be required which shows site conditions which have changed since the last survey was made. The survey should show contours at a 1 foot interval, with critical spot elevations at edges and corners of existing structures, elevations along drop-offs, swales, and changes in the topography, pipe inverts, locations of drains, guardrails, edges of pavement, trees or other vegetation to save, and any site features that impact small scale design or construction.

D. **Narrative and Photographic Description of Site:**

- (1) **Narrative Description of the Project Area.** This should be a brief description of the surrounding area, the nearest population center, its size, and the nature of the surrounding context. A description of existing recreation facilities, capacity, level and season of use, condition of structures and roads.
- (2) **Color Photographs of the Site.** All photos should be keyed to the site topographic map. Photos should show problem or hazardous areas, location of proposed facilities, location of possible access points to the site from existing routes, and close ups of existing features such as buildings or structures. These photos should also show favorable offsite views which should be preserved and considered when siting buildings. Photos should also be taken of unfavorable onsite features which should be

screened from view or otherwise considered when siting facilities. Photos should show the condition of existing roads and buildings, if possible.

- (3) **Aerial Photos.** Color if possible, 8- by 10-inch size, at a scale which allows discerning the nature of the vegetation. The photographs should be taken between 11 a.m. and 2 p.m. to avoid showing the site in shadow. Key the photos to the topographic map.

E. **Site Aesthetics Information:** This information is obtained from a site analysis, and should include:

- (1) Favorable views to incorporate.
- (2) Objectionable views to be screened, if possible.
- (3) Significant sight lines onto the site from offsite. This would be important if there were a need to locate the development where it would not be seen from certain vantage points offsite.
- (4) Major site features of interest to be developed into the design as focal points.
- (5) Loud or objectionable sounds which need to be physically blocked, if possible.
- (6) The need for blending buildings and structures with the surroundings.

F. **Biological Data:**

- (1) **Vegetation.** Narrative description of site vegetation, particularly density and distribution. List of dominate species present: grasses, forbs, shrubs, and trees to be used in the site revegetation plan. List of threatened, endangered, and sensitive species in the immediate area of development. Map of dominate plant associations and threatened and endangered species.
- (2) **Wildlife.** List of threatened and endangered species that have migration routes, critical habitat, or outstanding habitat in the immediate area. Map of any species' migration patterns, critical habitat, and outstanding habitat that occurs on or adjacent to the project site. List of animals which may pose a danger to users or which may require special accommodations in site design, for example bears or moose.
- (3) **Wetlands.** Map of the outline of the wetland showing seasonal fluctuation of the water surface level and a narrative description of the plant associations within the wetland.

G. Geologic and Soils Data:

- (1) Depth to bedrock, ground water, and frost line for siting underground utility lines, buried tanks, and foundations.
- (2) Location of underground water and springs which may impact location or construction of facilities such as campgrounds and roads.
- (3) Evidence of seasonal or occasional event of flooding over the banks of local streams and notations or map showing where the water goes.
- (4) Soil survey and map of soil texture for determining susceptibility of soils to erosion, and suitability of soils for building foundations, roads, trails, and leach fields.
- (5) Areas of existing erosion, subsidence, or high soil moisture, which should be avoided.
- (6) Seismic stability in areas prone to earthquakes.
- (7) Evaluation of potential landslide, snowslide, and rockfall areas.
- (8) Availability of potential fill materials on site and nearby, and a description of the type of materials.

H. Flood Plain Data: Map of 5-, 10-, 25-, and 100-year flood plain levels. Buildings and campgrounds within frequently flooding areas should be avoided.

I. Weather Data: Direction, intensity, seasonality, and daily fluctuations of wind. Probability of excessive blowing dust or sand. Seasonality, amount, duration, and intensity of precipitation. Seasonal and daily fluctuations of temperature.

