CHAPTER 4

Preliminary Planning

4-1. Introduction. Preliminary planning incorporates those initial activities that assist the planner in understanding the scope and magnitude of the mission while simultaneously preparing the planner for follow-on actions as a part of the BCDP process (see Figure 4-1). The purpose of preliminary planning is to help planners think critically, develop situational understanding, anticipate decisions, and simplify complex issues to the point that they can be better identified and managed. Preliminary planning also assists in understanding organizational structures, allocating resources, directing and coordinating future actions, and preparing for the next step in the BCDP process.

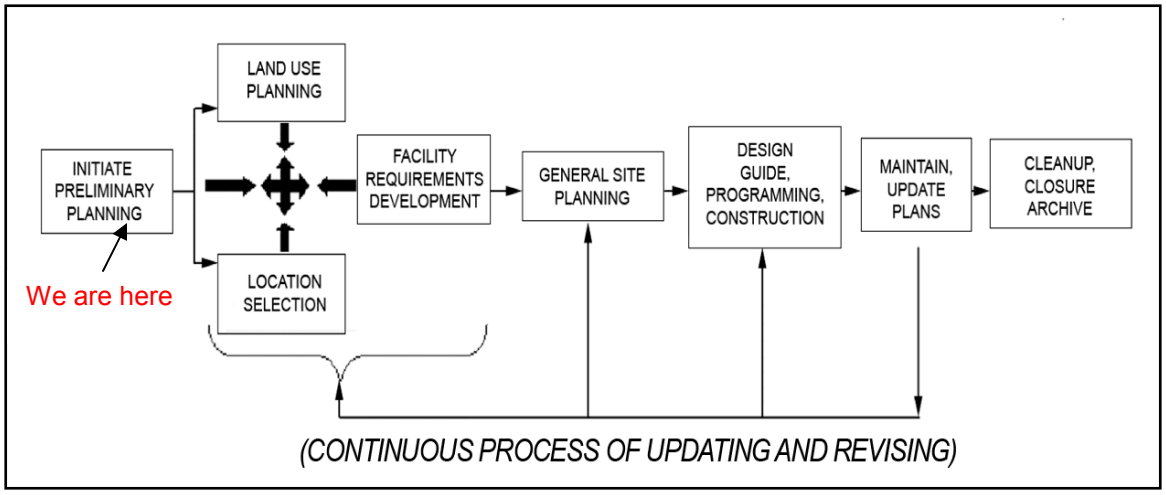

Figure 4-1. The base camp development planning process

a. Mission analysis is an ongoing step that involves the study of the various factors, including the mission, the tactical and political situation, economic and cultural variables, specified standards, and available resources that can impact BCDP. It is the cornerstone of the BCDP process. Throughout the development of the base camp plan, planners constantly review facts and assumptions, react to unanticipated requirements and events, and refine the plan. These considerations are drawn from an analysis of the base camp's mission, size, and allowable standards and operationally related variables. Even in circumstances where planners become involved in the process after it has already started, they must still integrate the original analysis, and continue to revisit it, as they proceed with their mission.

b. The preliminary planning steps include—

- Analyzing the mission statement and/or OPORD to obtain key information.
- Requesting or developing key information that may not yet be available.
- Analyzing the supported units to determine unit organization, functional requirements, and personnel and equipment numbers.

- Reviewing doctrine to determine what the base camp is allowed in terms of facilities and associated standards.
- Analyzing the various operational variables to determine their impact on BCDP.

4-2. Analyzing the Mission Statement and the Operation Order. Mission analysis initially involves examining the stated mission and then developing lists of specified and implied tasks, facts and assumptions, and various constraints. The mission itself may come from a simple request for support or a mission directive, or it may be imbedded in the OPORD. Within the OPORD it is usually found in the sections that cover tasks to subordinates, in the coordinating instructions, or in the engineer operations annex for Army orders. (In a joint order it may be found in the engineer support plan.) Planners at all echelons analyze this information to determine some of the initial planning requirements. These requirements include determining and developing lists of specified and implied tasks, facts and assumptions, and any specific constraints imposed on the mission. Reviewing this information will generally result in a large number of questions that will need further answers. Planners then develop RFIs that can be sent to higher headquarters, supported units, and other agencies to obtain answers and clarification.

a. Receive the mission. A field force engineering (FFE) element may receive a mission statement or directive to provide support to base camp construction. This mission statement will include general information on the "who, what, when, and where" of the mission. It is an abbreviated statement of the task that base camp planners must execute. This mission may call for the team to field a specific request, such as for the design of a sewerage lagoon, or it may be a directive to support the establishment of a base camp from the ground up. In other cases, the FFE element will receive a more detailed plan, such as an OPORD, that provides a greater amount of mission information. The first step in mission analysis, once the mission statement or directive has been received, is to analyze the information contained within the document. In addition to reviewing the mission assigned to the base camp planning element, the team should also review the mission statement and the OPORD of the supported and higher units to obtain additional information.

