

D. EXISTING SITE UTILITY SYSTEMS

1. Sanitary Sewer System

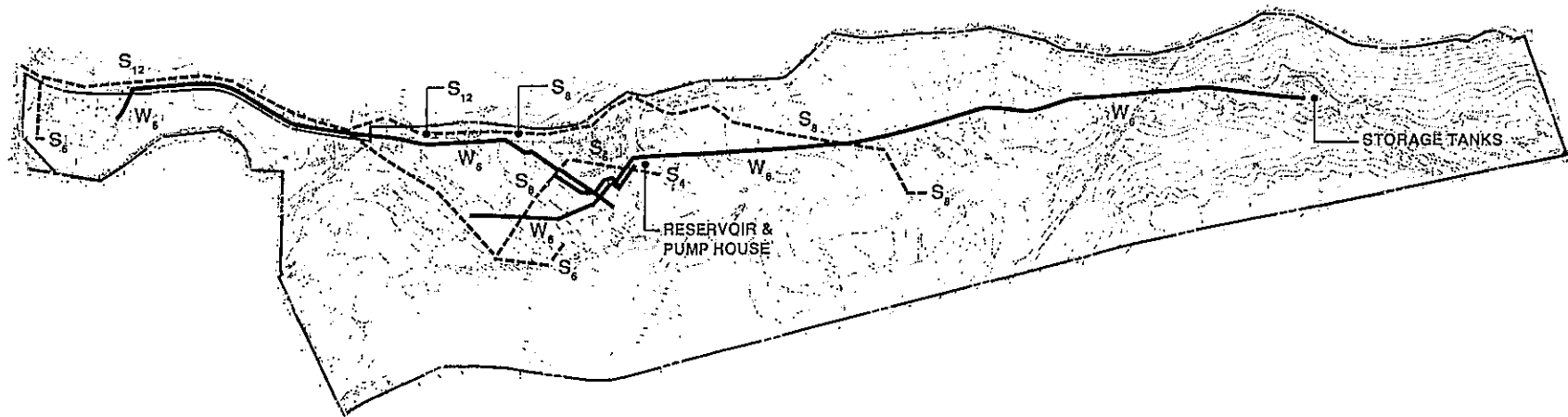
The Waimano Ridge is currently served by new sanitary sewer lines completed in 1989. These lines, currently under State jurisdiction, connect to the City and County sewer system.

The existing on-site 12" sewer trunk lines and the projected 8" sewer line that will serve the DOH laboratory facility is adequate for laboratory and existing WTTC uses. Available additional on-site capacity is 0.426 million gallons per day or 295 gallons per minute. City and County acceptance of additional sewage volumes will require an application review by the City and County Department of Public Works to determine whether the sewer system has sufficient capacity to accommodate them. Figure 9: Major Water and Sewer Lines, delineates major site sewer lines.

2. Water Supply

The Waimano Ridge has its own source storage, pumping and distribution system. Water from a deepwell system is pumped to a 100,000 gallon intermediate reservoir. It is pumped from this reservoir to two storage tanks located north of the existing buildings. The main water system is distributed through 6-inch lines to the existing WTSH facilities, supplying domestic and fire-flow water for the complex. The projected DOH Laboratory Facility will connect to the existing water system with a 12-inch line.

The existing water system appears adequate for current domestic water needs. However, while there appears to be sufficient water storage capacity for fire protection, the existing water line size is inadequate. A new 12-inch line from the water storage tanks to the Hale Complex may be needed for fire protection capacity. Figure 9 delineates major elements of the on-site water system.



LEGEND		
SYMBOL	KEY	DESIGNATION
	WATER LINE	W ₆
	SIZE OF LINE	
	SEWER LINE	S ₁₂
	SIZE OF LINE	

WAIMANO RIDGE MASTER PLAN

FIGURE 9: Major Water & Sewer Lines

0 50 250 800

2.0 1.0 .50

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An assessment of the existing storage tanks and estimates for repair of existing deficiencies was made by the State of Hawaii Department of Accounting and General Services in December 1991. This is presented as Appendix J of this volume.

3. Drainage System

The current on-site drainage system consists of swales, lined channels, and roadway culverts that pipe stormwater run-off into the adjacent valleys. There appear to be no current on-site drainage problems. City and County drainage standards require that future development at the site avoid increases to present run-off. Rainwater storage or retention basins and debris barriers may have to be considered to accommodate these requirements in developing new facilities at Waimano Ridge.

4. Site Electrical Systems

A reconnaissance was conducted at the Waimano Ridge to assess the condition and improvement needs of on-site electrical systems. The following summarizes its findings:

Electrical power, telephone, and fire alarm systems available at the site. No Cable TV or site lighting systems exist. The exterior power distribution and telephone systems are relatively new and in excellent condition. The present fire alarm system conforms to minimum code requirements. Building electrical power systems, however, are in various states of repair. Many building power systems are antiquated and appear in need of updating. Building telephone systems evidence a similar need for updating. Electrical engineering recommendations include undergrounding of the exterior power and telephone systems, establishment of a modern site lighting system, an upgrading of fire alarm systems, and establishment of automated building surveillance measures.

5. Mechanical Systems

Building mechanical systems were found to be in need of updating and repair. The following are overview and building-specific findings by the project mechanical engineer:

"Waimano Training School and Hospital is an outdated health facility with buildings ranging in age from thirteen to fifty-four years old. Many of the plumbing fixtures are antiquated and needs to be replaced along with the piping. Firesprinkler lines also show signs of age.

The administration is very concerned about meeting code requirements for the health facility. This includes replacing the existing fixtures with those designed for the handicapped. In many cases, it may be necessary to rearrange the fixtures which is a very costly procedure. Other problems include the safe disposal of asbestos insulation on hot water piping and storage tanks and the lack of ventilation. In all buildings which patients frequent, the administration requests the installation of temperature regulators." As with the preceding measures, this last request is a code requirement.

E. POTENTIAL SITE DEVELOPMENT SUITABILITY

Because of its accessible ridgetop location, open space qualities, view opportunities, and developed infrastructure systems, the Waimano Ridge, with further improvement, can be made suitable for WTTC, Department of Health, and appropriate community uses. As the previous narratives have indicated, while certain site factors may impose strongly formative influences on organization of the site for future uses, most existing site conditions will not offer serious constraints to development. Rather, comprehensive organization of the site and its constituent facilities can provide opportunities for improving the efficiency of facility relationships and on-site utility networks.

Of the physical and regulatory conditions examined, three factors appear to be the most directly