

**NOTICE OF SPECIAL CITY COUNCIL MEETING  
CITY OF TOMBALL, TEXAS**



**MONDAY, NOVEMBER 19, 2018**

**5:00 P.M.**

Notice is hereby given of a meeting of the Tomball City Council, to be held on Monday, November 19, 2018 at 5:00 P.M., City Hall, 401 Market Street, Tomball, Texas 77375, for the purpose of considering the following agenda items. All agenda items are subject to action. The Tomball City Council reserves the right to meet in a closed session for consultation with attorney on any agenda item should the need arise and if applicable pursuant to authorization by Title 5, Chapter 551, of the Texas Government Code.

- 1.0 Call to Order
- 2.0 Public Comments and Receipt of Petitions *[At this time, anyone will be allowed to speak on any matter other than personnel matters or matters under litigation, for length of time not to exceed three minutes. No Council/Board discussion or action may take place on a matter until such matter has been placed on an agenda and posted in accordance with law.]*
- 3.0 Workshop Session:
  - 3.1 The Tomball City Council will enter into a Workshop Session regarding the City of Tomball Water and Wastewater Master Plan
- 4.0 Adjournment

## CERTIFICATION

I hereby certify that the above notice of meeting was posted on the bulletin board of City Hall; City of Tomball, Texas, a place readily accessible to the general public at all times, on the 15th day of November 2018 by 5:00 p.m., and remained posted for at least 72 continuous hours proceeding the scheduled time of said meeting.

*Doris Speer*

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Doris Speer  
City Secretary, TRMC

This facility is wheelchair accessible and accessible parking spaces are available. Requests for accommodations or interpretive services must be made 48 hours prior to this meeting. Please feel free to contact the City Secretary's office at (281) 290-1002 or FAX (281) 351-6256 for further information.

AGENDAS MAY ALSO BE VIEWED ONLINE AT [www.ci.tomball.tx.us](http://www.ci.tomball.tx.us).

# Special City Council

## Agenda Item

### Data Sheet

Meeting Date: November 19, 2018

**Topic:**

The Tomball City Council will enter into a Workshop Session regarding the City of Tomball Water and Wastewater Master Plan

**Background:**

**Origination:**

**Recommendation:**

**Party(ies) responsible for placing this item on agenda:**

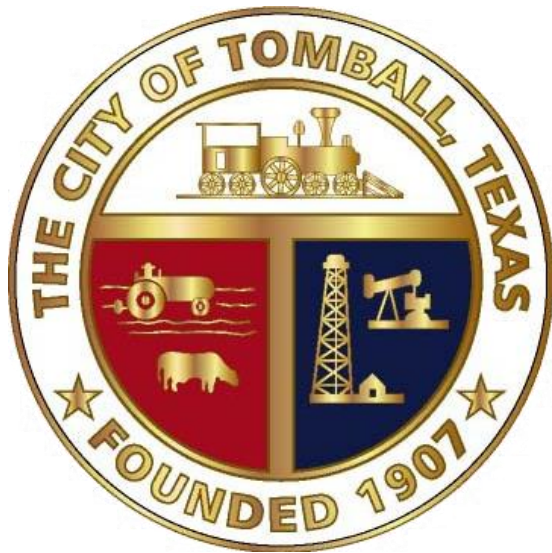
| ACTION TAKEN                                                         |                                                                                                      |       |
|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-------|
| Approval<br><input type="checkbox"/> Yes <input type="checkbox"/> No | Readings Passed<br><input type="checkbox"/> 1 <sup>st</sup> <input type="checkbox"/> 2 <sup>nd</sup> | Other |

**ATTACHMENTS:**

Tomball Water Master Plan



**FREESE  
AND  
NICHOLS**



# **City of Tomball**

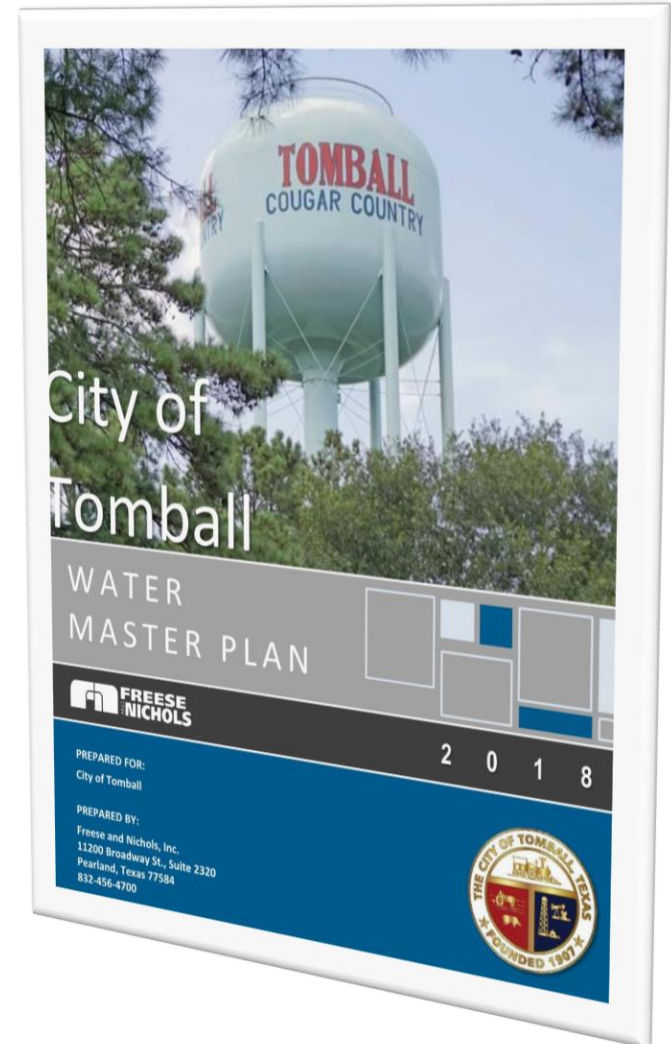
## **WATER MASTER PLAN**

### **CITY COUNCIL PRESENTATION**

**November 19, 2018**

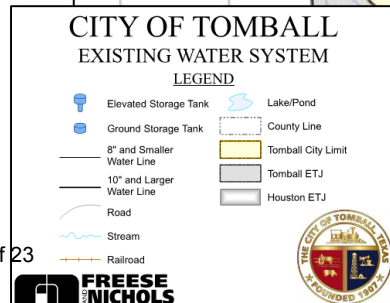
# Water Master Plan Components

- Water **demand projections**
- Identification of existing and future **system deficiencies**
- **Prioritized, phased CIP** with **cost estimates** *and* **business case** for recommended projects
- Very clear, easy to read **CIP maps** that show location and phasing of projects
- Comprehensive **Master Plan Report**
- **Model tool** for dealing with future development





