

WALNUT CREEK WASTEWATER  
TREATMENT PLANT INVESTMENT



# Investing in Austin's Future

Climate, Water, Environment, and Parks Committee  
April 23, 2025

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Engineering & Technical Services

# **Agenda**

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1. Wastewater System Overview
2. Plant History
3. Plant Upgrades
4. Walnut Creek Enhancement and Expansion
5. Proposed Land Development Code Amendments
6. Environmental & Planning Commission Reviews

# Wastewater by the Numbers

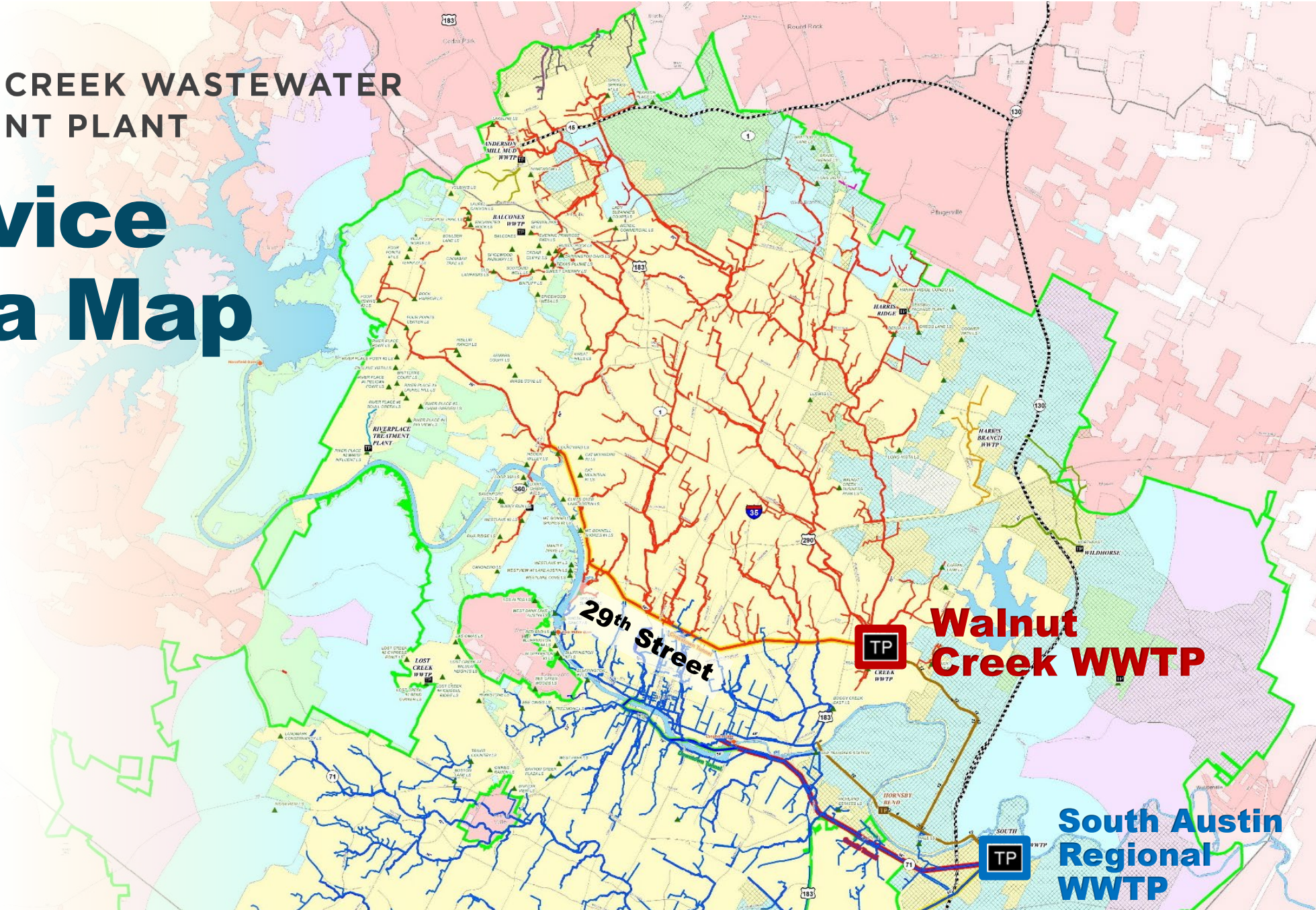
## Austin Water Statics:

- 2,900 Miles of Gravity Lines
- 59,000 Manholes
- 137 Lift Stations
- 78 Miles of Force Mains
- 9 Decentralized Package WWTP
- 1 Jointly Owned Wastewater System  
Brushy Creek Wastewater System;  
COA Ownership is 9.87%
- 2 Regional Wastewater Treatment Plants  
Walnut Creek & South Austin Regional WWTP
- 1 Biosolids Plant  
Hornsby Bend Biosolids Management Plant



# WALNUT CREEK WASTEWATER TREATMENT PLANT

# Service Area Map





# Plant History



# Plant History

## WALNUT CREEK WWTP

Rehabilitation and Renewal Projects

- **1977** – **18** MGD



# Plant History

## WALNUT CREEK WWTP

Rehabilitation and Renewal Projects

- **1977** – **18** MGD
- **1987** – **40** MGD
- **1990** – **60** MGD
- **1999** – Colorado River Outfall
- **2005** – **75** MGD
- **2019** – Optimization & Facility Plan



# Plant History

## WALNUT CREEK WWTP

Rehabilitation and Renewal Projects

- **2000** – Reclaimed Water
- **2005** – Headworks #2
- **2009** – Electrical Distribution
- **2013** – Reclaimed Water
- **2017** – Tertiary Filter
- **2019** – Secondary Treatment
- **2020** – Sludge Thickener
- **2020** – Pump Replacements
- **2021** – Plant Control & Network
- **2022** – Gas Scrubber
- **2025** – Primary and Flow Equalization Basin







