

# Public Meeting

Wastewater Treatment Plant Discharge Permit Amendment  
Permit No. WQ0011041002

March 30, 2023



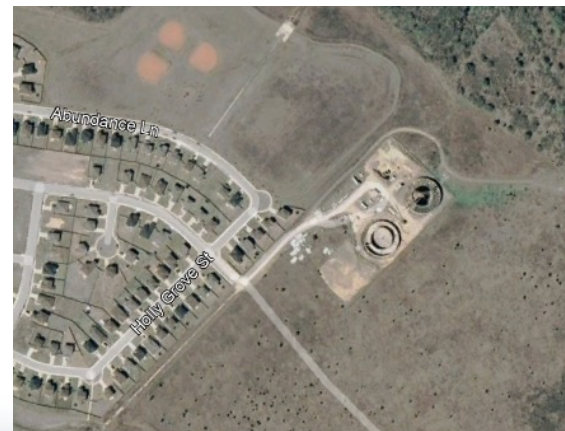
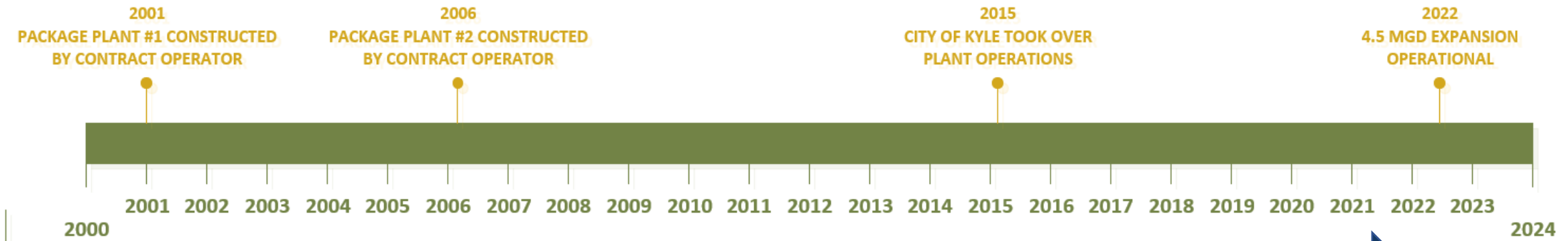
# Introductions

- **Yvonne Gil-Vallejo**, City of Kyle Project Manager
- **Tim Samford**, City of Kyle Treatment Operations Manager
- **Robert Defreitas**, City of Kyle Chief WWTP Operator
- **Gopal Guthikonda**, STV Technical Advisor
- **Felipe Gutierrez**, STV Engineer
- **Raj Bhattarai**, STV Engineer

# Presentation Outline

- City of Kyle's Wastewater Treatment Plant (WWTP) Overview
- Growth Projections and Phasing Plan
- Discharge Permit
- WWTP Operations
- Additional Planned Improvements
- Questions and Answers