- [illegible]

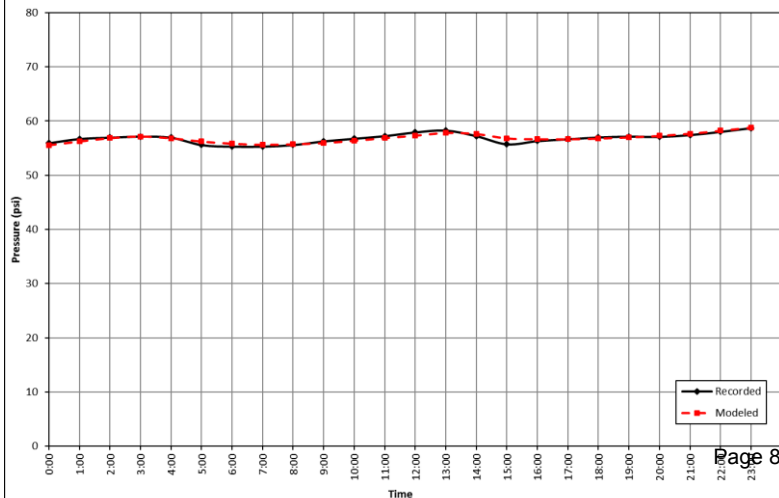


# Water Model Development and Calibration

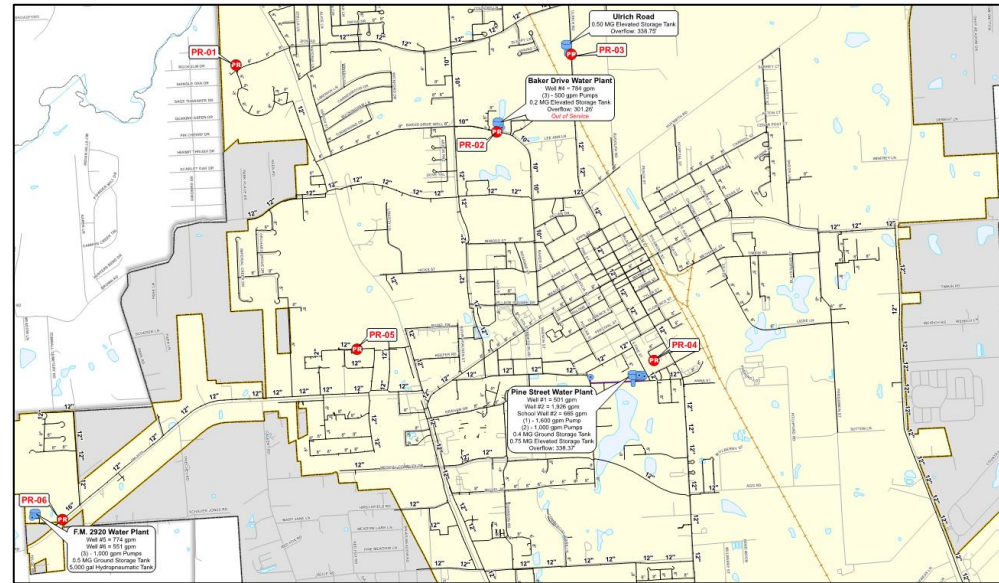
- Hydraulic model based on GIS data
- August 4, 2017 calibration
- Pressure testing at 8 locations
- Very good calibration results

## Calibration Results

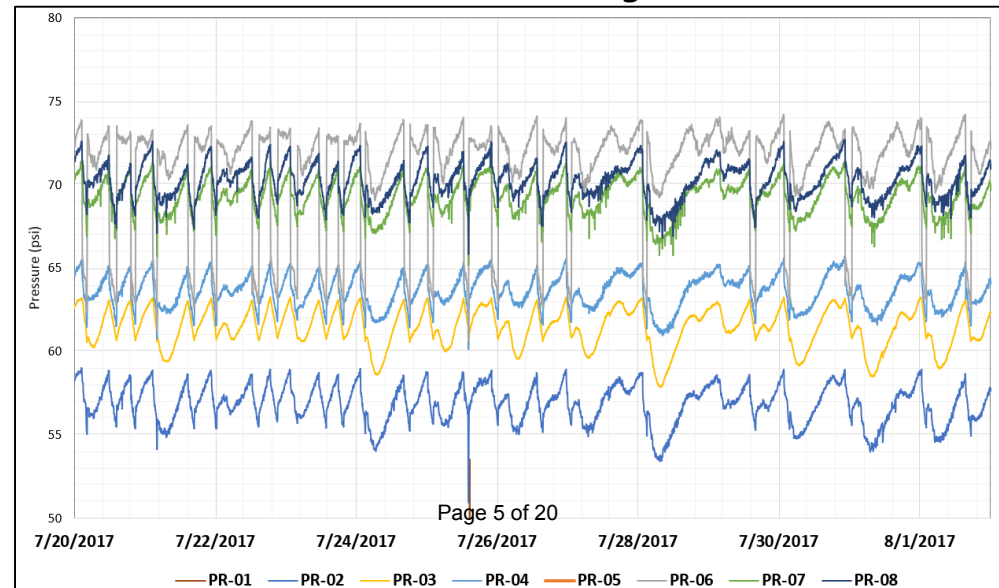
City of Tomball  
Pressure Recorder #2 - 205545 - Ground Elevation 192'  
July 26, 2017