# Upgrading our entire process



**Expanded  
Capacity**



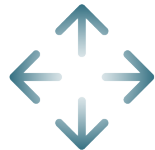
**Upgraded  
Treatment**



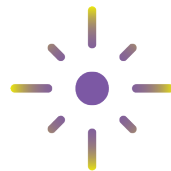
**Flood  
Protection**



**Advanced  
Odor Control**



**Plant-Wide  
Modernization**



**Safer Disinfection  
Process**



**Continuous  
Service**

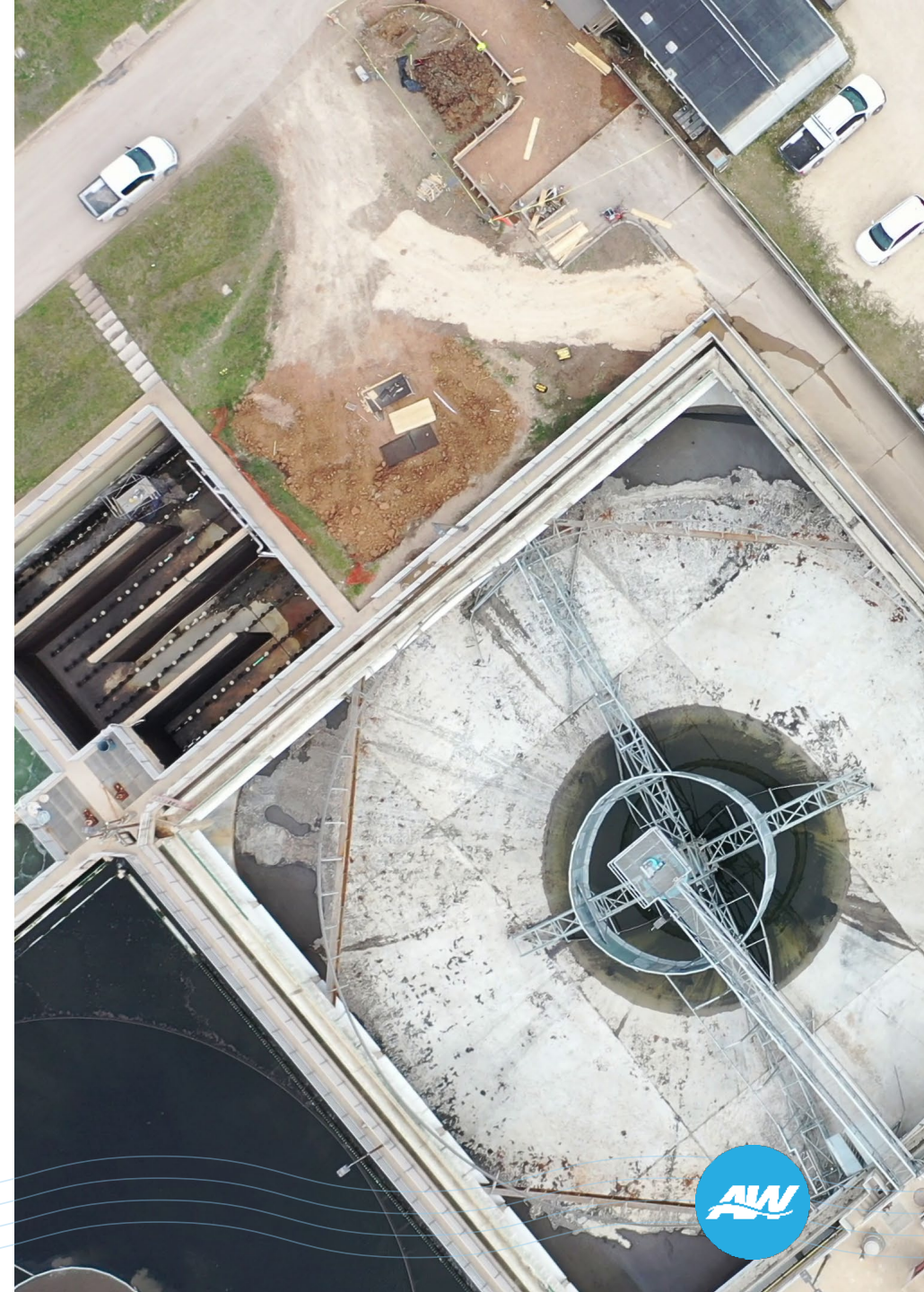


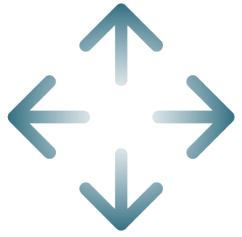


# Expanded Capacity

The expansion will add treatment capacity of **25 million gallons per day**. The existing plant is currently permitted to treat 75 million gallons per day.

Flows into the plant exceeded **75 percent** of its treatment capacity in 2015 and surpassed **90 percent** of treatment capacity for three months in 2024.





## Plant-Wide Modernization

Aging infrastructure will be rebuilt or replaced across the plant with new environmental and operational upgrades incorporated.

Process areas to be rebuilt include:

- Headworks #1
- Influent Lift Station



## Upgraded Treatment

The treatment process for the existing plant and the expansion will be upgraded to reduce nutrient levels with a Biological Nutrient Removal (BNR) process, benefiting the health of the Colorado River downstream of Austin.



## Safer Disinfection Process

The plant will transition from chlorine to ultraviolet (UV) light disinfection, eliminating chemicals and improving safety for workers and the community.



## Flood Protection

A flood wall will be built around the plant to protect it from floodwaters that could rise from nearby Walnut Creek.



## Advanced Odor Control

Mitigate odors by incorporating advanced odor control technologies, such as biofilters, activated carbon filters, or basin covers.



## Continuous Service

Austin Water staff and the contractor will phase construction across the plant, ensuring uninterrupted service for customers.