b. Specified and implied tasks. Each mission, whether the base camp planning mission or the supported unit mission, will have specified and implied tasks. FM 5-0 defines a *specified task* as a task specifically assigned to a unit by its higher headquarters. It further defines an *implied task* as a task that must be performed to accomplish a specified task or the mission, but is not stated in the higher headquarters order. Implied tasks are derived from a detailed analysis of the higher headquarters order, the enemy situation and COAs, and the terrain. A review of the information provided about the mission may state that the planners must coordinate with the 1st Brigade Combat Team (BCT) to develop a base camp, at an unidentified location, capable of supporting up to 3,500 personnel for up to three years and must include a helicopter landing area able to support up to 12 helicopters at a time. This short statement provides a number of

specified and implied tasks that planners must review to determine what additional information is required.

(1) Specified tasks include—

- Coordinate with 1st BCT.
- Develop a 3,500-person base camp.
- Plan for the construction of a helicopter landing field.

(2) A number of implied tasks can be inferred from this statement. Some of these implied tasks include—

- Determine the task organization of the BCT (what it includes and what its needs are).
- Confirm the antiterrorism/force protection (AT/FP) standards for the base camp.
- Conduct a site reconnaissance.
- Develop a land use plan.
- Obtain information on funding sources.
- Coordinate with the aviation unit to determine specific requirements.

c. Facts and assumptions. As part of the planning process, base camp planners develop a list of facts and assumptions. According to FM 5-0, *facts* are statements of known data concerning the situation, including enemy and friendly dispositions, available troops, unit strengths, and materiel readiness. An *assumption* is a supposition on the current situation or a presupposition on the future course of events, either or both assumed to be true in the absence of positive proof, necessary to enable the commander in the process of planning to complete an estimate of the situation and make a decision on the course of action.

(1) Facts are derived from information in the OPORD or other information sources. They may include quantifiable items such as strength numbers, the amount of money available for construction projects, the size of the available base camp area, and the soil type at an airfield location. Facts may also include more intangible items such as the overall threat level and the suitability of the local transportation network.

(2) An assumption is appropriate if it meets the tests of validity and necessity. FM 5-0 states that *validity* means assumption is likely to be true. “Assuming away” potential problems, such as weather or likely enemy COAs, may produce an invalid assumption. FM 5-0 defines *necessity* as whether the assumption is essential for planning. If planning can continue without the assumption, it is not necessary and should be discarded. For example, an assumption might be that the gravel source to be used for road construction in the base camp will be adequate or that local vendors will continue to be willing to provide their services. If there is significant risk associated with an assumption, it should be noted.

d. Constraints. *Constraints* are restrictions placed on the command by a higher command. A constraint dictates an action or inaction, thus restricting the freedom of action a subordinate commander has for planning (FM 5-0). Constraints may be specified or implied from information contained in the OPORD or other documents, or they may come from information received as a result of coordination with the supported unit. Constraints may reflect a number of operational variables, but will quite often be based on political, military, or resource issues. Some examples of constraints are—

- Base camps must use established facilities.
- Camps must be located to avoid overwatching terrain.
- Lumber sources are not adequate for construction.
- A particular vendor must be used for electrical supplies.

e. Commander's intent and guidance. The guidance received from the commander is a key source of planning information. In some cases, it takes the form of specified and implied tasks or constraints. In other cases, it is general guidance that the commander wants to see applied when and where possible. The commander's intent provides his vision on how he wants to see the camp look, how he wants it to operate, and what his construction priorities are. For example, the commander may direct that emphasis be placed on quality-of-life issues, such as shower facilities, that may otherwise exceed the established standard allowances. Base camp planners integrate the commander's guidance into the BCDP and also advise the commander on what is allowable, feasible, and efficient.

4-3. Analyzing the Supported Unit's Mission and Requirements. After analyzing and extracting available information from the mission statement and the OPORD, planners obtain additional information from the supported units scheduled to occupy the base camp. Much of the information that base camp planners need can be obtained by this coordination with the supported unit. Early coordination and the submission of an effective list of RFIs will assist planners by reducing the time required to gather information, thereby increasing the amount of planning time available. Analyzing the supported unit and its mission will enable planners to—

- Identify unit functions.
- Determine unit structure.
- Determine the planning strength for the numbers of personnel and equipment.
- Define relationships among unit functions.

a. Identify unit functions. Identifying unit functions aids base camp planners by providing information on what the overall unit mission is and how it can be expected to operate. This, in turn, will assist planners in developing a base camp plan that meets the unit's requirements. Identifying unit functions includes determining what its primary mission objectives might be, what types of activities it might perform, and what its responsibilities and capabilities might be.

(1) One means of obtaining information on unit functions is from direct coordination with the supported unit. Conversations with unit personnel that represent its various functional areas—operations and training (operations staff officer [S-3]), adjutant (human resources staff officer [S-1]), and supply (logistics staff officer [S-4])—will reveal very quickly how the unit views its structure, mission, and unique requirements. Coordination with civilian agencies being supported for the establishment of base camps in support of disaster relief operations will provide similar information.