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## Pressure Testing



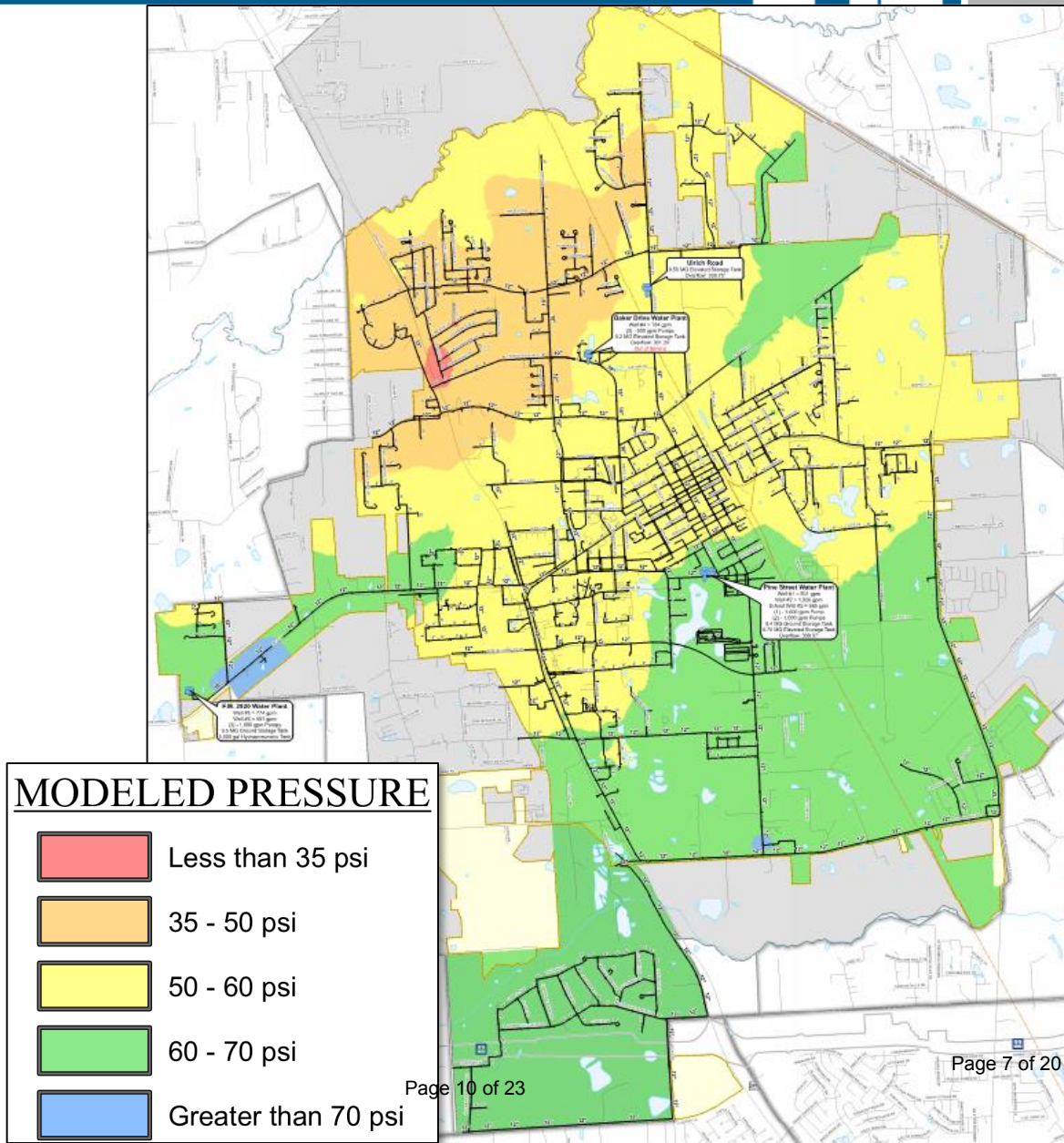
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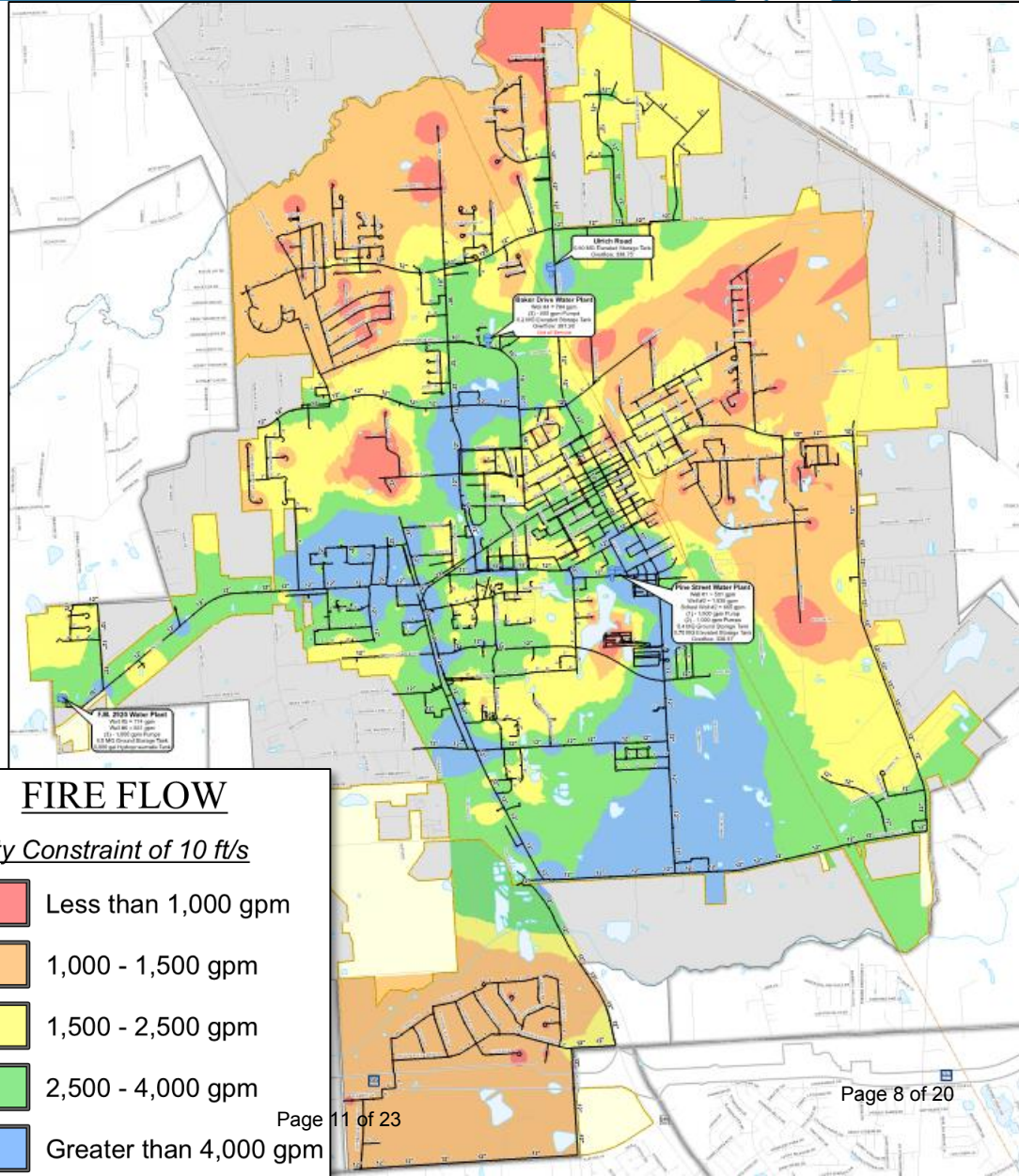
- Texas Commission on Environmental Quality
  - Chapter 290 of Texas Local Government Code
- Minimum System Pressure = 35 psi under normal conditions
  - Potential for untreated groundwater or other contaminate infiltration during water line break or fire fighting event
  - FNI recommends 40 psi minimum pressure to act as a buffer to prevent contaminant intrusion during events
- Fire Flows
  - Minimum residual pressure of 20 psi
  - Range of fire flow = 1,000 to 5,000 gallons per minute depending on land use type