# Expansion to 100 MGD and Enhancement

## Renewal Projects

- Headworks #1 renewal
- Influent lift station

## Expansion Projects

- New 25 MGD with nutrient removal
- Influent pipe
- Outfall pipe

## Treatment Conversion

- 75 MGD with nutrient removal
- UV disinfection

## Protection of Plant

- Wet weather treatment facility
- Flood wall



-  Treatment Process Basins
-  Treatment Process Buildings
-  Flood Protection

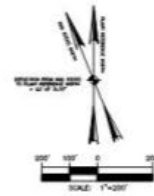
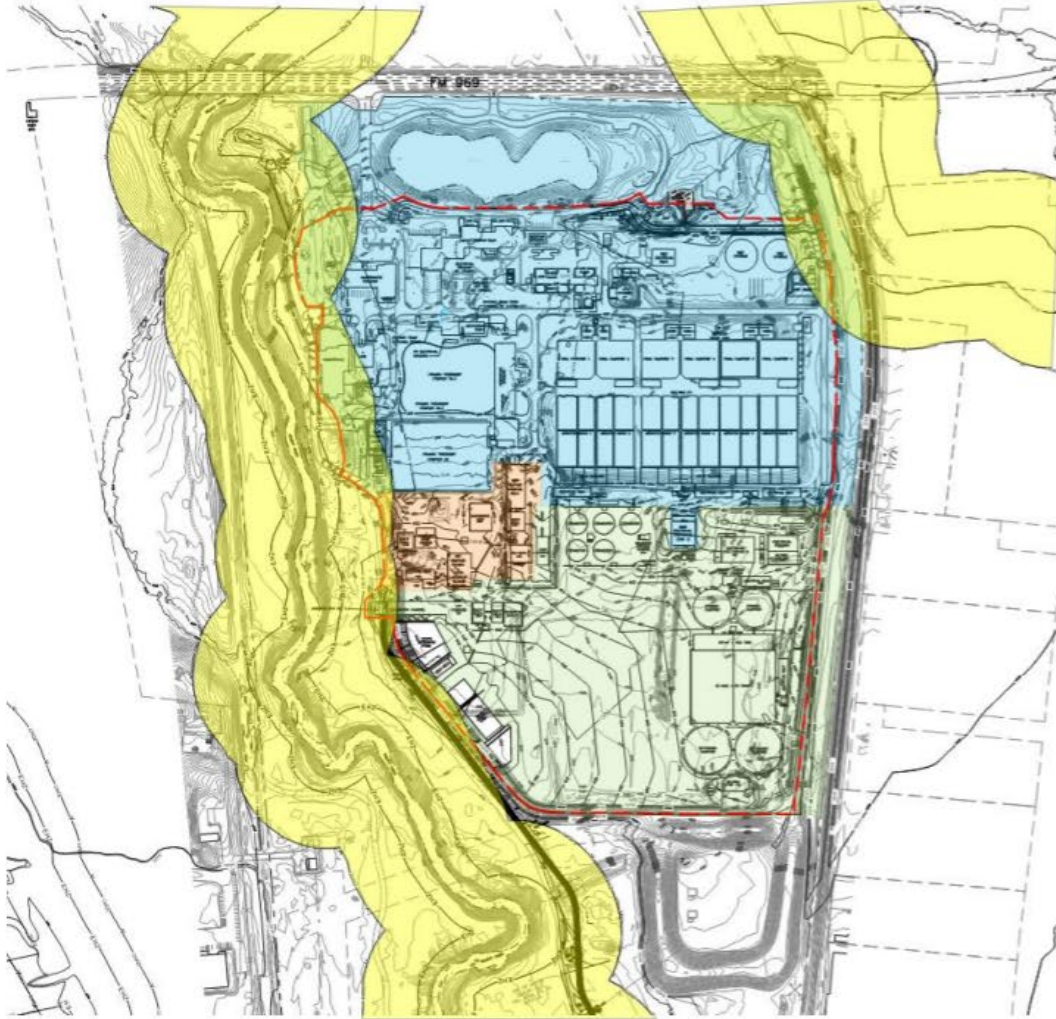
# Construction Packages

<b>GMP 1</b>	<b>HW 1 and ILS, Electrical I&amp;C, Abatement</b>
<b>GMP 2</b>	<b>Mobilization Site Services</b>
<b>GMP 3</b>	<b>Long Lead Items and Early Works</b>
<b>GMP 4</b>	<b>Floodwall &amp; Site Drainage</b>
<b>GMP 5</b>	<b>25MGD Expansion</b>
<b>GMP 6</b>	<b>Wet Weather Facility</b>
<b>GMP 7</b>	<b>Existing 75MGD Rehabilitation</b>
<b>GMP 8</b>	<b>Outfall &amp; Sitewide Civil</b>