(2) Another means of obtaining information on unit functions is by referring to the mission and operational information found in the unit's modified table of organization and equipment (MTOE) or table of distribution and allowances (TDA). Each Army unit has an MTOE or a TDA that provides general information about its mission and employment. It also contains very detailed information about its personnel and equipment numbers and types. While difficult to read and understand, these documents can provide valuable information if direct unit coordination is not possible.

(3) As an example of determining unit functions, a headquarters and headquarters company (HHC) from a BCT is one of the units that will occupy a base camp. An analysis of its operational information, shown in Figure 4-2, page 4-6, reveals several things (noted in bold type), including its mission (to provide C2), how it is employed (may deploy as more than one command post [CP] element) and some of its functional needs (administration, communications, logistics warehousing areas, and such). While this is an imperfect means of obtaining this information, it will still provide planners with a basic understanding of the unit's function and mission.

OPERATIONAL INFORMATION

MISSION. To provide **command, control, and supervision** of the operation of the brigade and attached units. The headquarters and headquarters company (HHC) also provides operating personnel to support functional requirements for the headquarters.

EMPLOYMENT. (1) The HHC operates as a **tactical and administrative headquarters**. The brigade headquarters **is organized with a tactical (TAC) command post (CP); a main CP, which consists of the tactical operations center (TOC); and a brigade support area (BSA).** (2) The TAC CP, located in the vicinity of the maneuver battalions, consists of representatives of the S-2, the S-3, and the command section. It plans and advises on mission strategies and moves as the tactical situation dictates. (3) The main CP consists of the TOC. **The TOC is divided into cells** of coordinating and special staff personnel and representatives from other units necessary to sustain combat operations and plan for the future. (4) The BSA **provides combat service support functions** to the brigade combat team (BCT). The **communications element at this location connects to the division signal center when attached to a division**.

CAPABILITIES. (1) This unit provides: (a) **Command, control, supervision, and staff planning of the operation of the BCT and attached units.** (b) **Operation of the TAC CP, the main CP, and the BSA.** (c) A **provost marshal** operations section to exercise operational control over assigned and attached military police (MP) units. (d) **Chemical, biological, radiological, and nuclear (CBRN) staff** services to the BCT headquarters for smoke/decontamination operations, radiation monitoring and chemical detection, and CBRN reconnaissance to support assigned and attached units. (e) **Personnel administration to organic and attached personnel.** (f) **Religious support** to organic and attached personnel.

Figure 4-2. An example of operational information being used to determine unit functions

b. Determine unit structure. Further analysis of the unit will provide information on its structure. The planner's interest is ultimately in determining the facilities (buildings, land, and infrastructure) required to support the mission. This analysis will provide additional information on what the unit may need in order to accomplish its mission. Once again, direct coordination with the supported unit is the best method of obtaining this information.

(1) The example shown in Figure 4-3 is for a heavy brigade combat team (HBCT). The HBCT includes its organic HHC, two combined arms battalions, a cavalry squadron, an artillery battalion, a brigade support battalion (BSB) (to provide logistics), and a brigade special troops battalion. Of course, BCTs may also have other elements task-organized to them.