# Minimum Pressure

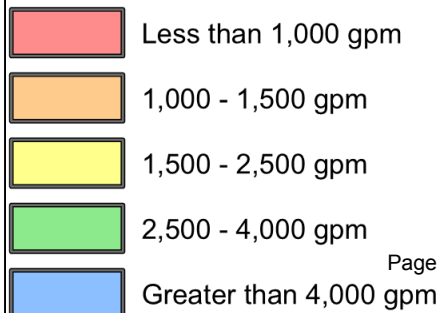


# Available Fire Flow



## FIRE FLOW

*Velocity Constraint of 10 ft/s*



# Water Service Area and Anticipated Developments



## CITY OF TOMBALL

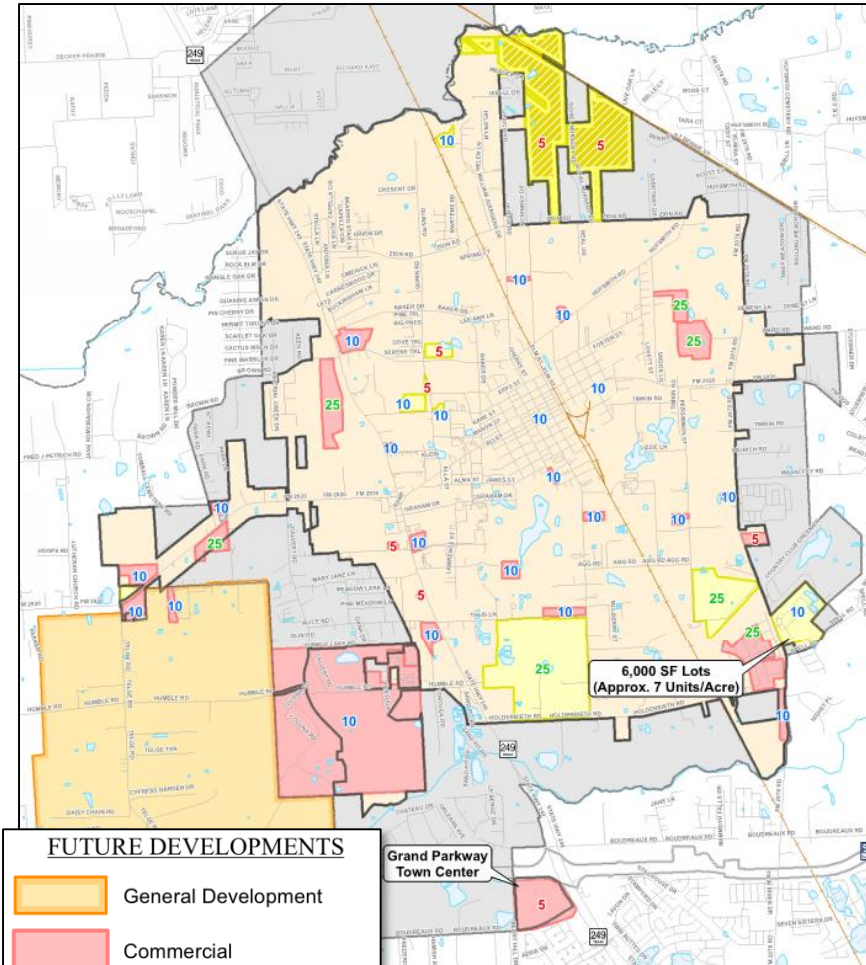
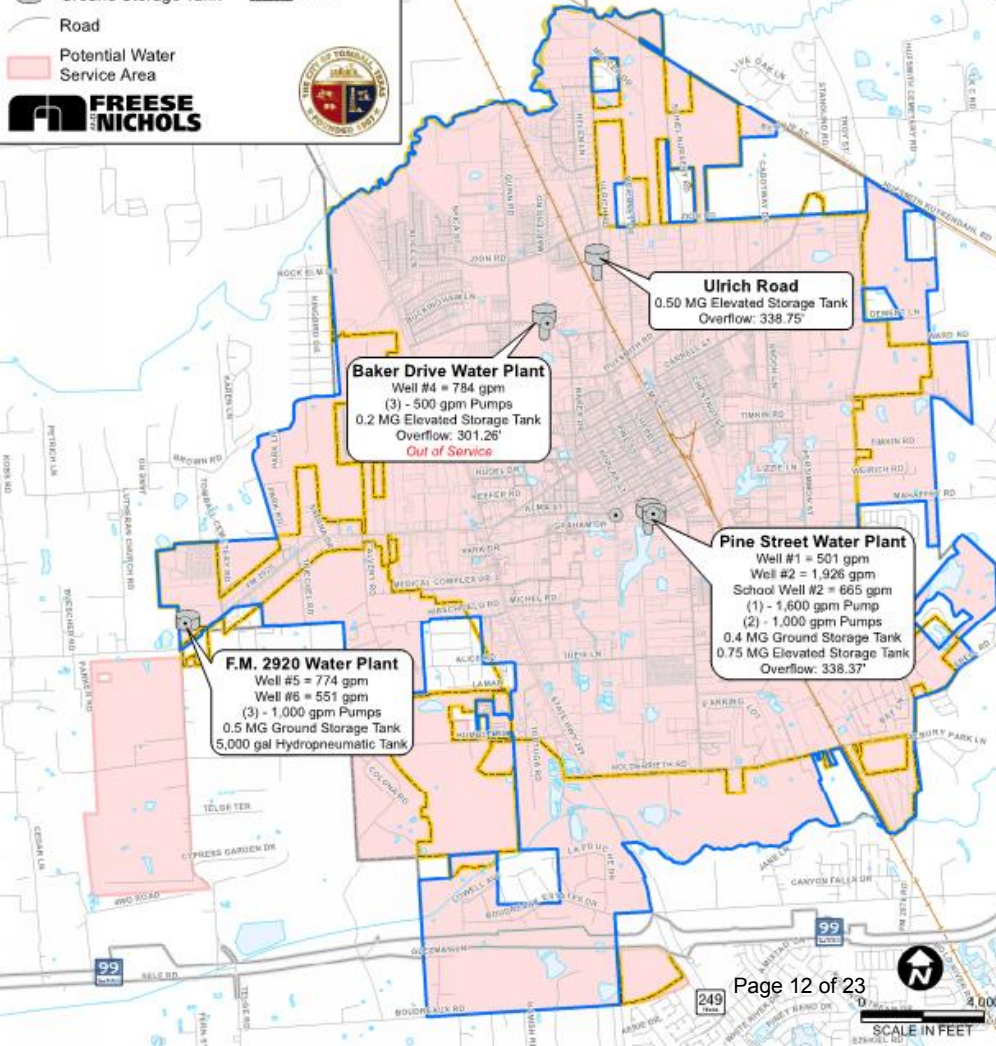
### WATER SERVICE AREA

