

Town of Thompson's Station  
Utility Board  
Work Session  
September 18, 2019 5:30 p.m.

**I. Purpose / Goals The The Purpose Of This Work Session Will Include The Review Of The 2018 Wastewater System Master Plan, The Recommendations From That Plan, The Status Of Implementing The Plan, And The Next Steps In The Implementation.**

**II. Topics**

1. <!-- [endif] -->Master Plan Overview

<!-- [if !supportLists] -->2. <!-- [endif] -->Wastewater System Growth Projections

<!-- [if !supportLists] -->3. <!-- [endif] -->Wastewater System Model

<!-- [if !supportLists] -->a. <!-- [endif] -->Existing Conditions

<!-- [if !supportLists] -->b. <!-- [endif] -->Future Conditions

<!-- [if !supportLists] -->c. <!-- [endif] -->Schedule

<!-- [if !supportLists] -->4. <!-- [endif] -->Treatment Facilities

<!-- [if !supportLists] -->a. <!-- [endif] -->Existing Condition

<!-- [if !supportLists] -->b. <!-- [endif] -->Alternatives Evaluation

<!-- [if !supportLists] -->c. <!-- [endif] -->Cost Opinion/Schedule

<!-- [if !supportLists] -->5. <!-- [endif] -->Wastewater Disposal

<!-- [if !supportLists] -->a. <!-- [endif] -->Existing Condition

<!-- [if !supportLists] -->b. <!-- [endif] -->Alternatives Evaluation

<!-- [if !supportLists] -->c. <!-- [endif] -->Cost

## Opinion/Schedule

<!-- [if !supportLists]-->6. <!-- [endif]-->Recommendations

<!-- [if !supportLists]-->a. <!-- [endif]-->Recommended  
Alternative

<!-- [if !supportLists]-->b. <!-- [endif]-->Costs/Funding

<!-- [if !supportLists]-->c. <!-- [endif]-->Risks

<!-- [if !supportLists]-->7. <!-- [endif]--> **Implementation Status**

- a. Items Agreed to by the City
- b. Action Items Status
- c. Schedule

### **Barge Wastewater Presentation**

Documents:

[T\\_STATION\\_MASTER PLAN IMPLEMENTATION REVIEW\\_091619\(3\).PDF](#)

*This meeting will be held at 5:30 p.m. at the Thompson's Station Community Center  
1555 Thompson's Station Rd West*

Thompson's Station, Tennessee

# Wastewater Master Plan Implementation Review Workshop

September 18, 2019

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# Master Plan Implementation Review

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- Master Plan Overview
- Treatment Facilities Overview
- Wastewater Disposal Overview
- Recommendations
- Implementation Status
- Next Steps



# 2018 Master Plan Overview

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- Population expected to continue growth
  - Reach >20,000 by 2048
- Collection System
  - Modeling revealed no hydraulic constraints
  - One recommended project along US-31
  - Recommend new developments contribute funds to tie-in to wastewater system
- Treatment/Disposal
  - Recommend upgrading and maintaining one WWTP
  - Utilize purchased property for drip irrigation

# Master Plan Projects

Project	Construction Cost Opinion	Project Start
Regional Plant – Cell #1 Repair	\$0.3 million	May 2020
Hill Property Drip Fields	\$2.9 million*	Ongoing
Regional Plant – MBR Installation – 0.75 MGD	\$8.5 million	2020
Alexander Site Drip Fields	\$8.6 million	2023
Regional Plant – MBR Expansion – 1.0 MGD	\$3.4 million	2023
Regional Plant – MBR Expansion – 1.5 MGD	\$3.5 million	2038

\*Contract amount



# Treatment Facilities

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## Heritage Commons Facility

- Two Sheaffer System ponds
- Existing Avg. Daily Flows: 18,000 gpd
- Existing Capacity: 30,000 gpd

## Regional Treatment Facility

- Two Sheaffer System ponds
- Existing Avg. Daily Flows: 297,000 gpd
- Existing Rated Capacity: 500,000 gpd  
(permitted: 470,000 gpd)