# Construction in the CWQZ



LEGEND

- WALKIT CREEK WWTP PROPERTY LINE
  - FLOOD PROTECTION SHEET PILE
  - CRITICAL ENVIRONMENTAL FEATURE
  - 100' BUFFER ZONE
  - EROSION HAZARD ZONE
  - CRITICAL WATER QUALITY ZONE
  - 100 YEAR FEMA FLOODPLAIN
  - 25 YEAR FEMA FLOODPLAIN
- 
- - - - FLOOD WALL AND SITE DRAINAGE PACKAGE A
  - PACKAGE B
  - PROPOSED PLANT AREA LIMITS PACKAGE C
  - WET WEATHER PLANT AREA LIMITS PACKAGE D
  - OUTFALL PACKAGE E
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- CRITICAL WATER QUALITY ZONE (CWQZ)

## LDC 25-8-261

To allow construction of a floodplain wall within a Critical Water Quality Zone (CWQZ).





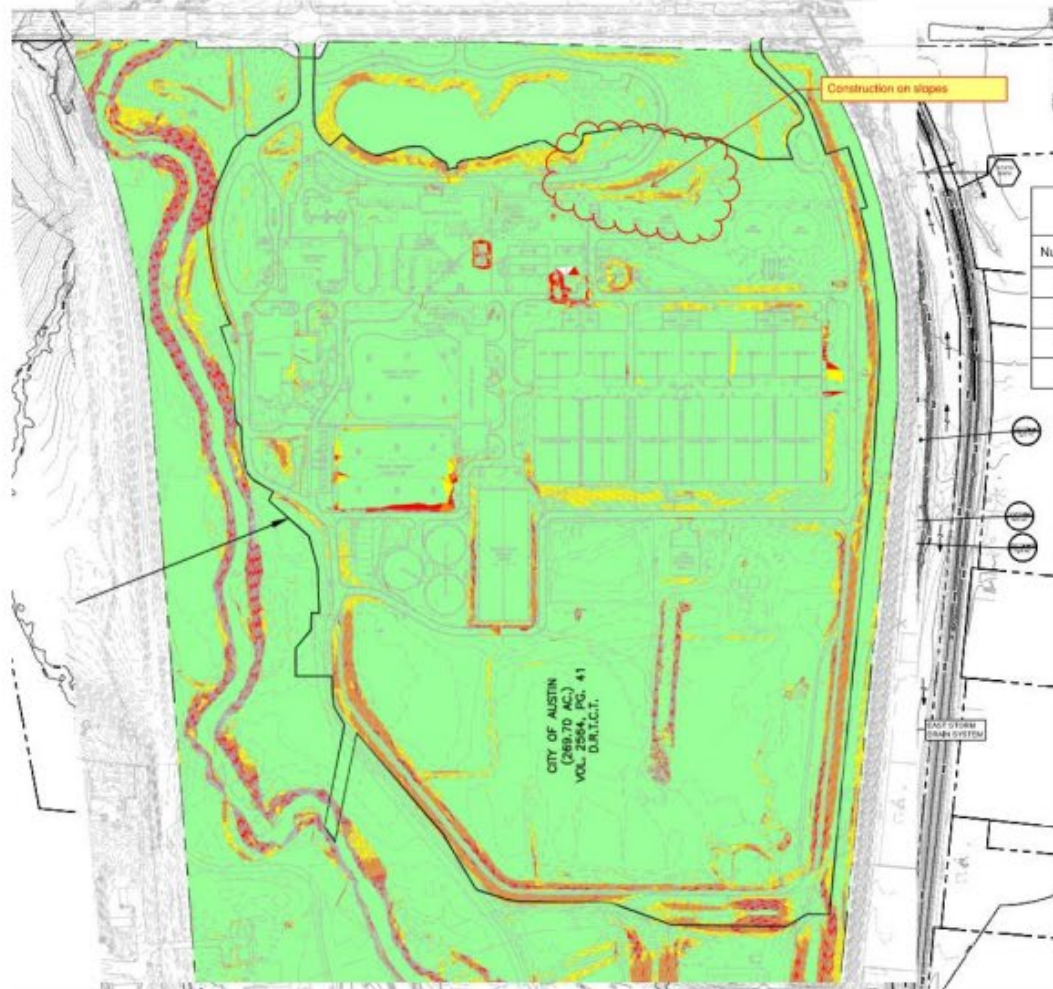


# Mitigation for impact to CWQZ





# Construction on Slopes



Slopes Table				
Number	Minimum Slope	Maximum Slope	Area (SF)	Color
1	0.00%	15.00%	3553547.23	Light Green
2	15.00%	25.00%	204731.27	Yellow
3	25.00%	35.00%	155465.16	Orange
4	35.00%	100.00%	74162.77	Red

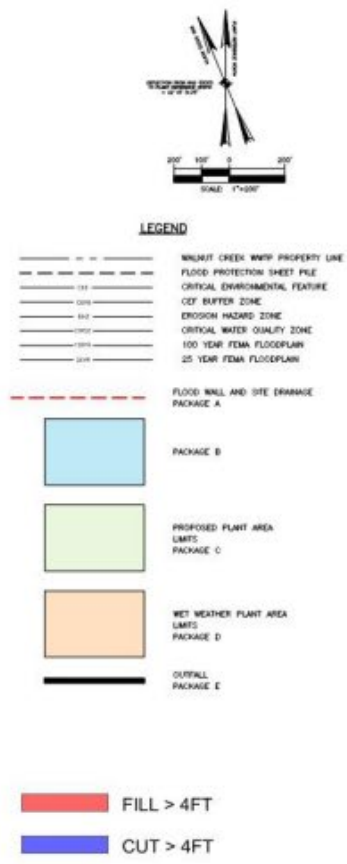
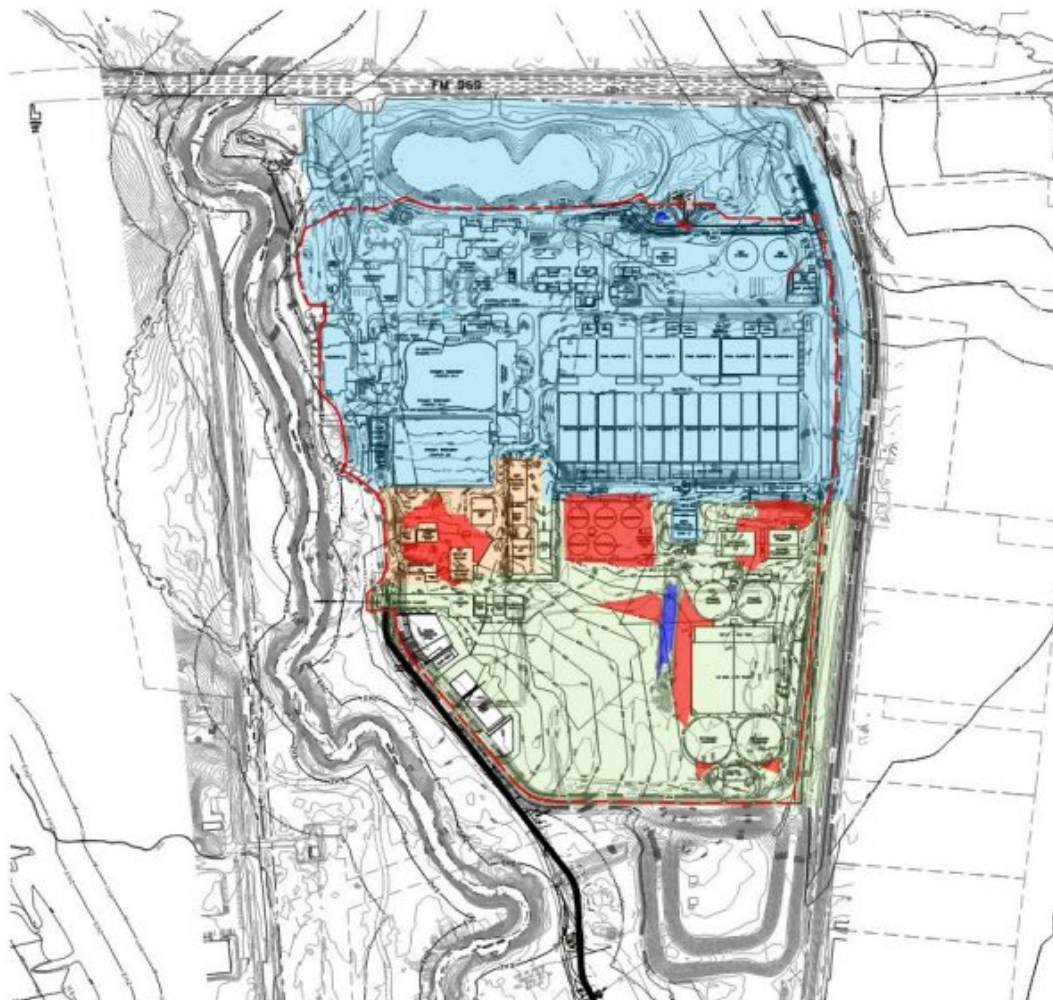
## LDC 25-8-301