#### LEGEND

- Water Well
- Elevated Storage Tank
- Ground Storage Tank
- Road
- Potential Water Service Area
- Water CCN
- Tomball City Limit
- ETJ



## Water Master Plan Study Area



### FUTURE DEVELOPMENTS

- General Development
- Commercial
- Residential**
  - Medium Density\* (4.5 Units/Acre)
  - Combined Low and Medium Density\* (2.0 - 4.5 Units/Acre)

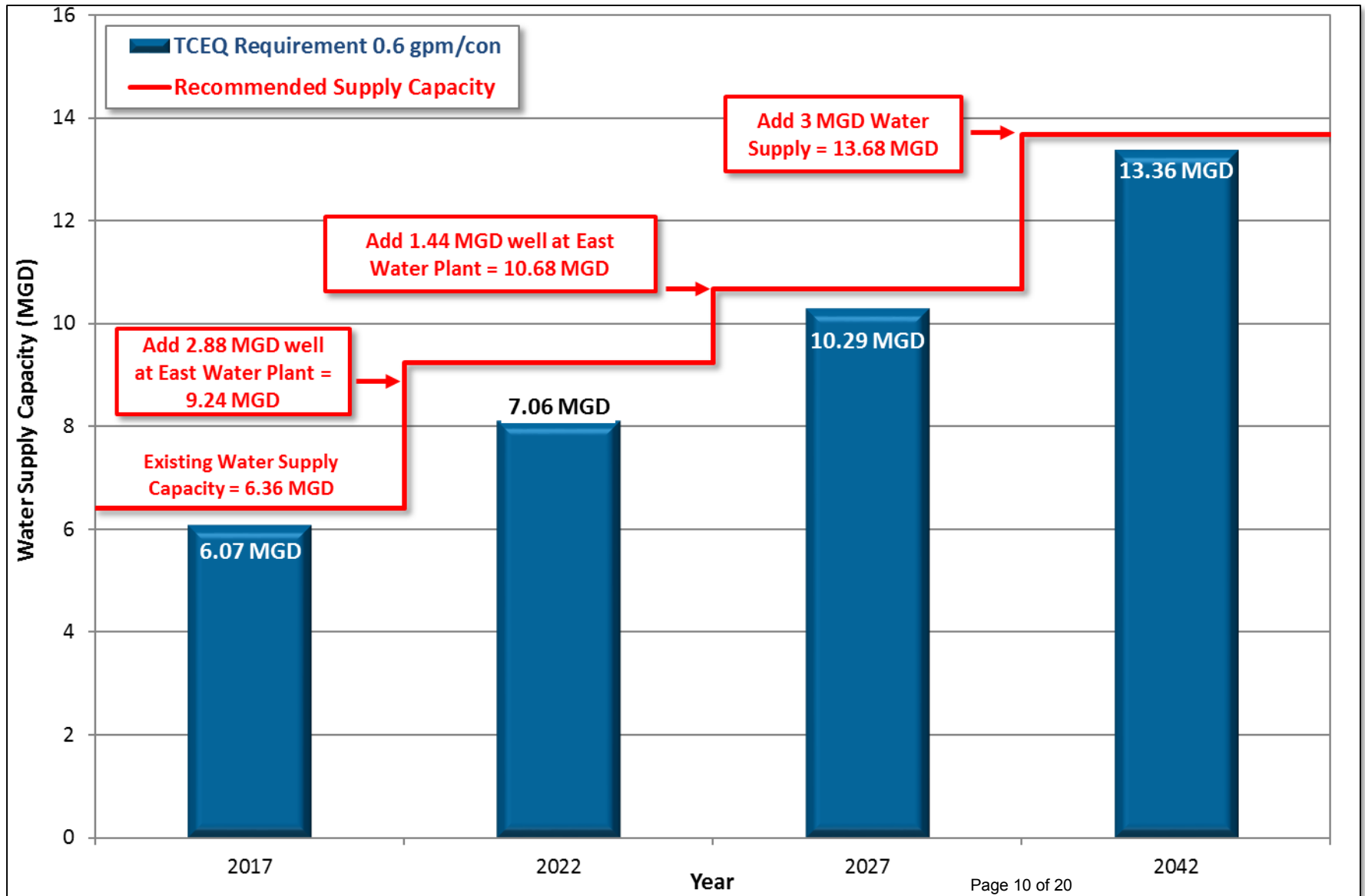
\*Dwelling Units/Acre defined in City's 2009 Comprehensive Plan

