

## CHAPTER 2

### The Base Camp Development Planning Process

2-1. Introduction. The BCDP process describes the method by which base camps are located, designed, constructed, and eventually closed. The process, though generally linear, is not an absolute. There are many variables, such as tactical and political restrictions, as well as engineering, resource, and funding constraints that impact the process. Some of the steps listed in the process may, or must, also occur concurrent with other steps. The BCDP process is evolutionary and is not a lock-step process. It requires constant revision and coordination. *Base camp development planning* is a time-sensitive, mission-driven, cyclical planning process that determines and documents the physical layout of properly located, sized, and interrelated land areas, facilities, utilities, and other factors to achieve maximum mission effectiveness, maintainability, and expansion capability in theater. This chapter describes the general steps that base camp planners follow in the BCDP. Further chapters will discuss some steps in greater detail.

2-2. Description of the Base Camp Development Planning Process. The BCDP process consists of several, not always linear, steps. This process relates to the master planning and military decision-making processes that are further discussed in Chapter 3. The final product is a completed base camp plan that provides a logical and documented solution for a base camp location, land usage, and facilities that will support the needs of the customer and mission accomplishment. As shown in Figure 2-1, page 2-2, the steps are—

- Initiate preliminary planning.
- Location selection.
- Land use planning.
- Facility requirements development.
- General site planning.
- Design guide, programming, and construction.
- Maintain and update plans.
- Cleanup, closure, and archive.

a. Depending on the circumstances, not every step may be necessary for planners to evaluate or execute. Oftentimes, the customer or the HN will have selected or will dictate the base camp location. In other cases, planners may be asked to provide support to the process, and the process may already be under development. In this instance, a base camp has typically been located, a land use plan developed, and the facilities requirements determined by military forces on the ground. The planner may be asked to support only the general site planning, provide designs for new construction, or provide guidance on typical of the environment where base camp planners operate. Regardless of the step in which planners enter into the process, a working knowledge of the BCDP process is necessary to enable them to provide the best possible guidance and, ultimately, a product that best supports the customers needs.

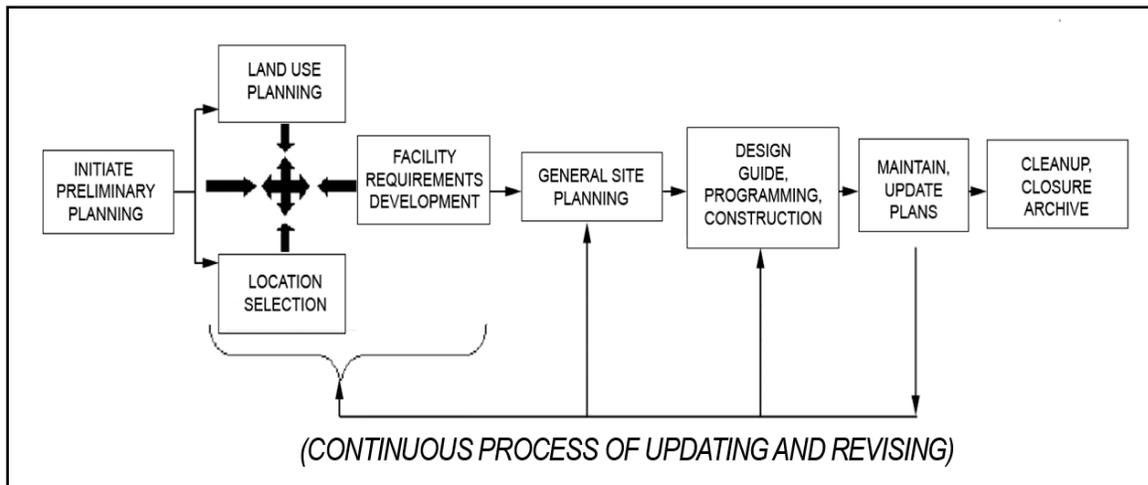


Figure 2-1. The base camp development planning process

b. It probably will be necessary to consider some steps in the process concurrently with others. In time constrained situations, or situations where base camp planners are involved after construction has already started, design and construction of certain aspects of the base camp may be required before completion of the full BCDP process. For example, once identified, survivability measures may be designed and construction initiated before completing the general site plan or even before completing the entire land use plan. This is not the preferred method, but it is a reality that will happen due to mission and funding requirements. Planners should advise commanders that executing construction before completing a plan can lead to less than optimal base camp master plans, increased costs, and potentially increase the time required to complete the base camp. In any case, programming funds for construction needs to begin as soon as it is feasible to ensure proper resourcing. Where possible, base camp cleanup and closure should be integrated early into the planning process. Early integration of cleanup and closure activities, such as planning ahead for how sanitation facilities will be closed out, can avoid or reduce future challenges. The following steps make up the BCDP process:

(1) *Initiate preliminary planning.* Early and thorough planning is essential for any endeavor. Base camps must integrate competing requirements effectively in order to operate efficiently. Initiating preliminary planning is essentially completing a mission analysis—gathering the available information and determining what additional information is required. As noted above, base camp planners may enter the process at this initial step or somewhere further along the process. Performing a mission analysis, whether completed by the base camp planner or by forces already on the ground, is the vital first step. Mission analysis is where the planners answer basic questions and develop requests for information (RFIs) about the project. Mission analysis is also the corresponding first step in the military decision-making process (MDMP). This step is essential to understanding the environment, both physical and operational, in which the camp will operate. Chapter 4 covers mission analysis in relation to base camp planning in greater detail.

(2) *Location selection.* Finding the best possible location for the base camp requires balancing tactical and operational requirements and the ability to sustain the camp with terrain factors such as urban or rural areas, drainage, soils, vegetation, and topography. In some cases base camps may be located on existing facilities. In other cases they may be located on undeveloped land. In either case, it requires a careful balancing of requirements to obtain the best location that meets operational, sustainability, and engineering requirements (see Chapter 5).

(3) *Land use planning.* Although land use planning begins in the early stages of the BCDP, it requires the planner to conduct a facility requirements analysis before it can be finalized. Additionally, since land use can be impacted by the site selected, the planner should confirm that the location selected is adequate and has been approved for the base camp. This step in the process integrates the military units' requirements (such as survivability measures, housing, motor pools, and storage areas) with land use affinities and terrain restrictions. It provides a general overlay of land use areas within the proposed base camp (see Chapter 6).

(4) *Facility requirements development.* Facility requirements reflect the integration of facility allowances with unit requirements. Allowances are based on the type of unit, its size, and the anticipated life span of the base camp. These allowances are found in the theater-specific guidance documents such as the Sand Book and include areas such as square feet of housing space, square feet of command space, and allowances for specific facilities such as chapels and movie theaters. JP 3-34 provides guidance related to facility standards. Once allowances have been determined, they are reconciled with specific unit requirements by validating or adjusting those requirements based upon specific unit needs. For example, the Sand Book may specify a certain amount of square feet for vehicle parking. Coordination with the unit, however, may reveal that they have specific requirements, such as turning pads for armored vehicles. In addition, the theater guidance documents do not take into account every unit requirement. Coordination with the unit may reveal, for instance, that they have water purification units with specific needs. Planners must work with the customer to reconcile what is allowed versus what is required (see Chapter 7). Adjustments to these allowances must be justified.

(5) *General site planning.* Once preliminary site planning has been completed, general site planning further refines the product. General site planning takes the initial land use plan, facility requirements, and coordination with customer requirements, and completes the base camp design. It includes individual building layouts shown within the preidentified land uses. In this step, final decisions with regard to facility types, standards, construction, and the final location of specific structures and facilities are made (see Chapter 9).

(6) *Design guide, programming, and construction.* The design, programming, and construction of base camps begin as early as possible in the BCDP process. This early start is essential to ensuring that funding and resources are available and that the camp is completed in time to conduct its mission.