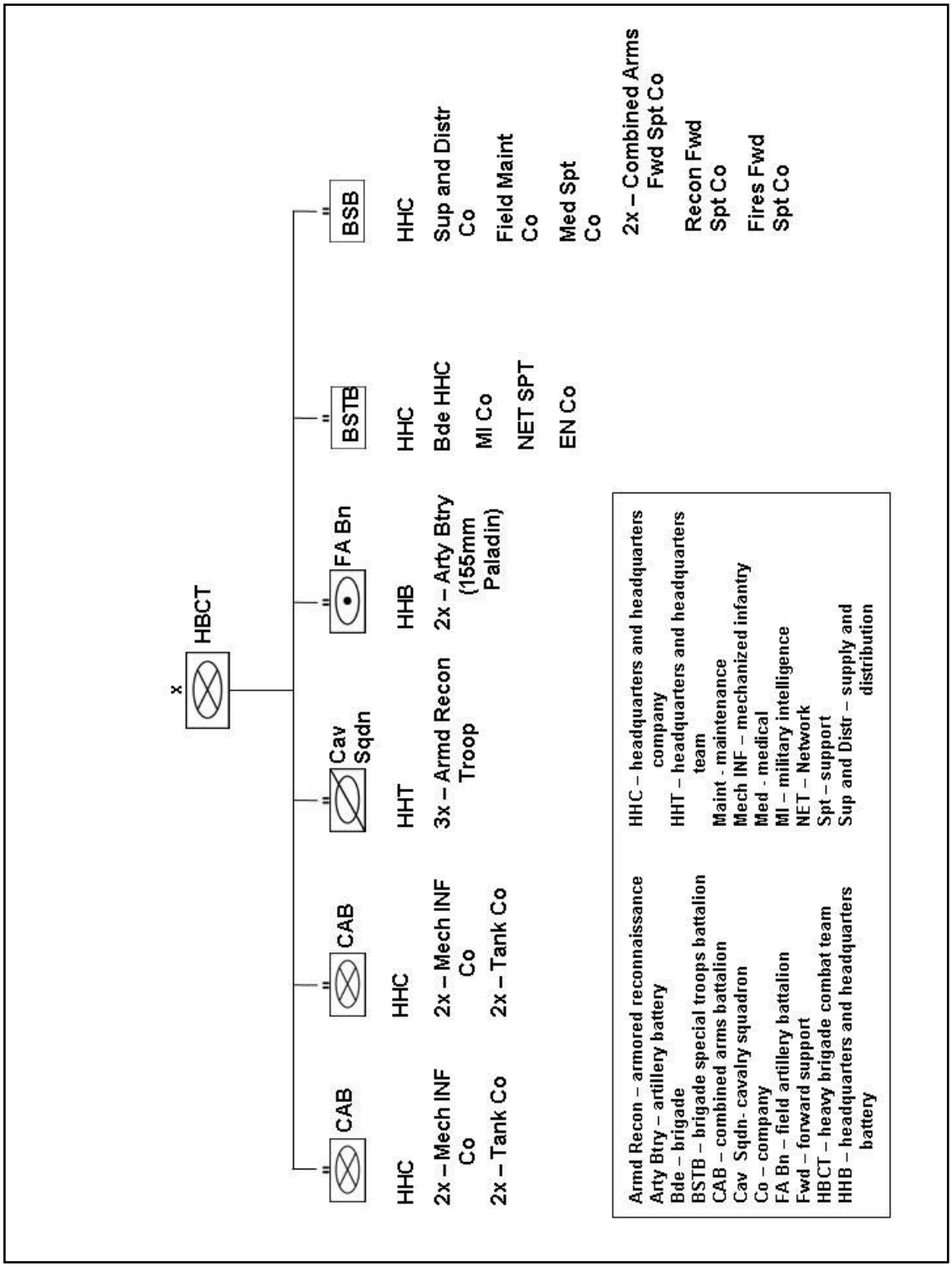

Figure 4-3. An example of a unit structure for a heavy brigade combat team

(2) As a base camp planner, the presence of certain types of units within the organization's structure may result in certain assumptions and implied tasks. If the artillery battalion will provide fire support, it may require areas to set up the firing batteries. If the BSB includes maintenance elements, vehicle parking areas, maintenance facilities, and storage areas for parts may be required. Planners can use this information to further develop the lists of facts and assumptions and specified and implied tasks and submit them to the supported units as RFIs.

c. Determine the planning strength for the numbers of personnel and equipment. Coordination with the supported unit and a review of MTOE and TDA information will provide planners with an estimate of the personnel and equipment to be supported within the base camp. This information is critical to base camp development, as it is the basis of the facility allowances and requirements further discussed in Chapter 7.

(1) *Personnel*. While base camps may be designed to support particular military units, they are usually referred to as being designed to support a specific population size. This distinction is important because units that occupy base camps change over time, and additional personnel are often present beyond those assigned to a particular unit or units. Coordination with the initial units and an analysis of the MTOE and TDA data form the basis for the initial personnel estimate. Further analysis is required to determine additional population requirements that result from other sources. The number and types of personnel not only drive the overall base camp size requirements; they may also influence base camp land use planning as there are often requirements to establish separate working and living areas for military, HN, and contractor personnel that affect overall utility requirements. The personnel living and working in a base camp typically come from six sources. These sources include—

- Military personnel that live and work on the base full time.
- HN or multinational military personnel on base full time.
- Civilian government personnel and civilian contractors on base full time.
- Personnel (military and civilian) that may be transient (such as truck drivers from transportation units that are on-site temporarily).
- HN day workers that are on base during work hours only.
- Surge capability to support rotating units conducting transfer of authority.

(2) *Equipment*. Military units deploy with a variety of equipment and vehicle types. The equipment and vehicles on a base camp also include a variety of civilian vehicles used by contractors for logistics and base camp operations. In some cases, equipment may require special considerations, depending on their mission. These issues may include significant operational and safety standoffs, space for bulk water and bulk fuel operations, and line of sight for communications systems. In all cases, the amount and type of equipment and vehicles will determine the relative size of areas devoted to vehicle parking and maintenance. To effectively determine the actual equipment requirements and constraints, the planner should maintain continuous dialogue with the unit and update plans as appropriate.

d. Define relationships among unit functions. Based on an analysis of unit functions and organization, planners can develop relationships between the various elements. For instance, certain identified functions for the HHC included personnel administration, supply, communications, and C2. Elements within the entire HBCT may also be grouped loosely into these areas; for example, the BSB providing supply support. These initial groupings can form the basis for affinity relationships and functional areas as detailed later in Chapter 6.