### Planning Periods

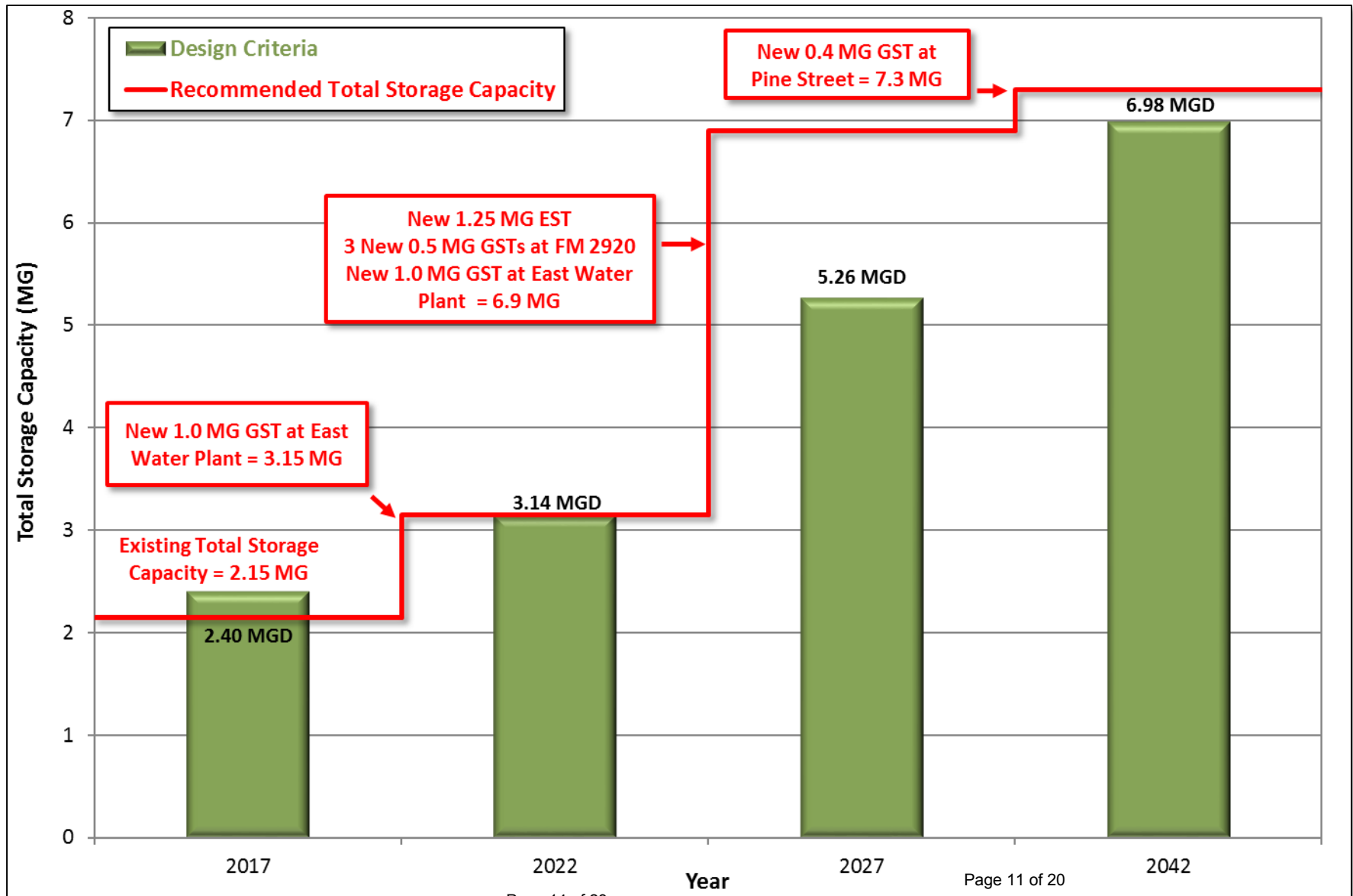
**5 year**  
**10 year**  
**25 year**



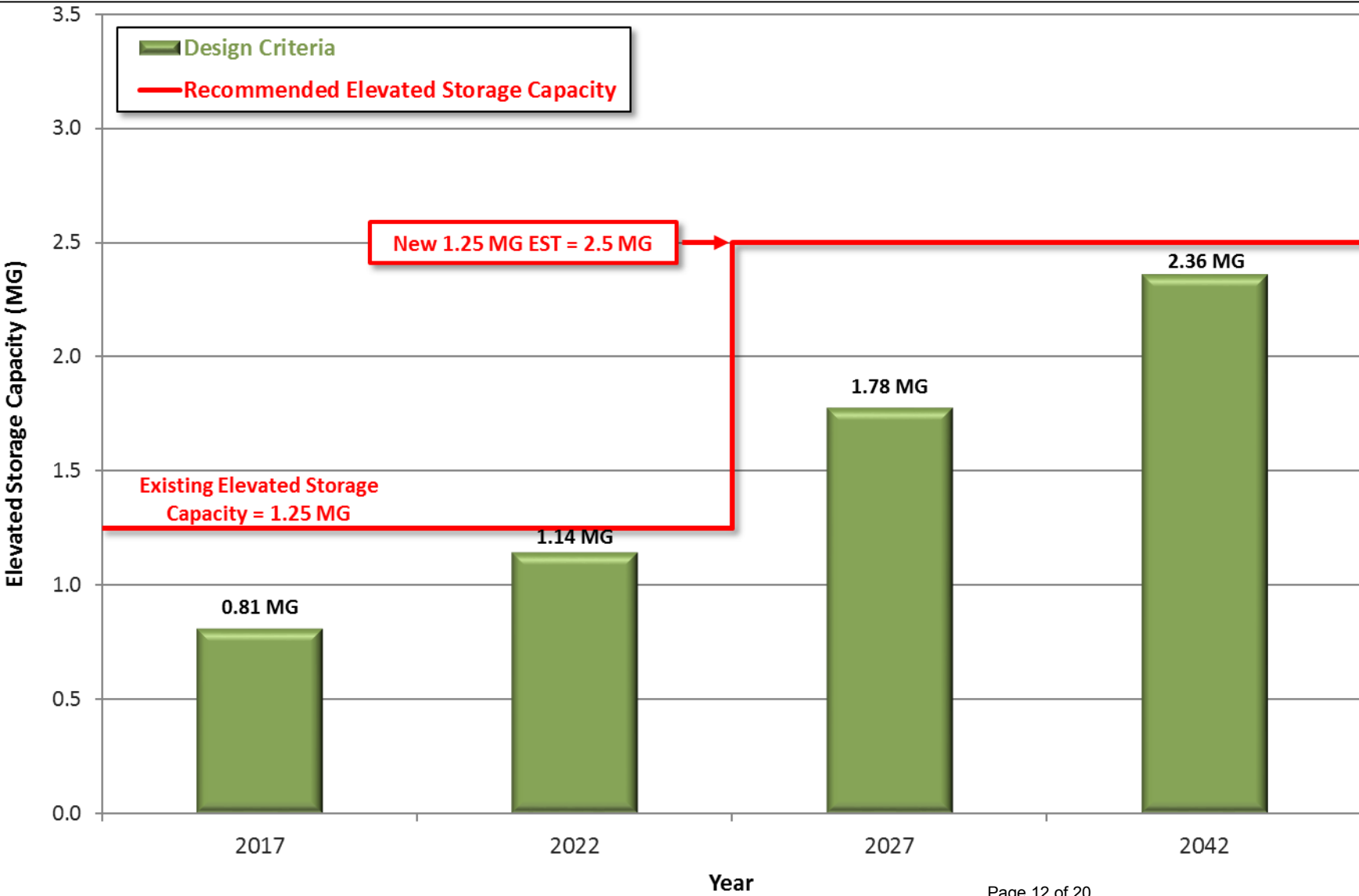
# Projected Water Supply Capacity



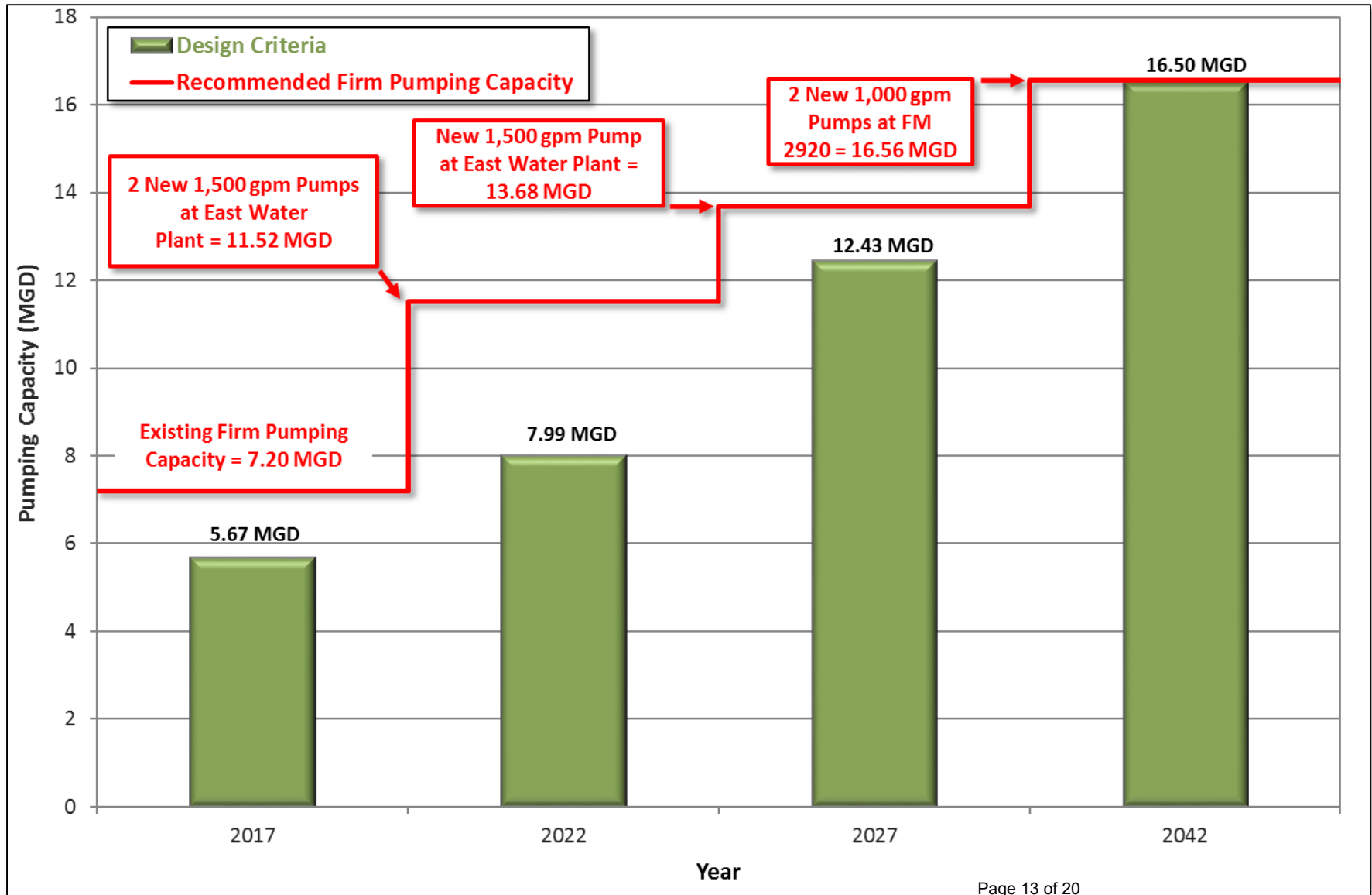
# Projected Total Storage Capacity



# Projected Elevated Storage Capacity



# Projected Pumping Capacity





## 0-5 Year Projects

- New East Water Plant (groundwater well, storage, pumps)