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(a) Design. In most instances, it is necessary to design facilities for base camp use. Although the design effort for some structures, such as vehicle parking areas, will be minimal, others may require significant design effort. Beginning the design process early is essential in order to determine facility types and required resources and make recommendations on labor sources. Planners must balance quality of life, resources, and funding constraints to determine the most efficient and cost effective designs. Depending on the allowable standards, some facilities, such as facilities for housing and recreation, aviation, sanitation, electrical distribution, and survivability measures, may require significant design efforts. When facility allowances provide for new construction to accommodate troop housing, for example, there may be several design options available (tents, prefabricated trailers, SEAHUTs, or concrete/masonry construction). Selecting designs early is critical to ensure adequate and timely resource availability. Where possible, use suitable existing structures, established designs (such as those found in the Theater Construction Management System [TCMS]), and prefabricated buildings. When new construction is required, use established techniques, methods, and materials to simplify planning, material, and labor requirements. The selected design determines, and is also influenced by, resource requirements and availability. As such, planners must select designs which can be supported by available construction materials and other resources. The availability of materials will depend on the local market, access to other markets (which may be determined by the military and political situation), transportation assets, and available funding; for example, it may not be practical to design toilet facilities with flush toilets if the resources (to include water) are not available. The selection of a particular design also impacts, and is driven by, labor availability. The labor for base camp construction may be supplied by military forces, contractors, or HN workers. Each labor source has certain strengths and weaknesses based on equipment, training, and experience. If certain labor assets are available, such as HN workers, it may be beneficial to select designs that meet the local labor skills. Conversely, certain designs may not be supportable based on the available labor pool. Designing wood frame structures for use in a desert environment may not be the best choice if the local labor pool is not familiar with it. They may, however, be skilled in masonry construction. Considering the anticipated labor availability is an important part of the design process.

(b) Programming. Programming for funds must be completed as soon as possible to ensure adequate support. This is especially important if construction will involve the use of contractors or HN personnel, lease payments are required, or restoration and/or damage payments are anticipated. In some circumstances, certain funds may only be used for specific purposes. Consult with contracting representatives to determine fund availability, restrictions on use, and information on how to obtaining funds and arrange for payment to vendors. The contracting representatives, including those associated with civil affairs units, can also provide guidance on the available labor pool, HN contractors, and bid submission procedures and guidelines. If the project is congressionally funded, DD Forms 1391 are required and can be prepared by a service member with the proper expertise and experience. Upon completion, DD Forms 1391 must be reviewed and certified by the appropriate level commander or his properly designated representative.

(c) Construction. Construction of key facilities, in particular those required to support survivability measures, should begin as soon as plans are approved. Construction may be accomplished by military engineer units, contractors, or HN personnel (both HN contractors and HN personnel under military unit supervision). Base camp planners must determine, in conjunction with the construction unit, the proper sequence of events and the critical path required to execute construction in a timely and efficient manner. HN laborers and contractors may not adhere to expected construction and safety standards. The implementation of an effective quality assurance and quality control plan is essential to maintain standards, conserve resources, and maintain safety. In the often fluid nature of deployments, logistic and labor shortages can also arise at short notice. Where possible, anticipate and plan for delays and ensure adequate lead time to accommodate logistics requirements.

(7) *Maintain and update plans.* All construction projects require the maintenance and updating of construction plans. As these plans are altered, change drawings and diagrams must be completed. The contract must specify receipt of as-built plans for each portion of a project before payment for that portion or risk failure to capture the information. These plans are especially important where safety or environmental matters are involved. These include areas such as electrical systems (especially if buried lines are involved), sanitation systems (such as buried sewer lines, sewer lagoons, and latrine pits), ammunition holding areas, training areas (especially those that produce unexploded ordnance (UXO), land fills/burn pits, and hazardous material (HM)/hazardous waste (HW) storage and disposal sites. In addition, the land use plan, the tabulation of existing and required facilities (TAB), and general site plans should be updated and records maintained. Plans should initially be maintained at the office of the base camp mayor or the base camp engineer. Theater guidance will provide further information on their final disposition. In all cases, ensure that coordination is made for the handoff of all plans when units or responsible parties are changing (such as during unit rotations).

(8) *Cleanup, closure, and archive.* As stated earlier, planning for base camp cleanup and closure early in the process may mitigate problems later. Depending on the situation, base camp cleanup and closure actions can be quite extensive. Significant activities include environmental cleanup, removal or destruction of facilities, turnover of facilities to the property owner or the HN, and removal of materials (see Chapter 10).

