

## T e c h n i c a l M e m o r a n d u m

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Project Tennessee State University Campus Master Plan

Subject 3. Existing Campus Conditions  
3.2 Existing Campus Infrastructure  
3.2.3 Sanitary and Storm Sewer

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To Tennessee State University

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The objective of this work is to discuss the condition and capability of the existing utility systems.

### **1. SANITARY SEWER**

#### **INTRODUCTION**

The existing sanitary sewer system analysis looks at present infrastructure conditions for both the public and private portions of the sanitary sewer system. The delineation of the public sanitary sewer system from the private sanitary sewer system is generally made at the point where the sanitary sewer system serves multiple owners. This delineation can be uncertain throughout the Tennessee State University (TSU) Campus, thus necessitating the need to analyze both portions of the system.

A generalized Existing Sanitary Sewer Plan (3.2.3 figure 1) of the sanitary sewer systems analyzed in this study is included with this report.

#### **ANALYSIS**

The Tennessee State University (TSU) sanitary sewer system analysis is based on historical data, field observation, and coordination with various representatives of the owner and local regulatory agencies. The most recent contacts include representatives of Metro Water Services and both the TSU Department of Facilities Management and TSU Campus Planning Design & Construction.

The portion of the TSU sanitary sewer included in this study is served by two main public combination sewer branches. Both of these branches run in a northeasterly direction on the north side of campus.

The modern sanitary sewer system in and around the TSU campus area is characterized as generally fair to good.

Items or areas of concern are as follows:

- Delineation of public sanitary sewer system from private sanitary sewer system – As with many university campuses, the delineation of the public sanitary sewer system from the private sanitary sewer system is uncertain. This uncertainty is amplified on the north side of the TSU campus.
- Age of infrastructure – With age, the existing clay and brick sewer lines begin to crack and corrode and thus affect flow characteristics and possibly cause failures in the pipe. In addition, other issues, such as infiltration of stormwater and groundwater, and damage to systems due to tree roots and adjacent construction are all likely.
- Facilities Management Building – The deterioration of the sanitary sewer manhole west of the Facilities Management Building due to age has caused flow deficiencies.

## RECOMMENDATIONS

The proposed recommendations for the above mentioned items or areas of concern are as follows:

- Delineation of public sanitary sewer system from private sanitary sewer system – Generally, the sanitary sewer system is considered public if multiple entities are utilizing it. Discussion with Metro Water Services (MWS) should be opened and continued.
- Age of infrastructure – As with many university campuses, the line drawn between public utility mains and private utility services is blurred in and around the TSU campus. As most of the major sewer lines located in and around the TSU campus are the responsibility of the Metropolitan Government of Nashville and Davidson County, planning and maintenance may be left to them. Any improvements or repairs associated with the small private service lines may be best handled on an as-needed basis. TSU should coordinate with Metro Water Services for copies of any televising of sewer pipelines to further identify potential problem areas.
- Facilities Management Building – Given the proposed demolition of the Facilities Management Building, it is advised that no improvements be made at this point in time.

## 2. STORM SEWER

### INTRODUCTION

The existing storm sewer system analysis looks at present infrastructure conditions for both the public and private portions of the storm sewer system.

A generalized Existing Storm Sewer Plan (3.2.3 figure 2) of the storm sewer systems analyzed in this study is included with this report.

### ANALYSIS

The Tennessee State University (TSU) storm sewer system analysis is based on historical data, field observation, and coordination with various representatives of the owner and local regulatory agencies. The most recent contacts include representatives of Metro Water Services and both the TSU Department of Facilities Management and TSU Campus Planning Design & Construction.

The portion of the TSU storm sewer included in this study is served by two main storm sewer branches. One of these branches runs in a northerly direction through the campus and

discharges north of Hale Stadium. The other branch runs in a westerly direction through John L. Driver Avenue.

The modern storm sewer system in and around the TSU campus area is characterized as generally fair to good.

Items or areas of concern are as follows:

- Age of infrastructure – With age, the existing clay and brick sewer lines begin to crack and corrode and thus affect flow characteristics and possibly cause failures in the pipe. In addition, other issues, such as infiltration of stormwater and groundwater, and damage to systems due to tree roots and adjacent construction are all likely.
- Gentry Athletic Complex (Elevator Pit) – During rainfall events, stormwater enters the Gentry Athletic Complex elevator pit. In addition, the open channel stormwater conveyance northeast of the Gentry Athletic Complex is a maintenance concern.
- Gentry Athletic Complex (Northwest Parking) – Standing water occurs at the parking area located at the northwest corner of the Gentry Athletic Complex. The overflow of this standing water has created an erosion and undermining issue with the downhill sidewalk and stairs.
- Brown-Daniel Library & McCord Hall – The storm sewer system servicing the Brown-Daniel Library drains to a sump in the basement and causes water problems in the basement and the building's foundation drainage system is inadequate. The storm sewer system servicing McCord Hall has collapsed.
- Hale Stadium – Surface stormwater enters the northwest football locker room.
- Elliot Hall – Groundwater enters the building at the southeast and northwest elevations.

## RECOMMENDATIONS

The proposed recommendations for the above mentioned items or areas of concern are as follows:

- Age of infrastructure – As with many university campuses, the line drawn between public utility mains and private utility services is blurred in and around the TSU campus. As most of the major sewer lines located in and around the TSU campus are the responsibility of the Metropolitan Government of Nashville and Davidson County, planning and maintenance may be left to them. Any improvements or repairs associated with the small private service lines may be best handled on an as-needed basis. TSU should coordinate with Metro Water Services for copies of any televising of sewer pipelines to further identify potential problem areas.
- Gentry Athletic Complex (Elevator Pit) – The Gentry Athletic Complex elevator pit and open channel stormwater conveyance conditions are currently being evaluated by a consultant to the Tennessee Board of Regents.
- Gentry Athletic Complex (Northwest Parking) – The Gentry Athletic Complex standing water and erosion issues are currently being evaluated by a consultant to the Tennessee Board of Regents.
- Brown-Daniel Library & McCord Hall – The storm sewer system servicing these buildings should be evaluated and repaired. The Library expansion may present an opportunity for this evaluation and repair. The proposed storm sewer system

improvements shown on the generalized Proposed Storm Sewer Plan (6.5.3 figure 2) will total approximately:

- 1,100 L.F. of 18" RCP storm sewer
- Hale Stadium – Given the proposed rebuilding of Hale Stadium, it is advised that no improvements be made at this point in time.
- Elliot Hall – Given the proposed demolition of Elliot Hall, it is advised that no improvements be made at this point in time.