

## Technical Memorandum

Date October 2008

Project Tennessee State University Campus Master Plan

Subject 4. Future Campus Requirements
4.5 Utility Infrastructure Requirements

4.5.1 Domestic Water & Fire Protection

From Barge Cauthen Associates

To Tennessee State University

The objective of this work is to address the future campus infrastructure growth needs.

## 1. DOMESTIC & FIRE PROTECTION WATER

## Introduction

The Tennessee State University (TSU) domestic and fire protection water distribution system analysis looks at present infrastructure conditions and proposed Master Plan campus flow characteristics and capacities. This analysis is used to identify system vulnerabilities that exist in terms of water volumes and pressures and propose possible future improvements to alleviate problems arising from these vulnerabilities. As in the Existing Campus Conditions section of this Master Plan, the water distribution system analysis includes both the public and private portions of the water system.

The proposed Master Plan values are broken up into two planning periods (Short Range and Long Range). As such, the Short Range Planning Period will include the Brown-Daniel Library Expansion. The Long Range Planning Period will include the remaining proposed buildings.

## **Analysis**

All standard building improvements (domestic and fire protection water service lines) necessitated by TSU capital improvement projects are assumed to be designed and financially planned for within the associated project schedule and budget. Therefore these proposed improvements and their corresponding costs have not been included in this Master Plan.

Items or areas of concern are as follows:

• Requirements (flow, installation of backflow prevention devices, installation of master and MXU (radio read) meters on domestic services and/or fire services) of local governing authorities on future development. In general, the local jurisdiction having authority (i.e. Metro Fire Marshall, Metro Water Services) is an unknown variable on future development. Requirements for flows, backflow prevention devices, meters, etc. may play a role in the water distribution system, but cannot be predicted. Finally, open channels of discussion should be maintained with Metro Fire Marshall and Metro Water Services employees concerning metering and backflow prevention.

Future buildings a19 & a20 (Long Range Planning Period) – The 33<sup>rd</sup> Avenue corridor from Albion Street to John A. Merritt Boulevard and projected north to Dr. Walter S. Davis Boulevard is a major utility passage. One of these utilities is an 8-inch water main that could be rerouted, but rerouting the corresponding existing sanitary and storm sewers would be a large scale project. If buildings are constructed in these areas, it is recommended that open air courtyards are developed to work around this utility corridor.