2-3. Overview of Base Camp Planning Considerations. Base camp planners must consider a number of areas when proceeding through the BCDP process. These areas are considered where and when it is appropriate to address them. Quite often, planners will need to address competing requirements and develop solutions that meet the tactical or operational situation. Many of these will be discussed in greater detail in other chapters; however, this section provides an overview of some the issues that base camp planners will have to address—survivability measures, functional areas, facility standards, facility construction, infrastructure, and environmental considerations.

a. **Survivability measures.** Survivability measures provide cover and mitigate the effects of enemy weapons on personnel, equipment, and supplies. These measures range from employing camouflage, concealment and deception to the hardening of facilities, C2 nodes, and critical infrastructure. Survivability is integrated throughout base camp planning and is often the first area considered. Survivability measures include establishing base camp security, such as perimeter walls and berms and entry control points (ECPs); protective construction to protect structures against damage; and the proper location of structures and facilities to help reduce the chances of being damaged. In addition, certain safety setbacks may be required, or at least desirable, to keep living and working areas away from perimeter walls and fuel and ammunition storage areas. Planners must work with force protection experts and the units that will occupy the camp to identify survivability measures to be implemented and integrated into the overall base camp plan (see Chapter 8).

b. **Functional areas.** Certain functional areas are often grouped with, or next to, other areas, based on affinity relationships. Simply put, these are areas with the same general purposes (such as personnel housing) which can efficiently exist next to each other and enhance operational effectiveness and quality of life. For instance, housing areas may be located next to areas dedicated to recreation, but may not work well adjacent to airfields. Depending on the size of the base camp and the commander's desires and requirements, the use of functional areas and affinity relations may play an important part in developing the land use plan (see chapter 6). While there are no set definitions of functional areas or affinity relationships, some typical divisions include—

- Housing (US military, HN military, government civilians, and contractors).
- Administration (including command posts and medical facilities).
- Maintenance (to include motor pool areas).
- Logistics (including warehouses, water, and fuel storage areas).
- Airfields (helicopter and fixed wing).
- Recreation (to include PXs, gyms, ball fields, and movie theaters).
- Training (including weapons ranges and impact areas).

c. **Facility standards.** Facility standards are determined by the camp size, the anticipated life span, governing documents, and the commander's guidance. While JP 3-34 and the theater governing standards provide a general overview of the standards, there may be several different means of reaching the desired end state. For instance, an allowance may specify a certain number of square feet for a chapel, but not specify the construction to be used. Options may include the use of an existing building, tents, new construction, or a prefabricated structure.

d. **Facility construction.** Planners consider and make recommendations on the best means of constructing facilities. They must consider the materials available, whether structures will be built on-site or prefabricated (such as housing trailers), and the type of labor to be used (military, contractor, or HN labor). The type and availability of these resources may drastically impact the final base camp plans.

e. Infrastructure. The various types of infrastructure associated with base camps depend on its size, function, location, and life span. The camp's supporting infrastructure includes a number of areas such as the road network, power generation and distribution, sanitation systems, and measures to support personal hygiene.

(1) While smaller base camps may have minimal requirements in many of these areas, larger base camps approach the size of small cities with all of the attendant infrastructure issues. Base camp planners work with the supported commander to determine the base camp's requirements and make recommendations. These recommendations take into account—

- The tactical situation.
- The base camp life span.
- Allowable standards.
- Suitability and maintainability.
- Available resources.
- Cost effectiveness (initial cost and sustainment costs).

(2) As stated earlier, there may be several means to achieve the desired result. In some cases, an austere solution such as the use of burnout latrines rather than porta-johns, may be the best solution. Chapter 8 discusses selected infrastructure requirements in more detail.

f. Environmental considerations. Over the last few years, the military has developed a greater understanding of, and placed greater emphasis on, environmental considerations. While often considered to be focused on the protection of natural resources, environmental considerations also include those measures designed to protect military personnel and civilians from the impact of environmental hazards. In addition, the requirement to clean up and close base camps and avoid liability for environmental cleanup costs makes it imperative to include planning for these activities as early as possible in the planning process (see Chapter 10). Base camp planners integrate environment considerations into the BCDP in several areas including—

- Environmental baseline surveys (EBSs).
- HM/HW storage.
- Petroleum, oils, and lubricants (POL) storage.
- Waste disposal.
- Toxic industrial chemical and toxic industrial material (TIC/TIM) hazards.
- Disease vectors.
- Storm water runoff.
- Dust abatement.
- Natural and cultural resource protection.