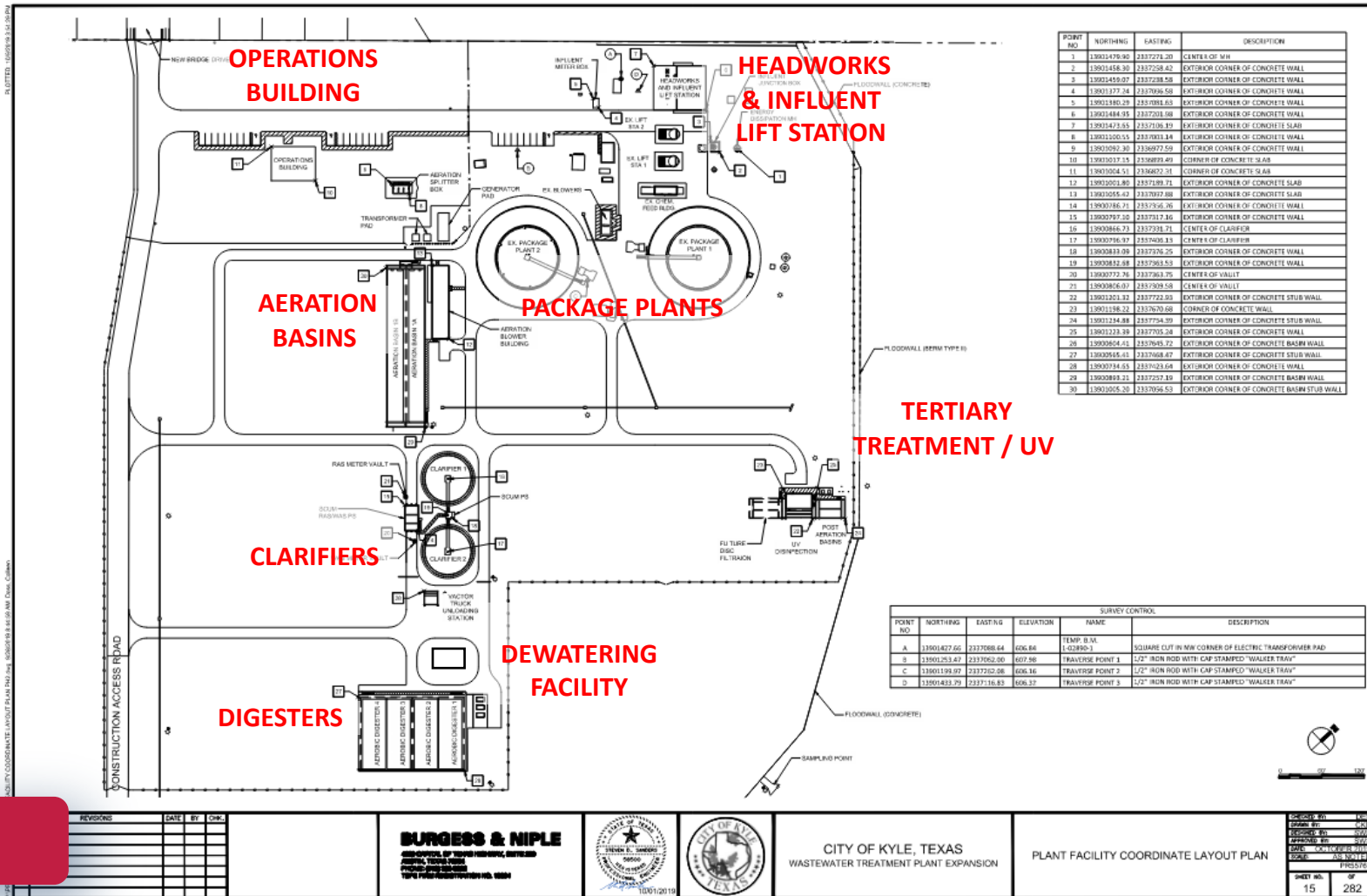
# WWTP History



- Kyle experienced higher than expected growth
- Plant operational issues prior to summer 2022
  - Equipment repair needs
  - Lack of Flexibility to make repairs due to high flows
- Existing units rehabilitated and equipment repairs completed
- No permit excursions since summer 2022

# Overview

- Phase 1 Expansion: 3.0 million gallons per day (MGD) WWTP expanded to 4.5 MGD
- Current Permit Limits:
  - CBOD<sub>5</sub>: 10 mg/l
  - TSS: 15 mg/l
  - Ammonia: 2 mg/l



# WWTP EXPANSION AUGUST 2020

Headworks & Influent Lift Station

Package Plant #1

Package Plant #2

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WWTP Expansion Construction



# WWTP EXPANSION February 21, 2023

N

Headworks & Influent Lift Station

Package Plant #1

Package Plant #2

UV Disinfection

Clarifiers

Digesters

Dewatering Building

Aeration Basins

Operations Building

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WWTP Expansion Construction

# Growth Projections

- 9.2% annual growth over last 5 years
- 63% population growth between 2010 and 2020

## Kyle is feeling the effects of booming growth in Central Texas

The Central Texas town's population has skyrocketed, with good reason.