Administrative approval of roadway or driveway constructed on slopes in excess of 15%





# Cut and Fill



## LDC 25-8-341

To allow cut to be administratively approved up to 25 ft.

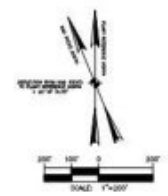
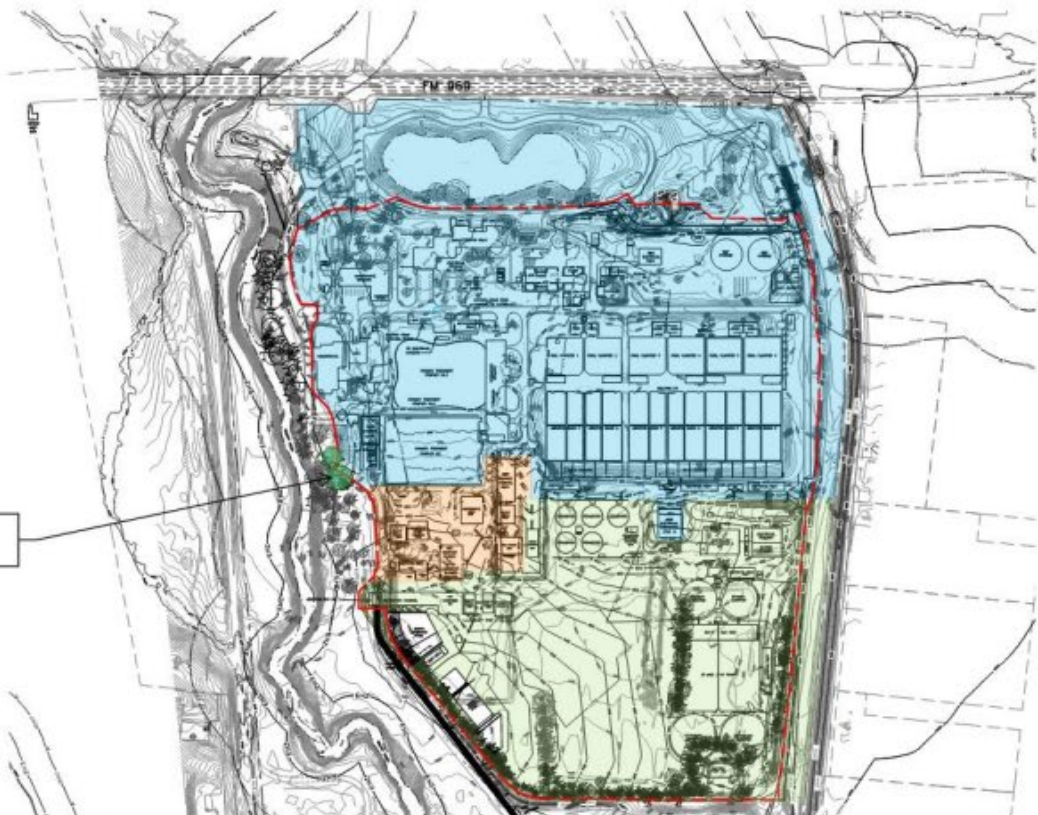
## LDC 25-8-342

To allow fill to be administratively approved up to 25 ft.