J. User Data:

- (1) Anticipated user activities and needs.
- (2) Demographics of user: age, socioeconomic group, families or individuals, physical abilities, recreation activity preferences.
- (3) Length of stay – a few hours, overnight, few days.
- (4) Destination or stop-over site.
- (5) Seasons of use and differing uses by different users as the seasons change.
- (6) Number of users expected at one time to use the site for an average weekend; for a holiday.

- (7) Type of equipment the user is expected to bring along and the spatial/physical site requirements to accommodate that equipment.
- (8) Utility requirements of the user (water, electricity, sewer).

K. Utilities:

(1) **Electricity:**

- (a) Source of electricity: location of the point where the connection to power utility will be made, the capacity, and type-single phase/three-phase.
- (b) Location of existing transformers.
- (c) Estimated electrical peak load.
- (d) Routes of proposed distribution lines and whether they are to be overhead or underground.
- (e) Name and location of local utility company.
- (f) State and local code requirements.
- (g) Feasibility of applying solar collectors or adaptors to buildings.
- (h) Feasibility and expense of generating power onsite with wind power.

(2) **Potable Water:**

- (a) Source of existing potable and nonpotable water.
- (b) Routes and sizes of existing pipes.
- (c) Proposed distribution routes of new pipes.
- (d) Available pressure (lb/in²) and flow (gpm).
- (e) Location of potential or existing wells, treatment facilities, and holding tanks.
- (f) Name and location of local utility company.

(3) **Storm Water Runoff:**

- (a) Codes and restrictions which affect site development.
- (b) Impoundment requirements in quantity and duration.

(c) Conditions of the drainage plan, if applicable.

(4) **Sewage Disposal Systems:**

(a) **Pull-away systems:** spatial and access requirements of the pumping trucks which will service the vault toilet buildings and any retaining tanks, including turning radii and road gradient limitations.

(b) **Onsite disposal systems (primary treatment plus a leach field):**

- Necessary slope, soil, and spatial quantity requirement.
- Spatial requirements for future expansion of the system.
- Requirements and restrictions of local codes.
- Site environmental restrictions.
- Environmental compliance requirements for discharging to local streams (if that is an option).
- Spatial and access requirements of the vehicles or equipment which will be needed to service the treatment system.

(5) **Gray Water:** Opportunities to use gray water for landscape irrigation or in other nonpotable ways, considering code and environmental restrictions.

L. **Roads Data:**

(1) **Existing Roads.**

- (a) Location and vehicle capacity of existing access route to site.
- (b) Road and shoulder widths, depths, and materials.
- (c) Direction of travel.
- (d) Physical limitations to primary road, such as its condition, grade, and turning radii.

(2) **Proposed Roads:**

- (a) Turning radii required for roads and parking lots, based on vehicles which are anticipated to use the facility.
- (b) Wheel loading of anticipated vehicles which will use the facility.

- (c) Need for a corrugated metal or plastic pipe at road crossings.
 - (d) Need for low water crossing.
 - (e) State and Federal highway regulations.
 - (f) Width, depth, length, and materials needed for new roads.
 - (g) Proximity of source of base course materials.
- M. **Program Requirements:** From a resource management plan or other planning effort.
- (1) Desired level of development, for example: urban, rural, semi-primitive.
 - (2) Numbers and locations of proposed facility elements, for example: numbers of pull-through sites with shade shelters; number of shade shelters and group use areas; number of sites with full utility hookups; number of day-use sites.
 - (3) Carrying capacities of the particular site, for example: proposed density of campsites or maximum number of boats in the marina and on the reservoir.
 - (4) Facilities that need to be replaced or upgraded to meet Reclamation and local codes and standards.
 - (5) Outlines of restricted use areas, such as non-motorized areas.
 - (6) Requirements for interpretation and the desired associated facilities, such as kiosks, bulleting boards, or signs. This includes interpretation for accessibility features as required by American with Disabilities Act Accessibility Guidelines (ADAGG) and the Uniform Federal Accessibility Standards (UFAS).
 - (7) Special events and peak use demands.
 - (8) Site specific issues relative to development that were identified during the planning stage.
- N. **Accessibility Requirements:** Specific construction details and layout criteria which are required for universal accessibility under UFAS and ADAAG.
- O. **Concessionaire's Requirements:**
- (1) Type of equipment the user is expected to rent onsite from the concessionaire and the spatial/physical site requirements and location(s) to accommodate the storage and servicing of that equipment.