Author: Rob Evans  
Published: 8:39 AM CDT August 24, 2022  
Updated: 8:43 AM CDT August 24, 2022

BOOMTOWN 2040

## Next stop, Kyle: Amazon continues expansion in Central Texas

Amazon has also announced recent expansion projects in Buda, Pflugerville and Round Rock.

## Lowe's distribution center coming to Kyle

It will be located in the Kyle Crossing Business Park.



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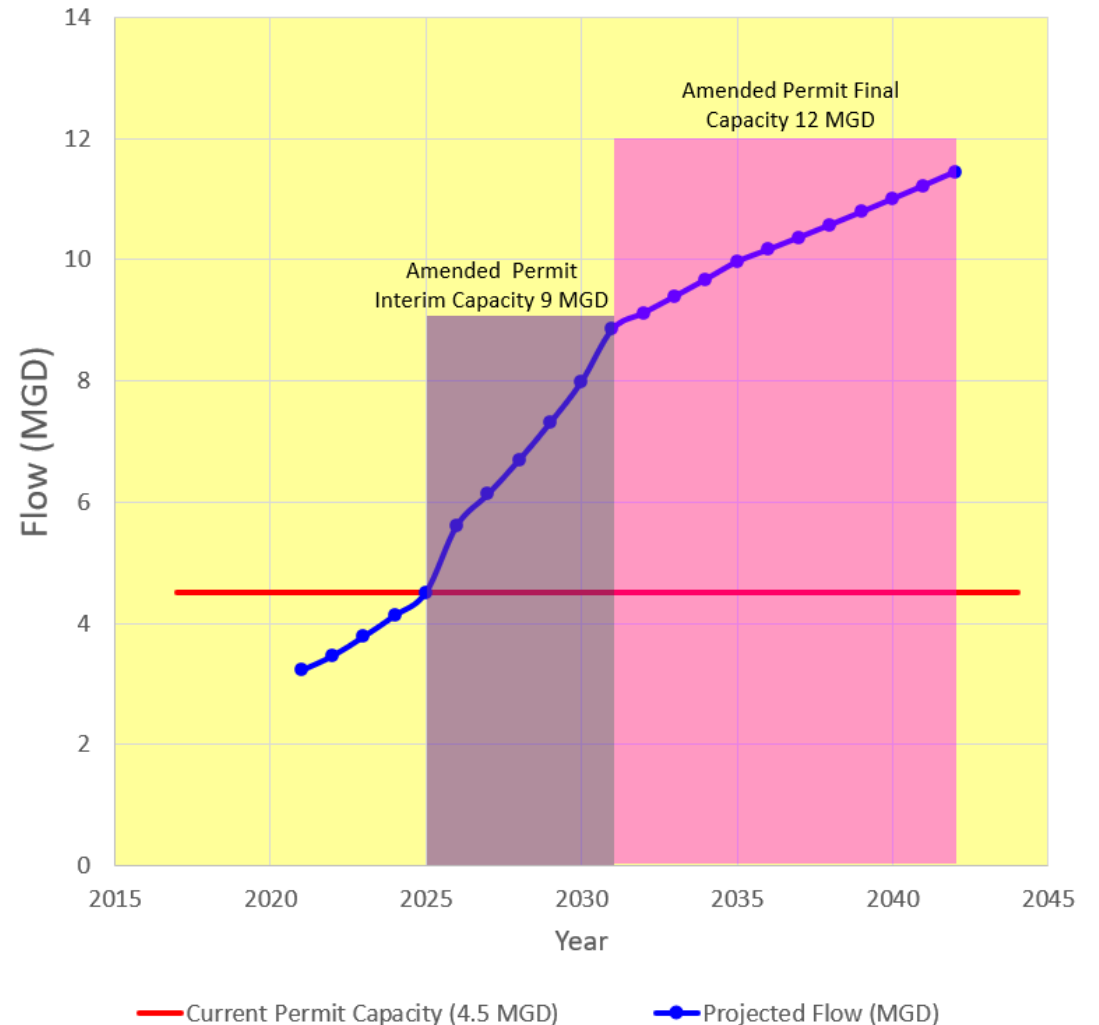
# Growth Projections

