



STATE OF TENNESSEE  
**DEPARTMENT OF ENVIRONMENT AND CONSERVATION**  
**DIVISION OF WATER RESOURCES**

William R. Snodgrass - Tennessee Tower  
312 Rosa L. Parks Avenue, 11<sup>th</sup> Floor  
Nashville, Tennessee 37243-1102

Preliminary Project Discussion Meeting Agenda  
for Sewage Works Construction Projects

Project Name: **Redevelopment of the Brushy Mountain State Penitentiary – Wastewater Treatment Plant. Refer to Vicinity Map – Attachment A.**

Date of meeting: **October 15, 2018, 10:00 am CST**

Location of meeting:

**TDEC - Division of Water Resources**  
**11th Floor, William R. Snodgrass TN Tower**  
**312 Rosa L. Parks Avenue**  
**Nashville TN 37243-1102**

NPDES Number: **TN0059765**

A. References

- a. Existing WWTP – Description and pictures (Refer to Attachment B)
- b. Redevelopment: Redevelopment of the prison site includes the following amenities:

Current:

- Prison
  - Tours
  - Theater
  - Museum
- Restaurant (120 seats)
- Concert Venue
- Moonshine Distillery

Planned:

- RV Park/Campground
- Hostel
- Restaurant Expansion - additional 100 seats
- Bourbon Distillery

B. Identification of parties

- a. Applicant - **City of Wartburg/Brushy Mountain Group**

- b. Permittee – **Morgan County Economic Development Board (request submitted to Transfer Ownership to City of Wartburg)**
  - c. Consulting Engineer - **Fulghum, MacIndoe & Associates, Inc.**
  - d. Funding Agencies – **Rural Development and Economic Development Authority**
- C. Project Purpose and Objectives – **Review scope of redevelopment of the Brushy Mountain Prison Site and discuss proposed wastewater treatment plant**
- D. Preliminary Engineering Report Requirements
  - a. Alternatives for discharge/disposal characteristics – **NA**
  - b. Alternatives for life cycle cost analysis for discharge/disposal options - **Life cycle cost to be included in PER**
  - c. Alternatives for process selection – **Alternatives Analysis to be included in PER**
  - d. Equipment/process selection anticipated – **Attached Growth/Activated Sludge**
  - e. Plant expansion vs. I&I reduction or existing plant optimization – **NA**
- E. Map of general service area –
  - a. Probable site and construction area - **refer to Attachment C.**
  - b. Adjacent properties – **Frozen Head State Park. Refer to Attachment D.**
  - c. Significant waters of the State - **None**
  - d. Property boundaries – **refer to Attachment E.**
- F. System capacity –
  - a. Hydraulic
    - i. Design Flow – **20,000 gpd**
  - b. Nutrient
    - i. Influent loads – The following loads were presented by the engineer but should be modified to show the anticipated influent characteristics for the initial and future flows. **BOD5 = 250 mg/l; TSS – 250 mg/l; Total Nitrogen (TN) = 45 mg/l; Ammonia Nitrogen (NH3-N) = 25 mg/l**
    - ii. Design Flow - **BOD5 = 50 lbs/d; TSS – 50 lbs/d; Total Nitrogen (TN) = 7.5 lbs/d mg/l; Ammonia Nitrogen (NH3-N) = 5.2 lbs/d**
  - c. Treatment/ Conveyance
    - i. Conveyance – **Low Pressure Sewer. Refer to TDEC Wastewater Project Number : 16-0851**
    - ii. Treatment - **TBD**
- G. Receiving water status - **NA**
- H. Permits -
  - a. NPDES – **Permit renewal and Transfer of Ownership from TDOC to Morgan County Economic Development Board in May 2016.**
  - b. **Request to transfer ownership from Morgan County Economic Development Board to City of Wartburg submitted on September 21, 2018.**
  - c. Individual/general ARAP – **NA**
  - d. Storm water permits and requirements – **as required**
- I. Procurement methodology –
  - a. Design-bid-build - **yes**



Name	Organization	E-mail
Mike MacIndoe	Fulghum MacIndoe & Associates, Inc.	macindoe@fulghummacindoe.com
Pete Waddington	Brushy Mountain Group	pwaddington7@gmail.com
George Garden	TDEC-CO	george.garden@tn.gov
Angela Jones	TDEC-CO	angela.jones@tn.gov
Wade Murphy	TDEC-CO	wade.murphy@tn.gov



## ATTACHMENT B

### EXISTING TREATMENT PLANT

The Treatment was abandoned when the prison shutdown in 2009. However, the plant remained in operation until 2016. The gravity sewer conveying flow from the prison site to the treatment plant was disconnected from the headworks in 2016.