4-4. Base Camp Allowances and Standards. As noted in Chapter 1, base camps may be described by the functions they perform, such as a main support base or a logistics support base. The facilities on these bases, and the standards that they are constructed to, is a function of the base camp's purpose, size, and anticipated life span. JP 3-34 provides the baseline standards for base camps based on anticipated life span, while other documents provide information on allowable facilities. (See Appendix C for guidance on allowable facility standards based on JP 3-34.) Using this information, planners can make an initial analysis of the types of facilities, construction standards, and resources that they can expect to use. This information, in turn, may generate RFIs and additional planning considerations. For example, if a 3,500-person base camp is being developed in Europe to support an HBCT and supporting military personnel and civilians for three years, planners would use the applicable construction standards from JP 3-34 and would obtain an estimate of the allowable facilities for a base camp of that size and life span from the Red Book.

4-5. Operationally Related Variables. Chapter 1 provided a brief introduction to operationally related variables, as outlined in FM 3-0, that planners use as a guide when conducting mission analysis. These variables, present in differing forms and exerting different amounts of influence, provide planners with a framework to analyze the various aspects of the mission and the environment. Additionally, these operational variables may serve as the basis for the evaluation criteria developed for COA analysis (see Chapter 3). While not all of them have equal weight, most will in some way impact the environment in which the base camp is located, designed, built, and managed.

a. Political variables. While at first political issues may not seem to be a matter for base camp planning, the political environment can influence the decisions that planners make. Operations may be conducted in environments that can be described as permissive, semipermissive, or forced entry. These environments provide, among other things, an indication of the levels of government and local support that can be expected. The relative levels of support that the national and local governments provide, and the services that they are capable of providing, may impact base camp decisions. In addition, the political environment may be influenced by other forces, such as major transnational corporations, private security companies, and various NGOs. The political situation will often impact the base camp's location, the standards used, and access to resources.

(1) *Effect on location*. In many circumstances, the HN government may provide a specific location or may offer locations for assessment. These locations may be based on

several factors, including the effect on ethnic, religious, and political groups, the need to provide economic development to certain areas of the country, or the desire to avoid negative publicity that may result from U.S. bases in certain areas. When more than one site is offered as a base, planners must evaluate their relative merits and make a recommendation. Often these locations will not be ideal, and planners must work to provide the best base camp plan, based on the location.

(2) *Effect on standards*. The image that U.S. forces and the HN wish to project may impact base camp standards. Politically, it may not be possible or desirable for U.S. forces to project the image that they are staying in the country for an extended period. Conversely, U.S. forces may wish to project the image that they are there to provide long-term stability. The numbers and types of facilities developed and the construction methods and materials used often provide an impression of the mission's intent. For instance, if U.S. forces have stated that the mission is of a short duration, but then begin to build structures using concrete, the impression to the local population becomes that we intend to stay for an extended period. In some cases, planners must temper what may be allowed (based on the established standards) with what best fits the mission.

(3) *Effect on resources*. The political situation, both in the HN and in surrounding countries, greatly impacts resource availability. If the HN is willing and able to provide a significant amount of support, it can greatly assist base camp planners in determining resource availability. If the HN is unwilling or unable to provide that support, obtaining resources can be more difficult. Even when resources are available, the desire by the local government to use certain vendors, for economic, cultural, religious, political, or personal reasons, may impact the availability, types, and costs of resources used. For example, if the local government wishes to patronize a certain local leader, it may be necessary to procure materials or workers from that person, even if it is not otherwise the best choice. Relations between neighboring countries may also impact resource availability. In some cases, nations may prevent or delay the movement of materials necessary for base camp construction. In other cases, the political environment may require that certain countries contribute resources. In either case, delays at border crossings are a typical cause for delays in material deliveries. While base camp planners may not be responsible for making or influencing these decisions, they are certainly influenced by them and must remain aware of them.

b. Military variables. Planners must consider many military aspects related to the mission, the situation, the military organization, and requirements of units that will occupy the base camp. Some of these considerations also pertain to base camps developed for civilian applications such as disaster relief. These considerations include quantifiable aspects such as numbers of personnel and equipment, organizational history, and dynamics. Planners work to integrate these various military aspects into the base camp planning process and use them as tools to evaluate and make various decisions. Requirements to address I/R issues will alter the planning considerations for a base camp, but the same basic principles apply.

(1) *Equipment*. Equipment types and the associated ammunition and fuel storage requirements can have a significant impact on base camp planning. Base camps may be designed to house specific units or a specific population size, with units varying over time. Nevertheless, certain equipment types will require specific design considerations. If U.S. forces are constructing the base camp, the equipment available to support base camp construction and sustainment should be considered. When planning for equipment requirements, coordinate with the anticipated occupying units or subject matter experts (SMEs) on equipment types and requirements (see paragraph 4-3).