- Current Stats:
  - 2023 Population: **55,600**
  - **8,535** Residential lots currently under review (3,803 Acres)
  - **Population increase of 27,312** from lots currently under development review (average 3.2 people per house)
  - **427.0 acres** of commercial development under review

2017 Comprehensive Plan Summary		
2040 Population	Slow Growth	78,576
	Medium Growth	90,363
	Fast Growth	105,808
2023 Population Medium Growth		55,000

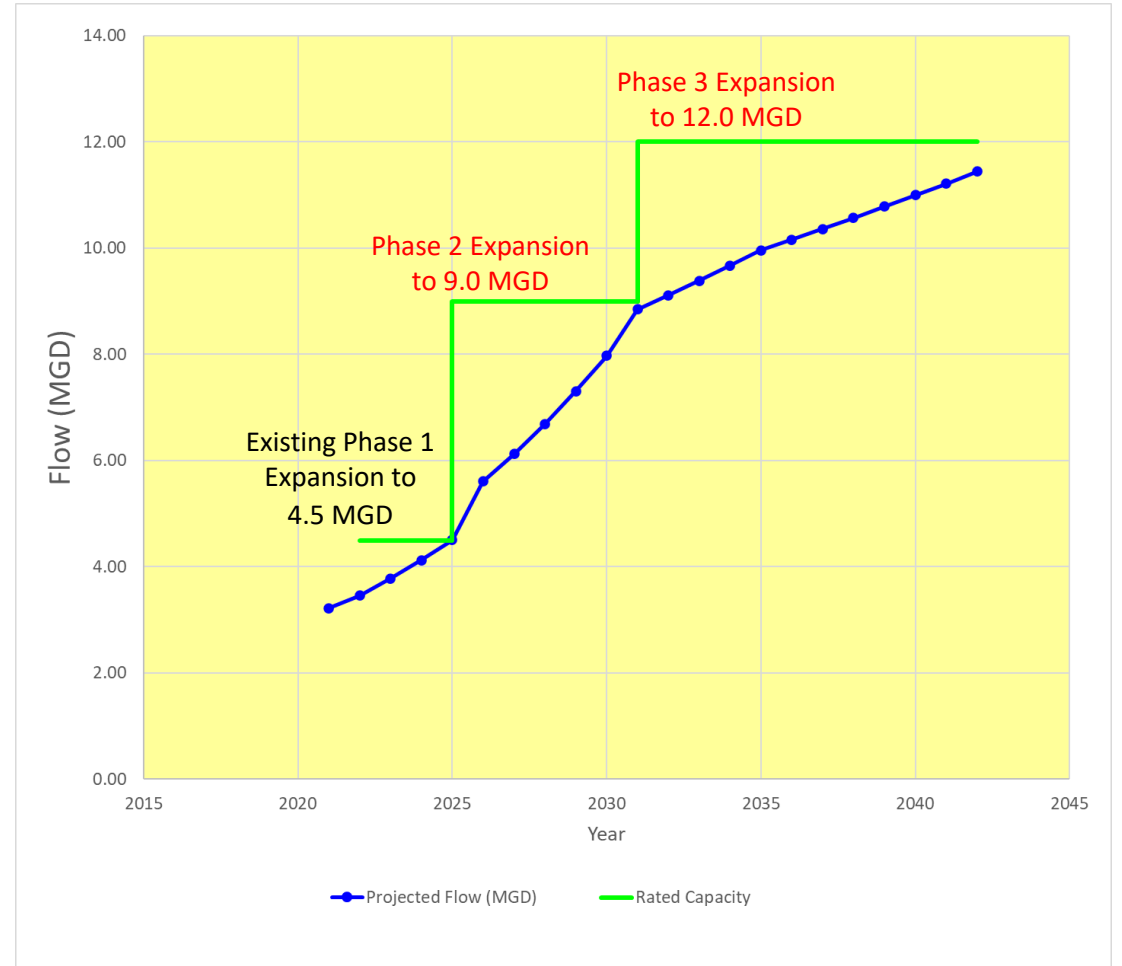
# Growth Projections

- Current 4.5 MGD permit limit projected to last through 2025
- Current plan projects average wastewater flow of 11 MGD in 2040