The plant site lies approximately ½-mile south of the prison. The headworks at the plant was upgraded in 2006 with a Lakeside Raptor Micro Strainer in-channel drum screen with quarter-inch bar spacing. The screen was the newest equipment at the plant and was rated at 1.8 mgd. From the headworks, wastewater flows through an abandoned wet well that contained pumps for the peak storage basin (abandoned). The piping and support rails for the pumps are significantly deteriorated and are no longer operational.

Flow continues through the original plant headworks channels which at one time likely contained a coarse screen, flow meter and a comminutor.

Wastewater then flows into two aeration basins which each have dimensions of 36' by 27' with a 13.75' side water depth and a volume of 100,000 gallons. Air was supplied to the aeration basins with two Gardner Denver Turbo Tron blowers via Chicago Pump Swing Fuser aeration headers.

From the aeration basins, wastewater flows into two rectangular clarifiers that share common wall construction with the aeration basins. Each clarifier is 36' by 6' with a 10' side water depth and a surface area of 216 square feet. The mechanical components and weirs of the clarifiers are excessively corroded. Air lift pumps connect to the return activated sludge (RAS) sumps and pump the RAS to the head of the aeration basins. All pumps are in poor condition. The clarifier effluent flows into a chlorine contact chamber. The effluent pipe extends into Stockstill Creek.

There are two 32,000-gallon aerobic digesters. Air was supplied to the digesters with a Gardner Denver positive displacement blower. Each digester is equipped with a telescoping valve for decanting and can discharge to the sludge drying beds or the truck filling station located adjacent to the headworks. The plant has three drying beds which are each 20 by 40 feet. The beds have been constructed without access for equipment and must be cleaned manually in their current configuration.