- 1.2 Miles of New Water Lines

## 6-10 Year Projects

- New Elevated Storage Tank
- Expand FM 2920 and East Water Plants
- 4.1 Miles of New Water Lines

## 11-25 Year Projects

- Expand FM 2920 and Pine Street Water Plants
- 1.8 Miles of New Water Lines

## Timeline Pending Projects

- 1.4 Miles of New Water Lines
- Small Projects/System Enhancement

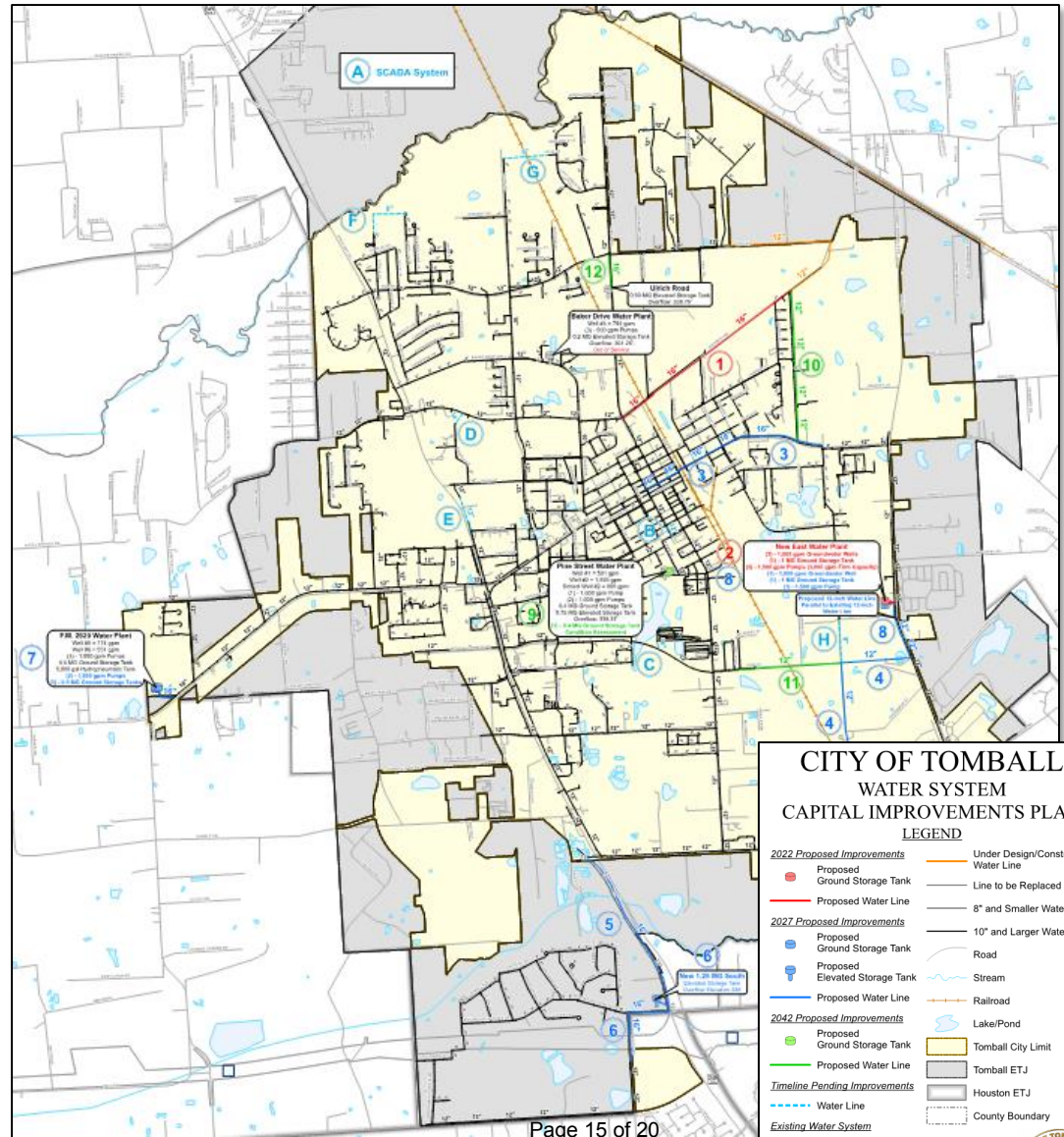
# Water System Capital Improvements Plan