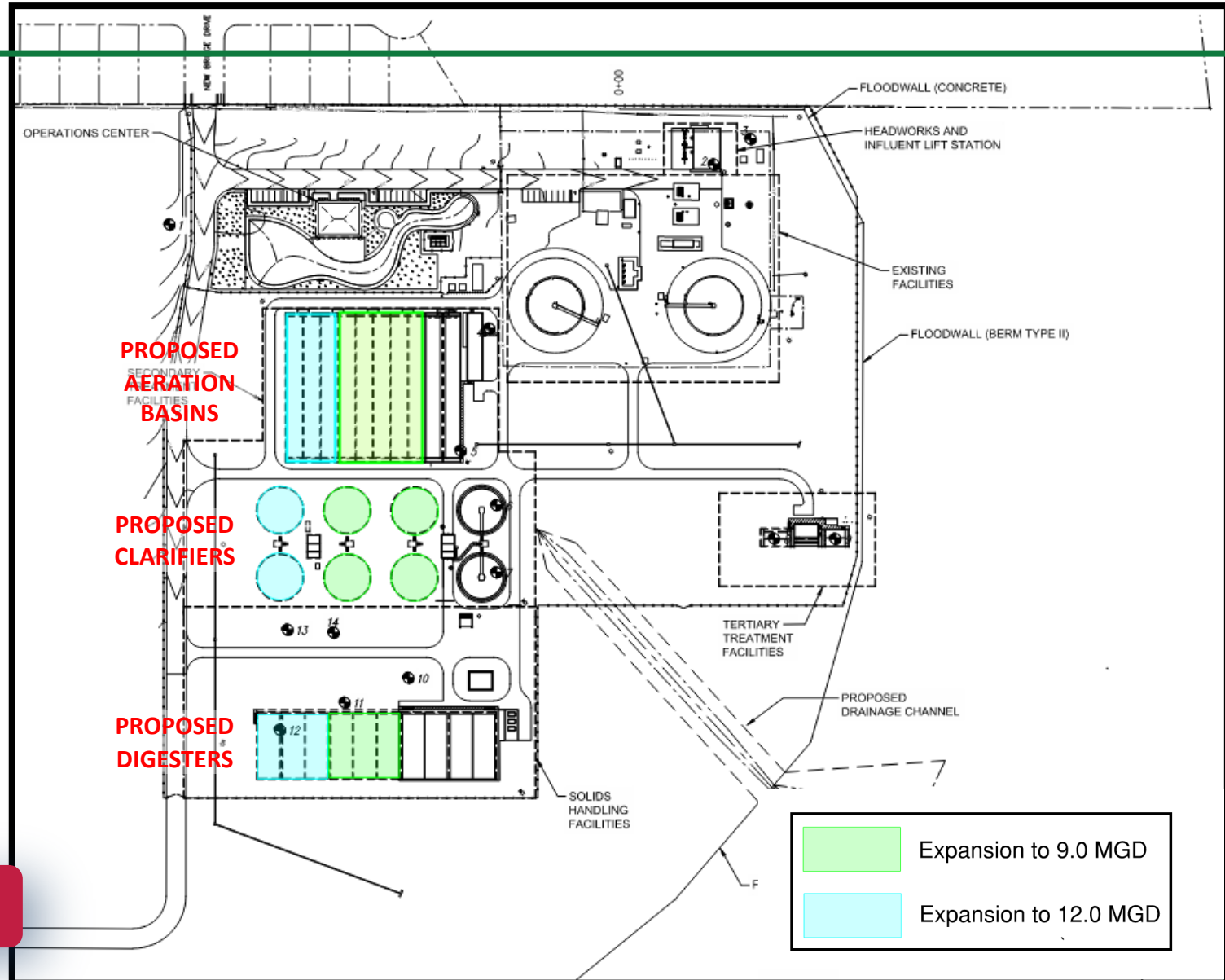
# Phasing Plan

- Phasing plan based on flow projections
- Next Phase 2 Expansion to 9.0 MGD in 2025
- Future Phase 3 expansion to 12.0 MGD