(2) *Manpower*. Base camps are built, sustained, and inhabited by both military and civilian personnel. These include full-time base camp residents, part-time residents (such as personnel assigned to transportation units that are often on the road), and day workers who occupy the camp during their work hours. Each of these groups may have specific requirements. Base camps often include a provision to support surge populations such as during unit rotations. The overall base camp population and the overall size and associated infrastructure requirements determine facility allowances. Paragraph 4-3 provides additional planning concerns related to base camp population.

(3) *Doctrine*. Various references impact base camp operations. These include FMs, service regulations, theater-specific base camp guidance (such as the Sand Book), and other documents including status-of-forces agreements (SOFAs) and DOD Publication 4715.5-G. JP 3-34 provides the basic doctrine that establishes base camp standards and allowances. Planners should be aware of the relevant documents that govern base camp location selection, construction, operations, sustainment, and closure. The Judge Advocate General (JAG) of the various services can provide information on many legal issues associated with base camps. These legal issues include liabilities, real estate leasing, contracting, purchasing, and such.

(4) *Training levels*. The level of training possessed by personnel involved in construction and sustainment may impact decisions regarding the base camp. Base camp planners must be prepared to tailor their designs to the available skill sets. For instance, military engineers are not typically trained to perform their tasks at the same level as civilian contractors within the United States. While skilled in basic construction, they are not generally trained or equipped to perform tasks such as dry wall installation or installing commercial-type central heating and air systems. In addition, much of the locally available HN labor pool may be limited in terms of their construction abilities. While civilian contractors with the necessary skills to perform more complicated construction may be available, the financial and tactical situations may prevent extensive use of them. When planning base camps and developing designs for buildings and infrastructure, planners must ensure that they are kept as simple as possible, consistent with mission accomplishment and the skill sets of the available labor pool.

(5) *Resource constraints*. Resource constraints are one of the greatest challenges that face base camp planners. They impact everything from determining the best location, to design and construction, to the ability of the camp to sustain itself. These constraints

include materials, money, personnel, equipment, and time. Some of these constraints are directly related to base camp planning while others, such as the availability of transportation assets, have an indirect but still important effect. Planners keep resource availability in mind when determining site selection and designing camps in order to determine if the designs are practical and feasible, given the materials, money, manpower, and equipment available. Subparagraph 4-5.c. covers additional economic issues related to resource constraints.

(6) *Leadership*. Decisions regarding base camp planning reflect the integration of standards and allowances, technical expertise, and leadership decisions. Base camp planners coordinate with military and civilian leaders to integrate their vision and priorities into the final base camp plan. Planners review the mission statement and the commander's intent, and cooperate with and advise leaders on the best design and management practices that will meet the commander's goals. Often the commander's guidance may not be appropriate or attainable. In these situations, base camp planners provide alternatives that will most closely meet the commander's intent.

(7) *Organizational culture*. All organizations have a unique culture that influences decision making and operations. This culture often defines the organization and establishes a common framework of understanding. Planning for base camps is in many ways influenced by this. If the organization values quality of life over certain operational requirements, factors which influence it will be of greater importance. For instance, the desire of the organization to provide for recreation facilities may require planners to integrate them into the base camp plan. Sometimes this integration may come at the expense of other base camp functions. In some circumstances, the desire to maintain separate quarters for officers and enlisted personnel, or military, civilian, and contractor personnel, may require changes to base camp site planning. Planners may also find themselves working with military, HN, and civilian leaders who may come from very different organizational cultures. Through constant communication and feedback with the organizations they support, planners can determine the organization's needs and develop acceptable solutions.

c. Economic variables. Economic issues that impact base camp planning deal primarily with resource and manpower availability; however, they also include areas such as finance, contracting, and property rights. These issues often have both direct and indirect effects on base camp planning.

(1) *Resource availability*. As noted in subparagraphs 4-5.a. and 4-5.b., certain resources and manpower may be available in the HN that can support or detract from base camp planning, design, and construction. In addition, the political and military situations will also impact the availability of various resources. Planners take these issues into account when developing the overall base camp plan.

(2) *Financing*. As with any project, base camps require money for construction, operations, and sustainment. Funding may come from different sources, and certain

sources may be "fenced" or limited for use in only specific circumstances. There may also be requirements to support certain aspects of the local economy by the purchase of materials and services.

(3) *Contracting*. Based on the base camp plan, there may be a requirement to use contractors for all or part of the base camp's construction. This requirement may come from political requirements or from practical concerns pertaining to base camp construction and sustainment. If contractors are used, ensure that contracting experts are contacted for advice on the proper procedures and limitations.