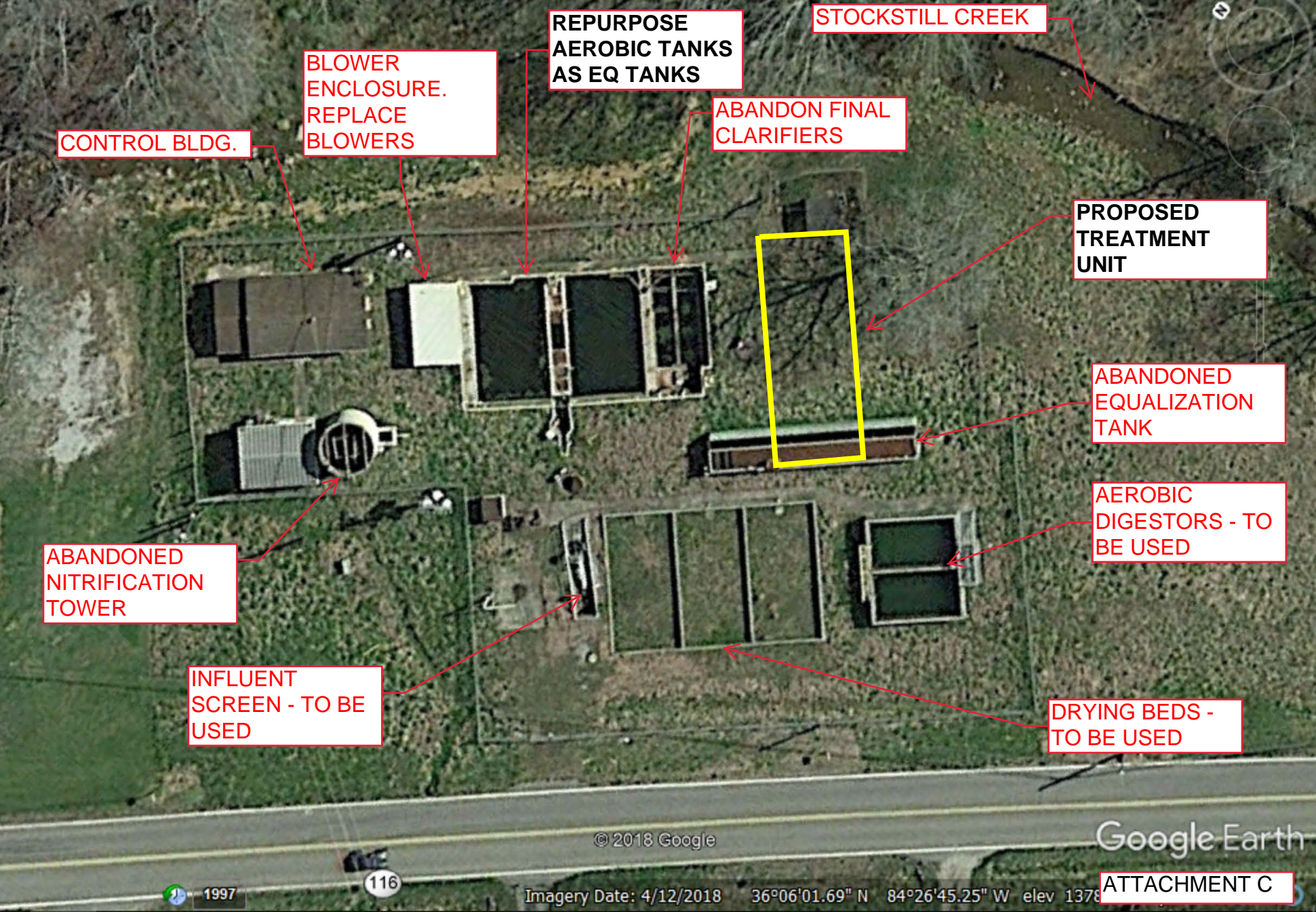
EXISTING BRUSHY MOUNTAIN WWTP



EXISTING BRUSHY MOUNTAIN WWTP







CONTROL BLDG.

BLOWER ENCLOSURE. REPLACE BLOWERS

REPURPOSE AEROBIC TANKS AS EQ TANKS

STOCKSTILL CREEK

ABANDON FINAL CLARIFIERS

PROPOSED TREATMENT UNIT

ABANDONED EQUALIZATION TANK

AEROBIC DIGESTORS - TO BE USED

ABANDONED NITRIFICATION TOWER

INFLUENT SCREEN - TO BE USED

DRYING BEDS - TO BE USED

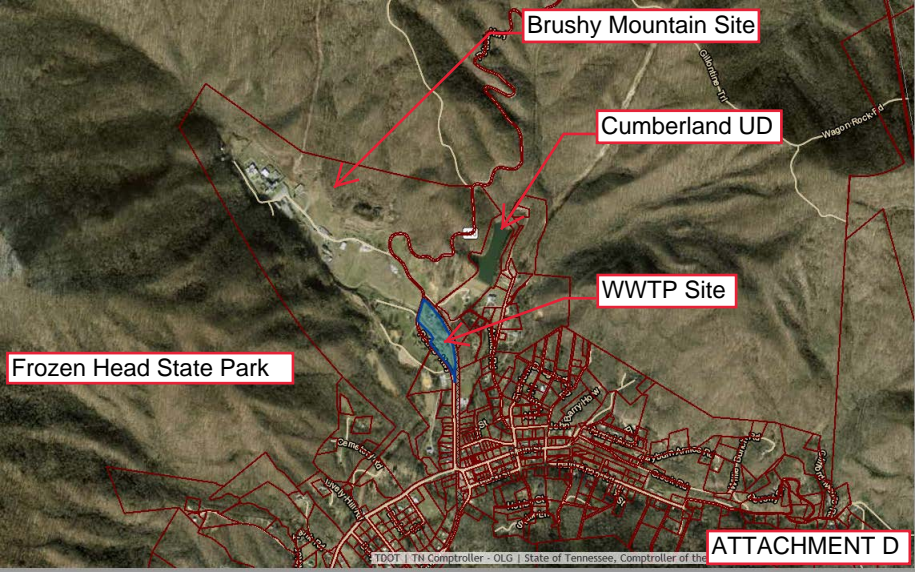
Brushy Mountain Site

Cumberland UD

WWTP Site

Frozen Head State Park

ATTACHMENT D





WWTP Site

Measure

Search

Search Results

Property Detail

Hide Parcel Highlight(s) Clear Selection Completely

County: Morgan  
 Owner: MORGAN CO ECONOMIC DEV BOARD INC  
 Owner 2:  
 Address: STATE ROUTE 116  
 Parcel Number: 099 002.05  
 Deeded Acreage: 10.3  
 Calculated Acreage: 0  
 Subdivision:  
 Subdivision Lot:  
 Date of Imagery: 2015

Click [here](#) for the most up-to-date ownership and assessment information.

[Click here if there is a problem with this property.](#)

Export PDF of this map

The property maps represented on this site are compiled from information maintained by your local county Assessor's office and are a best-fit visualization of how all the properties in a county relate to one another. The property lines are determined by examining detailed property descriptions on deeds and by using surveys created by a licensed surveyor but are not conclusive evidence of property ownership in any court of law. If you feel your property is drawn in error, you should contact your local Assessor's office and work with them to resolve the discrepancy.

ATTACHMENT E