# Phasing Plan

- Phasing Plan
  - 9 MGD by 2025
- Flexibility
  - Allows for better O&M
  - Adjust schedule for future Expansion to 12 MGD



# WWTP Effluent Discharge

- Permit Application Public Outreach Activities:
  - Presentations to Plum Creek Watershed Partnership and Plum Creek Conservation District
  - Conducted two public meetings/open houses for residents
- City voluntarily applied for nutrient limits:
  - Recommendations from Plum Creek Watershed Partnership\*
    - 2 mg/L NH<sub>3</sub>-N
    - 1 mg/L phosphorus

\* Per 2022 Update to Plum Creek Watershed Protection Plan

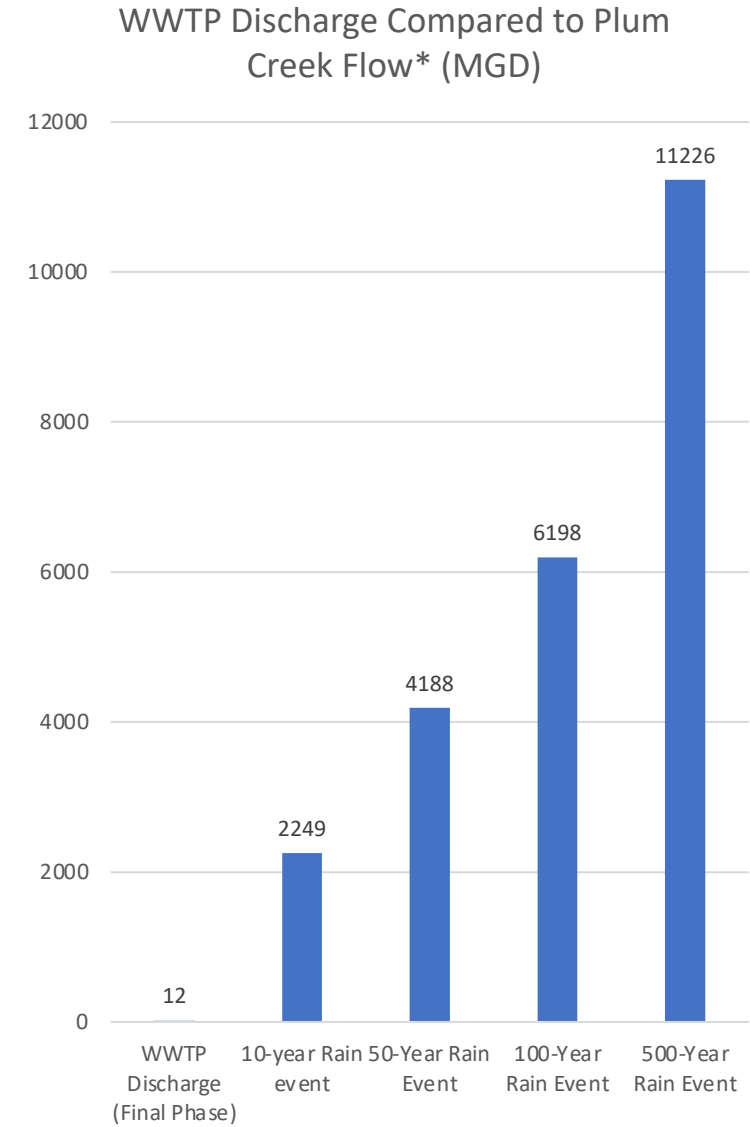
# WWTP Effluent Discharge

- City has accepted TCEQ recommendations of more stringent nutrient limits
- Final Permit Limit of 12.0 MGD is equivalent to:
  - 0.5% of creek flow during 10-year flood event\*
  - 0.2% of creek flow during 100-year flood event\*