(4) *Property rights*. Base camps are often constructed on land that was (or is) privately owned. Involvement by military real estate, JAG, and civil affairs personnel is essential to ensure that all legal, ethical, and moral concerns are met before initiating construction. In addition, any land use agreements may require that the land be restored to its original condition. This requirement may create additional challenges for base camp planners to design facilities that are not only temporary, but also easily removable or that present minimal environmental impacts.

d. Social variables. Social issues sometimes play a part in the base camp planning process. In circumstances where base camps may include joint forces, HN forces, or civilians of various nationalities, planners may need to accommodate certain social issues. These social issues may include structures for religious services, separate living areas for men and women, or even separate living areas for certain ethnic groups. While social issues may play a part in base camps that serve primarily a military purpose, they will be more prevalent if the camp is developed with a primary function of supporting I/R or disaster relief.

e. Infrastructure variables. Where possible, base camps are located and planned to make the maximum use of existing infrastructure. Using existing facilities may reduce resource requirements, improve security, speed up base camp establishment, and improve quality of life. Planners may use existing infrastructure as a selection criteria in determining the best base camp location and will also use it to help determine the best locations within the camp for specific base camp functions. The presence and use of existing infrastructure is not, however, the only deciding factor. Concern for the other operational variables must be integrated into the selection process.

(1) Advantages of using existing infrastructure may include—

- Reduced time to occupy and establish the base camp.
- Operational advantages such as existing bunkers, airfields, or storage facilities.
- Improved quality of life for base camp residents.
- Reduced resource requirements.
- Better access to existing power, water, and wastewater systems.

- Relative survivability of structures when existing buildings may provide greater protection than tents or new construction.

(2) Disadvantages of using existing infrastructure may include the following concerns:

- Structures may be unsafe.
- Structures may present an environmental health hazard.
- Connecting to the existing infrastructure (such as water systems) may have a negative impact on the local population.
- Structures may not be suitable for survivability (such as structures that would present a significant terrorist target; for example, hotels).
- Occupying an existing structure may present a negative image of U.S. forces to the population (such as using structures related to the prior regime).
- Structures may overlook the base camp, presenting the enemy with observation and a means to fire into the camp.
- Infrastructure may include industrial facilities that cause pollution and present health hazards.
- Infrastructure may contribute to traffic congestion into and out of the base camp and may present additional AT/FP issues.
- Infrastructure may put U.S. forces into closer than desired proximity to the local population.

f. Physical environment. The physical environment and factors such as terrain, weather, and hydrology will affect many aspects of base camp planning. Location selection in particular will be subject to environmental considerations. In some environmental areas, the selection of construction materials, base camp layout, and infrastructure within the base camp will also be affected. Planners consider several environmental factors when planning for base camps. These factors may not be present in all circumstances or their effect may be negligible. In almost all cases, they are still integrated as part of the planning process. An EBS must be performed to determine the environmental conditions at the site and is often performed in conjunction with an environmental health site assessment (EHSA). The EBS and the EHSA will provide valuable information that will support base camp planning decisions (see Chapter 10).

(1) *Man-made structures*. Base camps are often built in, or next to, urban areas. In some circumstances, it may be possible to integrate existing infrastructure into the base camp. This includes using buildings and facilities, roads, drainage structures, and possibly the existing sewer, water, and electrical networks. Even when existing structures are not used for the base camp, surrounding structures will impact it. These surrounding structures may be beneficial or they may have a negative impact. The use of man-made structures, and their relative benefits, depends on variables such as the location, the structure's usefulness and safety, the impact on the local population, and the political/military situation.

(2) *Climate and weather*. Planners consider the prevailing climate and weather when making decisions about several planning factors. While the actual base camp location will not be based on the climate alone, the climate and weather will impact areas such as drainage, layout, building materials, building design, and other infrastructure requirements such as electrical power generation. Climate and weather may impact base camp planning by—

- Increasing or decreasing requirements for drainage.
- Requiring measures for dust abatement.
- Changing the relative needs for heating and air conditioning systems (and associated electric power requirements).
- Requiring planning for insulating buildings.
- Requiring the burying and insulating of water lines to avoid freezing.
- Suggesting building materials suitable for the environment (within the anticipated base camp life span).
- Requiring the design of buildings (and survivability construction) to withstand snow loads.
- Requiring internal road networks to handle excessive rainfall or to accommodate snow removal.

(3) *Topography*. Topography, generally described as the overall terrain features or the “lay of the land," influences base camp site selection, land use planning, and survivability. While certain types of terrain present few difficulties for base camp planners, other types may require planners to exercise a high degree of engineering and master planning judgment. The advantages and disadvantages of the prospective site’s topography are evaluated against the other selection criteria to determine its relative effect.

(a) Topography exerts a great influence on site selection. Certain locations, such as steep hills and floodplains, will prevent base camp construction in all but the most unusual circumstances. In other cases, the topography may require extensive modification such as extensive earthmoving activities. The overall work effort required to adapt the topography to base camp use may have a significant influence on site selection and land use.

(b) AT/FP measures are influenced by the topography of the base camp location. Generally speaking, it is desirable to establishing a base camp on a terrain feature with good fields of fire and observation of the surrounding area. However, locating certain features within the base camp (such as CPs and fuel storage areas) where they can be easily observed and targeted, is not desirable and should be avoided where possible. Planners must also consider the topography surrounding the base camp. Where possible, do not located base camps where high ground can dominate them and make it easier for enemy forces to observe activities within the camp and to locate and engage targets.