| Phase                   | CIP              | Cost <sup>(1)</sup> |
|-------------------------|------------------|---------------------|
| <b>0-5<br/>Year</b>     | Distribution     | \$1,477,900         |
|                         | Supply           | \$14,882,400        |
|                         | <b>Sub-total</b> | <b>\$16,360,300</b> |
| <b>6-10<br/>Year</b>    | Distribution     | \$11,693,400        |
|                         | Supply           | \$10,044,900        |
|                         | <b>Sub-total</b> | <b>\$21,738,300</b> |
| <b>11-25<br/>Year</b>   | Distribution     | \$1,906,800         |
|                         | Supply           | \$836,200           |
|                         | <b>Sub-total</b> | <b>\$2,743,000</b>  |
| <b>Timeline Pending</b> |                  | <b>\$1,852,500</b>  |
| <b>Total</b>            |                  | <b>\$42,694,100</b> |

(1) All costs are in 2018 dollars

**Note: CIP Cost Estimates include  
30% Contingency and 15-20%  
Engineering Services**



# 5-year Water CIP Projects



| Project                      | Project Description                            | Cost          |
|------------------------------|------------------------------------------------|---------------|
| 2                            | 12-inch Water Line along Hufsmith Road         | \$ 988,500    |
| 3                            | New 3,000 gpm East Water Plant with 1.0 MG GST | \$ 9,540,000  |
| Subtotal                     |                                                | \$ 10,528,500 |
| 30% Construction Contingency |                                                | \$ 3,158,600  |
| Subtotal                     |                                                | \$ 13,687,100 |
| 15-20% Engineering Services  |                                                | \$ 2,673,200  |
| Total                        |                                                | \$ 16,360,300 |

# 10-year Water CIP Projects



| Project                      | Project Description                                       | Cost                 |
|------------------------------|-----------------------------------------------------------|----------------------|
| 3                            | 12/16-inch Water Line along Main Street                   | \$ 1,491,500         |
| 4                            | 12-inch Water Line along Medical Complex Drive            | \$ 699,000           |
| 5                            | 16-inch Water Line along SH 249                           | \$ 1,048,000         |
| 6                            | 1.25 MG EST and 16-inch Water Line                        | \$ 4,392,000         |
| 7                            | 2,000 gpm FM 2920 Pump Station Expansion with 1.5 MG GSTs | \$ 2,848,000         |
| 8                            | 1,500 gpm East Water Plant Expansion with 1.0 MG GST      | \$ 3,591,000         |
| Subtotal                     |                                                           | \$ 14,069,500        |
| 30% Construction Contingency |                                                           | \$ 4,220,900         |
| Subtotal                     |                                                           | \$ 18,290,400        |
| 15-20% Engineering Services  |                                                           | \$ 3,447,900         |
| <b>Total</b>                 |                                                           | <b>\$ 21,738,300</b> |

# 25-year Water CIP Projects



| Project                      | Project Description                                                                  | Cost                |
|------------------------------|--------------------------------------------------------------------------------------|---------------------|
| 9                            | 0.4 MG Pine Street Water Plant GST and Pine Street Pump Station Condition Assessment | \$ 536,000          |
| 10                           | 12-inch Water Lines along Snook Lane, Lovett Street and Zion Road                    | \$ 636,750          |
| 11                           | 12-inch Water Line along Agg Road                                                    | \$ 415,500          |
| 12                           | 16-inch Water Line along Ulrich Road                                                 | \$ 223,000          |
| Subtotal                     |                                                                                      | \$ 1,811,300        |
| 30% Construction Contingency |                                                                                      | \$ 543,500          |
| Subtotal                     |                                                                                      | \$ 2,354,800        |
| 15-20% Engineering Services  |                                                                                      | \$ 388,200          |
| <b>Total</b>                 |                                                                                      | <b>\$ 2,743,000</b> |

# Timeline Pending Water CIP Projects



| Project                      | Project Description                    | Cost                |
|------------------------------|----------------------------------------|---------------------|
| A                            | SCADA System                           | \$ 500,000          |
| B                            | 12-inch Water Line along Oak Street    | \$ 75,000           |
| C                            | 8-inch Water Line in Corral RV Park    | \$ 39,000           |
| D                            | 8-inch Water Line along Liberty Lane   | \$ 47,500           |
| E                            | 12-inch Water Line along SH 249        | \$ 151,500          |
| F                            | 8-inch Water Line along Stella Lane    | \$ 151,000          |
| G                            | 8-inch Water Line along Julia Lane     | \$ 205,000          |
| H                            | 8-inch Water Line along Persimmon Road | \$ 135,000          |
| Subtotal                     |                                        | \$ 1,304,000        |
| 30% Construction Contingency |                                        | \$ 391,300          |
| Subtotal                     |                                        | \$ 1,695,300        |
| 15-20% Engineering Services  |                                        | \$ 157,200          |
| <b>Total</b>                 |                                        | <b>\$ 1,852,500</b> |

# Questions?



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713-600-6824