\*Plum creek flow at approx. 2,400 ft upstream from CR156, per FEMA Flood Insurance Study 48209CV001A, dated 9/2/2005

- Benefits of effluent in the creek during drought conditions:
  - Provides water for wildlife in the area
  - Maintaining environmental flows in the creek
  - Protects creek banks with moisture for vegetation

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# WWTP Operations

- Phase 1 Expansion to 4.5 MGD started operations in June 2022
- All repairs to Package Plants are complete
- Package Plants are fully operational
- No excursions since Phase 1 expansion came online
- Odor Control Improvements - Phase 1 expansion:
  - Constructed headworks with building enclosure
  - Improved screenings collection/removal process
  - Improved solids digestion process by addition of new digester units
- City will evaluate additional odor control as part of the next plant expansion

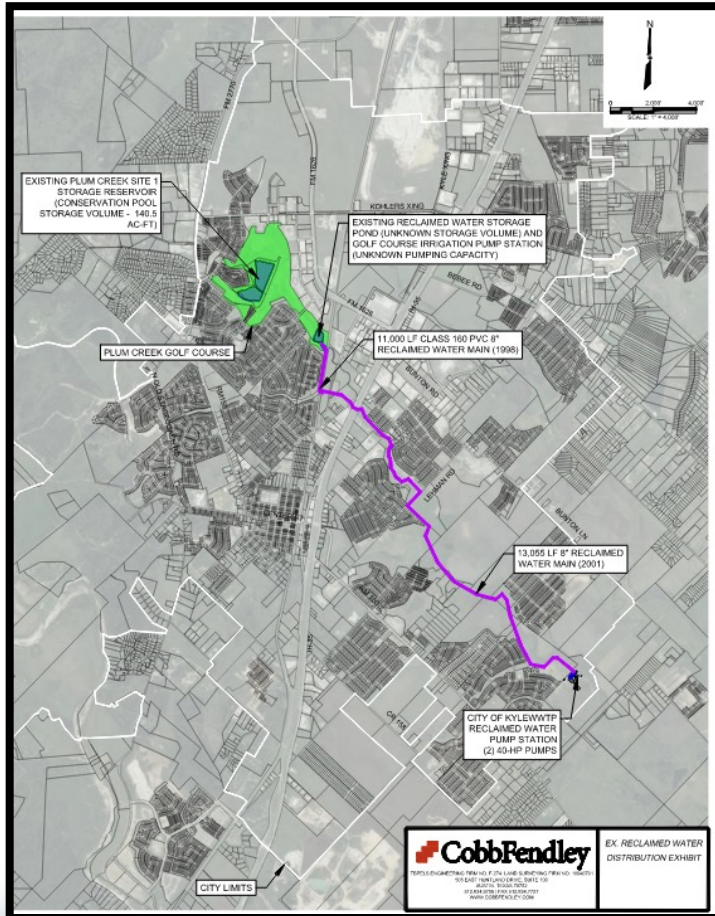
# Reclaimed Water Improvements

- City of Kyle is developing an aggressive plan to expand its reclaimed water system
- City is currently developing a Reclaimed Water Master Plan
- City received \$2M in federal funding for the reclaimed water system
- Phase 2 WWTP expansion will include improvements for:
  - Better effluent quality to meet a variety of reclaimed water uses