(c) Within the base camp itself, the topography will impact the land use plan and, to a certain extent, the construction measures used. For instance, hilly areas may not be suitable for vehicle parking areas or large buildings where extensive earthwork is required. However, smaller structures may be located there. Flat areas may be difficult to drain and require extensive grading and ditching. The construction methods used may reflect terrain considerations. In some case, it may require less earthwork to construct buildings on piers rather then on concrete slabs. Topography also impacts roads and drainage structures. Steep grades that make vehicle movement difficult and increase erosion may need reshaping to reduce their negative effects. The challenge for planners is to use the terrain to the greatest effect and to develop the base camp plan in a way that minimizes the construction effort involved.

(4) *Hydrology*. Hydrology refers to the movement of surface and subsurface water. The availability of water and the effect that it can have on base camp operations presents challenges to planners. While the availability of potable water may have an influence on base camp planning, surface and subsurface drainage issues typically will have a greater effect.

(a) Surface drainage, whether from existing streambeds or from water movement over the ground's surface, often has a significant impact on base camp operations. The topography, soil type, climate, and rainfall intensity all affect surface drainage. Poor drainage detracts from base camp operations by reducing trafficability and overall quality of life. In certain circumstances, flooding may even occur that can damage or destroy equipment. Surface drainage from areas off the base camp may also introduce pollution and potential pathogens into the base camp area. Additionally, water leaving the base camp area can carry pollutants created by the camp's operations into the surrounding areas, such as agricultural fields. Planning for drainage is one of the first steps in any construction project. Base camp planners integrate these concerns into site selection and land use planning to mitigate their negative effects and also provide assistance in the development of drainage structures and runoff management plans.

(b) Subsurface drainage may allow for the movement of contaminants into and out of the base camp area. These contaminants can include industrial chemicals, POL, and human waste. This movement has the potential to negatively impact groundwater sources used for drinking and irrigation. It is important for planners to understand what hazards subsurface drainage presents and to integrate these considerations into planning when and where possible.

(c) In certain cases, base camps may obtain water from new or existing wells. If a well is located on the site, a study to determine its capacity and water quality should be completed. In cases where it is desirable to drill a new well, a study of the area's hydrology and geology is required to determine if well drilling is feasible. To avoid potential health issues, all wells used should be tested; the water should come from aquifers only and not from dug wells that only tap into the local groundwater supply.

(5) *Natural resources*. The natural resources present in the AO may provide an indication of the materials available for base camp construction. They may also include agricultural lands, endangered species that require protection, and such. Water resources are a particular concern in certain areas of the world.

(a) Nations that have a large forest cover and an associated lumber industry, may be able to provide wood for building materials. Similarly, a desert region will most likely provide materials and laborers skilled in concrete and masonry construction. The local availability of these resources, or their availability in neighboring areas, may influence base camp planning.

(b) Besides impacting resource selection, base camp planners should also consider the impact that the base camp may have on natural resources. Agricultural areas in particular, and to a lesser extent endangered plants and animals, may be impacted by base camp location and operations. As a general rule, it is desirable to avoid locating base camps in areas where they will have a negative impact on natural resources. Planners, in cooperation with military and civilian agencies such as military civil affairs teams, need to ensure that any planning for base camps includes consideration of these issues.

(c) In many areas of the world, water is a scarce commodity. Any plan to use local water sources needs to take into account its overall availability and how the base camp water use will impact the local population. Planning for base camp operations, in particular drainage and wastewater, should include methods to prevent contamination of agricultural areas and water supplies. Planning may also include integrating water conservation and wastewater treatment methods into the base camp design.

(6) *Biological features and hazards*. Other factors, such as disease vectors, dust, air, water and soil pollution, and industrial hazards such as TIC/TIM hazards, will be present in many circumstances. Planners should coordinate with other military and civilian agencies to identify hazards that impact base camp planning and operations and develop remediation plans. Accurate and thorough EBSs and EHSAs will assist in identifying hazards (see Chapter 10).

g. Time. Time is often a critical factor affecting military decisions. Decisions regarding base camp planning are usually made in a tight time line, often requiring planners to operate with less than complete information. Whether planning a base camp for military operations in a foreign country or disaster relief within the United States, planners develop solutions that can be implemented in the time available. Decisions, such as the use of certain materials or construction techniques, will often be made on the basis of when the camp is required for operations. In some circumstances, portions of a base camp may be required for use before completing the entire base camp. Sometimes, a base camp may be constructed using the initial standard in order to provide timely beddown for forces and then be improved to higher standards later when time is not as crucial. An eighty percent solution in time to meet mission requirements may be more valuable than

a one hundred percent solution later. Base camp planners integrate the different operationally related variables into BCDP with an eye to meeting time requirements.