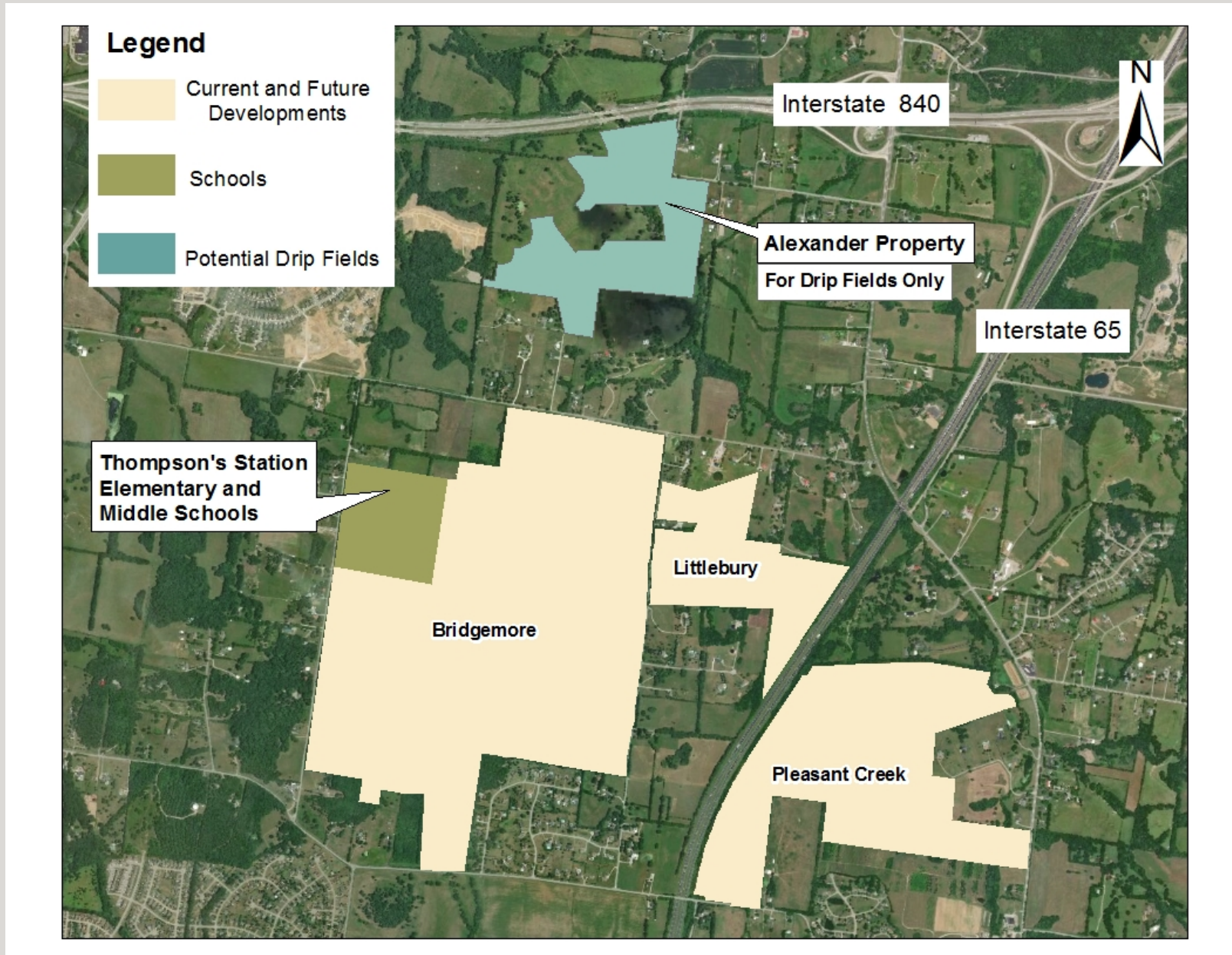
# Treatment Facilities Alternatives Evaluation

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- Regional Treatment Facility Alternative 1
  - Upgrade Existing Lagoon System
- Regional Treatment Facility Alternative 2 – **Selected Alternative**
  - Expand Facility with Alternate Technology
    - Membrane Bioreactors – **Selected Technology**
    - Sequencing Batch Reactors
    - Oxidation Ditch
    - Conventional Activated Sludge
- Regional Treatment Facility Alternative 3
  - Construct a Second Regional Plant



# Treatment Facilities – Possible Third Facility





# Wastewater Disposal Sites



# Wastewater Disposal Sites, Cont.

Site Name	Total Acres	Suitable Area (ac)	Utilized Area (ac)	WW Disposal Capacity (mgd)
Ozzad Property	33	20	20	0.20
Tollgate	30	8	8	0.08
Hill Property	63	24*	0	0.24*
Alexander Property	107	67*	0	0.67*

\*Further investigation/analysis necessary to confirm

# Recommended Master Plan Projects

Project	Recommended Project Start	Original Recommended Project Start	Status
Regional Plant – Cell #1 Repair	May 2020	2018	Recommend completing as change order to Hill Property Drip Field Project
Hill Property Drip Fields	Ongoing	2019	
Regional Plant – MBR Installation – 0.75 MGD	2020	2020	Exploring funding options
Alexander Site Drip Fields	2023	2028	Soils analysis to begin before end of 2019
Regional Plant – MBR Expansion – 1.0 MGD	2023	2023	Expansions can be proactively implemented as growth occurs
Regional Plant – MBR Expansion – 1.5 MGD	2038	2038	



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*Thank You!*



# Master Plan – Treatment Options Evaluated

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- Alternative 1: Expand existing Regional Plant lagoon system to 1.5 MGD
  - Range \$31M to \$35M depending on method to serve drip fields
- Alternative 2: Build 1.5 MGD MBR Plant at Regional Facility Site
  - Range \$28.6M to \$33M depending on method to serve drip fields
- Alternative 3: Construct Second Regional Facility
  - \$30M