# Heritage Trees



- LEGEND**
- WALNUT CREEK WWTP PROPERTY LINE
  - FLOOD PROTECTION SHEET PILE
  - CRITICAL ENVIRONMENTAL FEATURE
  - CEF BUFFER ZONE
  - EROSION HAZARD ZONE
  - CRITICAL WATER QUALITY ZONE
  - 100 YEAR FEMA FLOODPLAIN
  - 25 YEAR FEMA FLOODPLAIN
  - FLOOD WALL AND SITE DRAINAGE PACKAGE A
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  - NET WEATHER PLANT AREA LIMITS PACKAGE D
  - OUTFALL PACKAGE E

HERITAGE TREES TO BE REMOVED

## LDC 25-8-642 & 25-8-643

Administrative approval allowed for removal of two Heritage Trees.

TREES		SURVEYING		REMOVAL		MITIGATION	
TOTALS							
TREES	548	APPENDIX F TREES SURVEYED	499	TREES REMOVED	337	NON-APPENDIX F TREE INCHES REMOVED	463
INCHES	8212	APPENDIX F TREE INCHES SURVEYED	7815	INCHES REMOVED	4836	NON-APPENDIX F TREE INCHES REMOVED	8
PROTECTED TREES	124	HERITAGE TREE INCHES SURVEYED	1675.5	PROTECTED TREES REMOVED	67	MITIGATION REPLACEMENT INCHES PLANTED	
HERITAGE TREES	31	NON-APPENDIX F TREES SURVEYED	45	APPENDIX F TREE INCHES REMOVED	4512	REPLACEMENT INCHES PLANTED ON SITE (PRIVATE TREES)	
		NON-APPENDIX F TREE INCHES SURVEYED	587	HERITAGE TREE INCHES REMOVED	86	REPLACEMENT ROW INCHES PLANTED	
		INVASIVE TREE INCHES SURVEYED	384	HERITAGE TREES REMOVED	2	PRIVATE INCHES OWED TO UPRF	
				NON-HERITAGE TREE INCHES REMOVED	0	PUBLIC INCHES OWED TO UPRF	
				NON-APPENDIX F TREE INCHES REMOVED	0		
				NON-APPENDIX F TREE INCHES REMOVED	0		





# Other Code Amendments

There may be amendments to the following sections of the LDC:

- Chapter 25-1 Related to general requirements and procedures
- Chapter 25-5 Related to the approval of multiple site plans
- Chapter 25-7 Related to the administrative approval of a floodplain variance





# Staff Recommendation

**Staff recommends approval of the proposed site-specific amendments and associated variances with the following conditions:**

- The project is required to seek administrative variances for proposed development that exceeds or modifies the requirements of:
  - 25-8-301 (Construction on Slopes)
  - 25-8-341 (Cut Requirements)
  - 25-8-342 (Fill Requirements)
  - 25-8-642 & 25-8-643 (Heritage Trees)
- For administrative variances granted by this ordinance, the project must demonstrate that no feasible, code compliant design alternatives exist.
- The project is designed to bore the new effluent waterline under Walnut Creek instead of using an open cut channel.
- The project extends the CWQZ associated with the southern most segment of Walnut Creek to an area 150% the size of the proposed impacted CWQZ.
- The project commits to relocation of impacted heritage trees where feasible.



# **Commission Reviews & Council Action**

**April 2, 2025: Environmental Commission**

**April 22, 2025: Planning Commission**

**May 8, 2025: Public Hearing and Council Action**



# Questions?