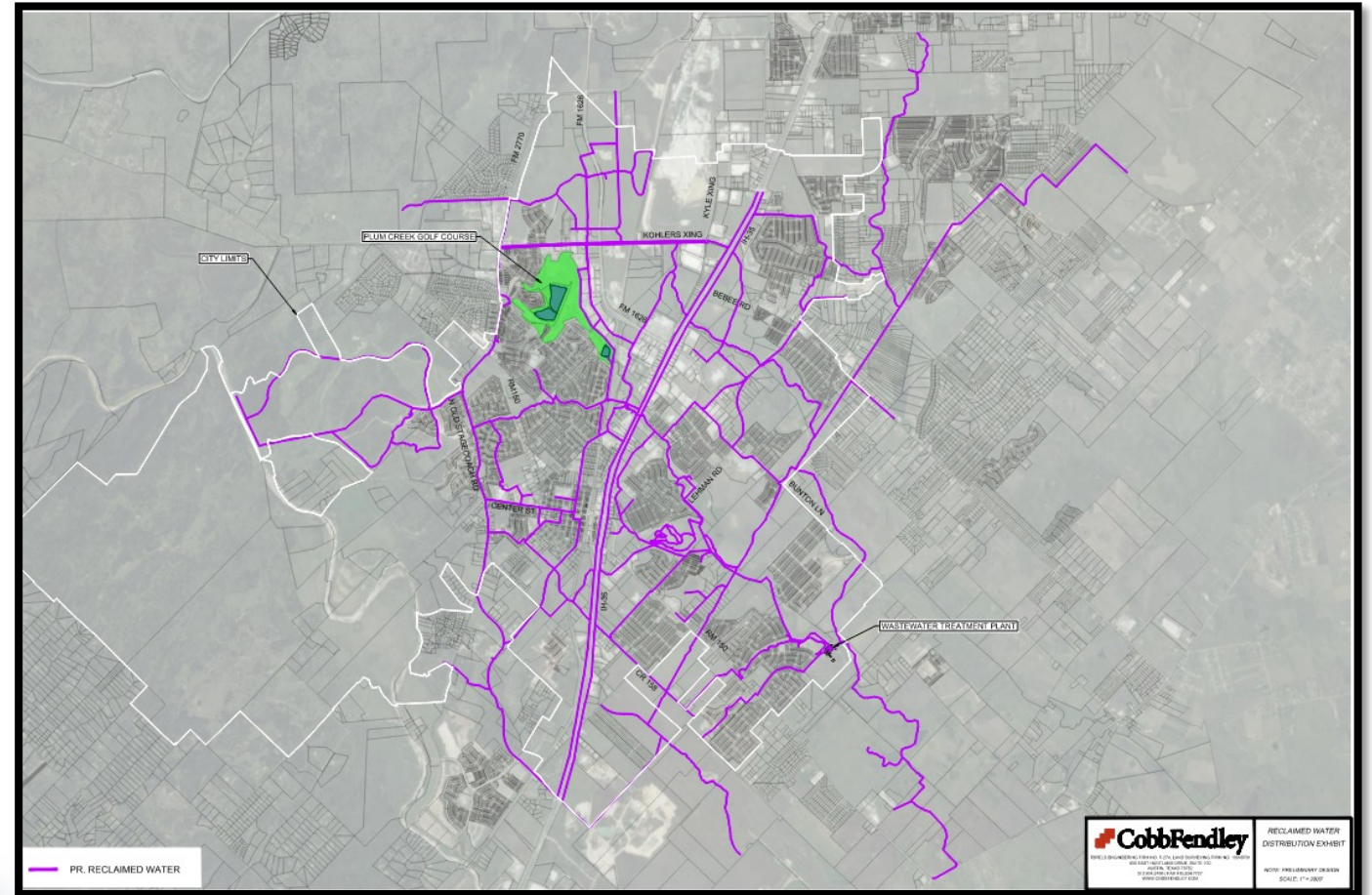


# Reclaimed Water Improvements

## EXISTING SYSTEM



## DRAFT ULTIMATE SYSTEM



# Investment in Collection System

- In addition to WWTP, City is making significant investments in:
  - Infiltration/Inflow Reduction
  - Pipeline Capacity Improvements
  - Lift Station Elimination when possible

# Thank You

- Additional information
  - City website [www.cityofkyle.com/wwtp](http://www.cityofkyle.com/wwtp)
  - Open House of WWTP – June 23, 2023
- Questions?