- (2) Environmental compliance requirements of concessionaire's operation that effect site design.
- (3) Conditions of the Commercial Services Plan.
- (4) Utility requirements of the concessionaire, e.g. gas and phone

P. Facility Operations and Maintenance Requirements:

- (1) Fee collection methods and location requirements for facility security. Methods to achieve security.
- (2) Requirements to close off one part of a recreation area from another.
- (3) Requirements for vandal-proofing facilities and types of construction materials needed or preferred. Need for lighting at particular points and whether the lighting is for safety or security.
- (4) Requirements for fire safety, such as the need for fire trucks and ambulances to traverse the site. Need for emergency vehicles to be able to reach facilities and acceptable limits of access.\
- (5) Roads and buildings needed for general maintenance of the area and their associated spatial and functional requirements.

Q. Revegetation and Landscaping Needs:

- (1) Availability of nursery grown plants of the desired tree and shrub species. Availability of grass and forb seeds of the desired species.
- (2) Practicality of collecting plants from project site to be used in revegetation plan.
- (3) Cost effectiveness of collecting versus purchasing large trees and cacti.
- (4) Irrigation needs, based on water regime requirements of the plants that will be used, and local growing conditions.
- (5) Plant hardiness zone of project area.
- (6) Number of days of frost in the area of the project site.
- (7) Source of water for irrigation.
- (8) Identify trees/vegetation which may or may not be removed.
- (9) **Need to Stabilize Eroding Stream Banks or Lake Shores.** Exact location and nature of the erosion; the desired treatment, if known;

whether it is hard surfacing or live material. List of sources of native plant materials which are growing nearby, if known, which can be used as a source for cuttings.

- (10) Need for design of erosion control plan including silt fences, temporary seeding, erosion control blankets, etc. during construction to mitigate soil erosion and potential siltation of streams and water bodies.

R. Dock and Marina Data:

- (1) Site topography covering an area large enough to include all potential marina development sites, with contours at 2-foot intervals or 1-foot intervals if the site is very flat.
- (2) Underwater contours with the elevation referenced to upland elevation.
- (3) General slope and landform characteristics required for good marina development.
- (4) General characteristics of land and water at site.
- (5) Site exposure and prevailing winds.
- (6) Location of vertical and horizontal obstructions in the proposed marina development area.
- (7) Location, proximity, and size requirements of parking, including vehicles and vehicles with boat trailers.
- (8) Condition of roads and their suitability for use by vehicles towing boat trailers.

S. Miscellaneous Data:

- (1) Code restrictions, snow and wind loads, or environmental requirements related to specific activities that will occur at the site.
- (2) Reservoir surface water elevations – at season's highest, average summer pool, and at season's lowest – for use in designing fishing and boating facilities.
- (3) General condition of existing buildings, roads, recreation facilities, utility systems.
- (4) Shooting range requirements.
- (5) Description and map of archeologically significant areas to avoid.

- (6) Need for an environmental permit, such as for compliance with Sections 401 and 404 of the Clean Water Act, if construction is anticipated to impact a wetland.
- (7) Comments on any ecological, aesthetic, or other environmental aspects peculiar to this location that would affect layout or conceptual design.
- (8) Unusual local pest that would influence type of construction materials and the selection of plant materials to use in planting plans.
- (9) Cultural (historical, archeological, architectural, and paleontological) resources in the area of the recreation facility. There may be a need for a preliminary examination of the site for artifacts if the design site is within areas of known archeological importance. This is because the artifacts can be excavated or the site design modified to avoid adverse impact to the artifacts.