

CHAPTER 2

WATER REQUIREMENTS

2-1. Domestic requirements. The per-capita allowances, given in table 2-1, will be used in determining domestic water requirements. These allowances do not include special purpose water uses, such as industrial, aircraft-wash, air-conditioning, irrigation, or extra water demands at desert stations.

Table 2-1. Domestic Water Allowances for Army Mobilization Projects

	<u>Gallons/Capita Day¹</u>
Armored/Mechanical Divisions	150
Camps and Forts	150 ²
Hospital Units	600/Bed
Hotels	70
Depot, Industrial, Plant and Similar Projects	50 gallons/employee/8-hour shift; 150 gallons/capital/day for resident personnel

Notes:

¹The allowances given in this table include water used for laundries to serve resident personnel, washing vehicles, limited watering of planted and grassed areas, and similar uses. The per capita allowance for nonresidents will be one-third that allowed for residents.

²For populations under 300, 50 gallons/capita/day will be used for base camps and 25 gallons/capita/day for branch camps.

2-2. Fire-flow requirements. The system must be capable of supplying the fire flow specified plus any other demand that cannot be reduced during the fire period at the required residual pressure and for the required duration. The requirements of each system must be analyzed to determine whether the capacity of the system is fixed by the domestic requirements, by the fire demands, or by a combination of both. Where fire-flow demands are relatively high, or required for long duration, and population and/or industrial use is relatively low, the total required capacity will be determined by the prevailing fire demand. In some exceptional cases, this may warrant consideration of a special water system for fire purposes, separate, in part, or in whole, from the domestic system. However, such separate systems will be

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appropriate only under exceptional circumstances and, in general, are to be avoided. Fire flows are to be as outlined in EM 1110-3-166.

2-3. Irrigation. In general, irrigation will not be considered but, some irrigation may be required. For example, sod planted for erosion control would require some watering. The allowances indicated in table 2-1 include water for limited watering of planted and grassed areas. However, these allowances do not include major lawn or other irrigation uses. Lawn irrigation provisions for facilities, such as temporary structures, in all regions will be limited to hose bibs on the outside of buildings and risers for hose connections. Underground sprinkler systems will not be considered.

a. Backflow prevention. Backflow prevention devices, such as a vacuum breaker or an air gap, will be provided for all irrigation systems connected to potable water systems.

b. Use of treated wastewater. Effluent from wastewater treatment plants can be used for irrigation when authorized. Only treated effluent having a detectable chlorine residual at the most remote discharge point will be used. Where state or local regulations require additional treatment for irrigation, such requirement will be complied with. The effluent irrigation system must be physically separated from any distribution systems carrying potable water. A detailed plan will be provided showing the location of the effluent irrigation system in relation to the potable water distribution system and buildings. Provisions will be made either for locking the sprinkler irrigation control valves or removing the valve handles so that only authorized personnel can operate the system. In addition, readily identifiable "non-potable" or "contaminated" notices, markings, or codings for all wastewater conveyance facilities and appurtenances will be provided. Another possibility for reuse of treated effluent is for industrial operations where substantial volumes of water for washing or cooling purposes are required. For any reuse situation, great care must be exercised to avoid direct cross connections between the reclaimed water system and the potable water system.