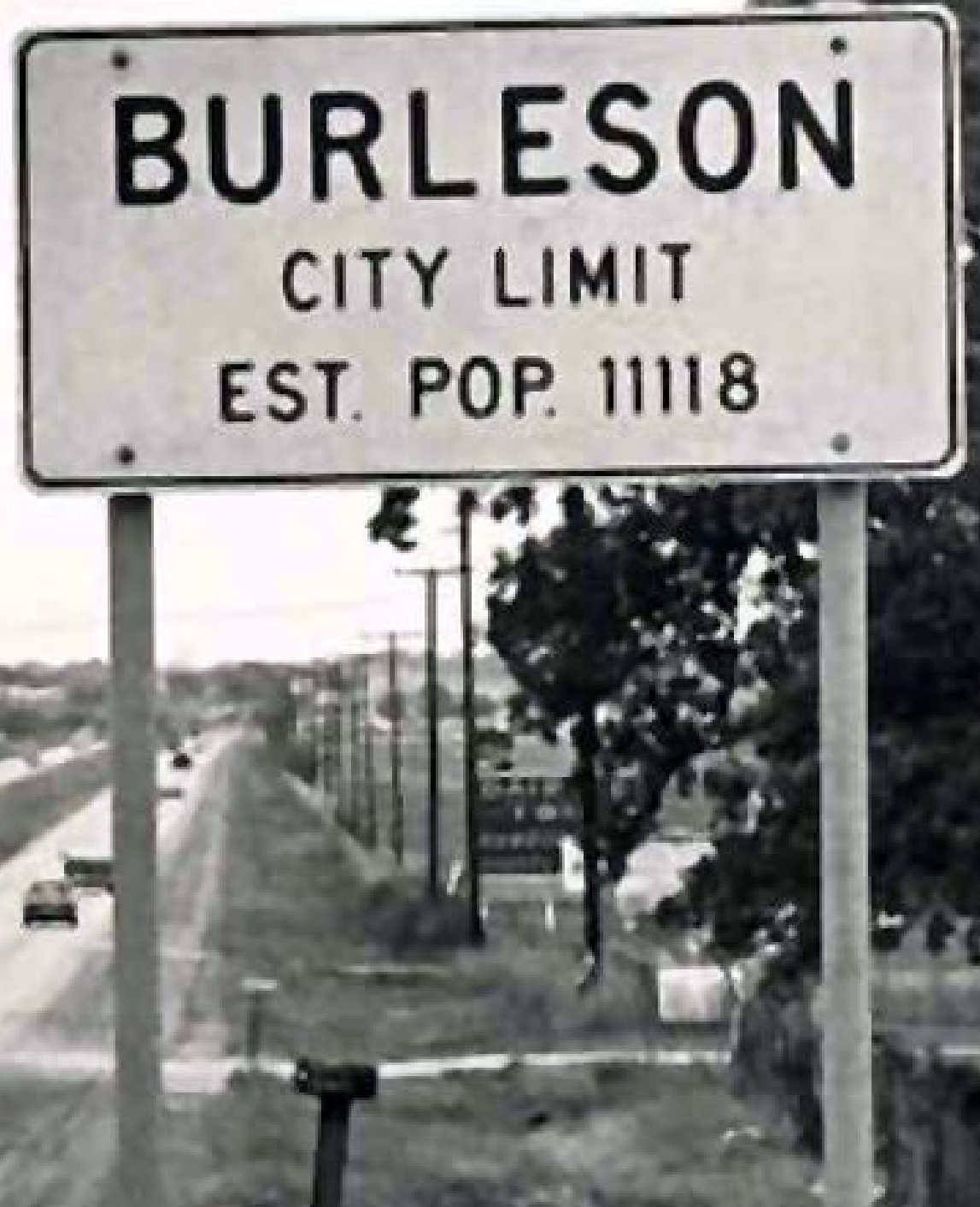


# Mobility Plan and Water / Wastewater Master Plan Adoption

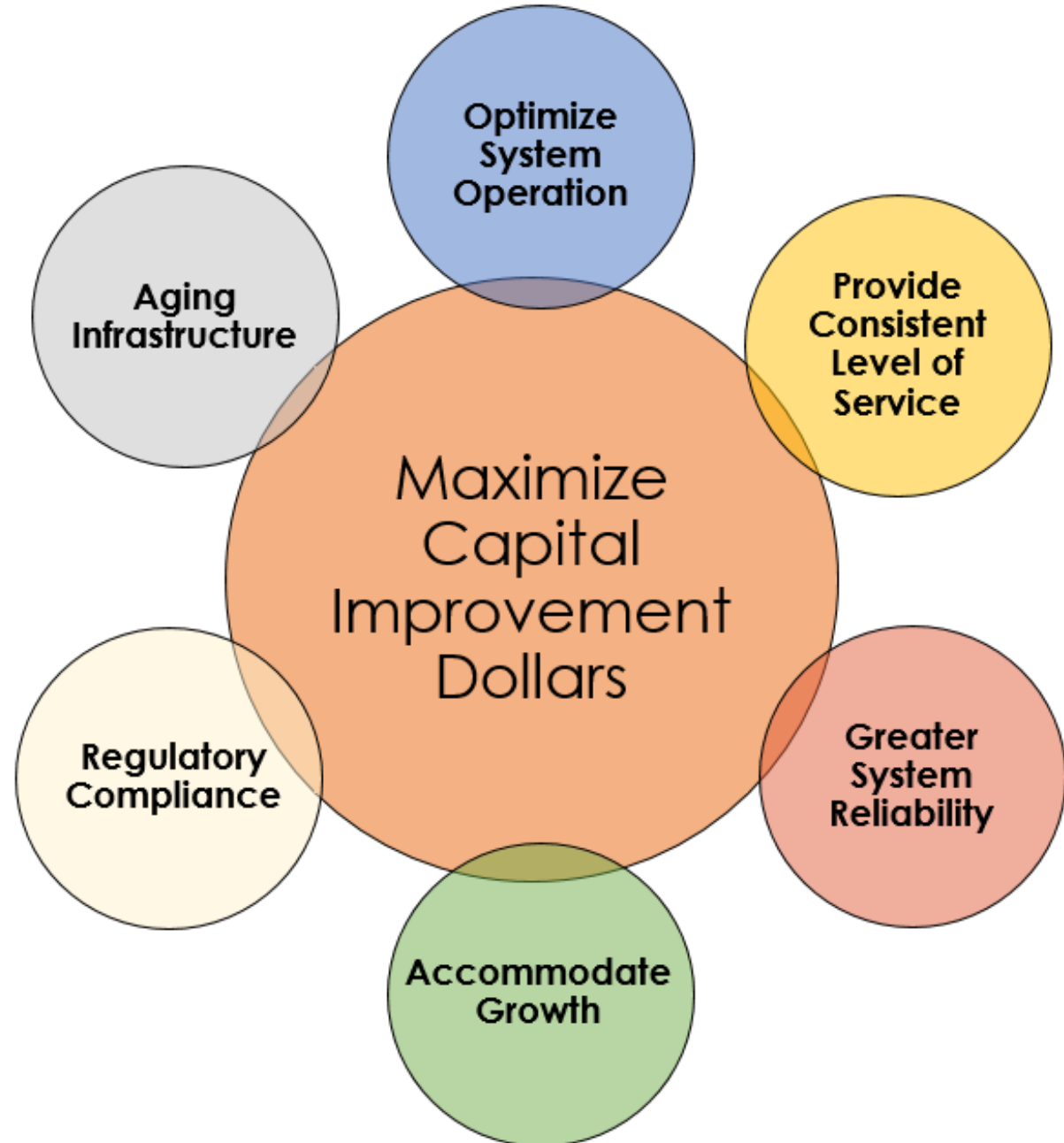
City Council

November 13, 2023



# MASTER PLAN GOALS AND DRIVERS

- Provide a roadmap for the future
- Identify existing system deficiencies and future needs
- Establish drivers for triggering CIP
- Master Plan CIP serves as the basis for the Impact Fee Eligible CIP



# MOBILITY PLAN

# What is the 2022 Mobility Plan?

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## **Draft 2022 Mobility Plan:**

- **Seeks to replace the “2015 Master Mobility Plan” (the last such plan adopted by Council)**
- **Retains and updates the "Thoroughfare Plan" component of the previous plan**
- **Provides a framework for and guidance on addressing multi-modal including pedestrian, bicycle, trail, and roadway mobility needs across Burleson**



# Mobility Plan Document Outline

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- **Chapter 1: Existing Conditions** contains a brief analysis of the current state of Burleson's roadway network and demographic makeup.
- **Chapter 2: Public Engagement** depicts the engagement throughout the duration of this project.
- **Chapter 3: Modeling and Mapping** provides an in-depth overview of the travel demand modeling process conducted for the Mobility Plan.
- **Chapter 4: Pedestrian Network** summarizes the status of Burleson's current pedestrian network.
- **Chapter 5: Bicycle and Trail Network** reviews Burleson's current bicycle and trail network and summarizes the updates recommended using a prioritization methodology.
- **Chapter 6: Implementation** summarizes the multimodal priority list including roadway, pedestrian, and bicycle/trail projects, policy guides; and specific strategies and actions the City of Burleson can implement to follow through on the 2022 Mobility Plan's recommendations.

# Modeling

## *Scenario Modeling Overview*

Scenario	Demographics Used	Roadways Used
Base Year Model	Existing (2020)	Previously adopted 2015 Master Mobility Plan
2015 Master Mobility Plan Build Out	Build Out Demographics	Previously adopted 2015 Master Mobility Plan
Build Out without ETJ Roads	Build Out Demographics	2022 Thoroughfare Plan with very limited ETJ roadway connections
2022 Thoroughfare Plan	Build Out Demographics	2022 Thoroughfare Plan with key ETJ connections added back in to the model

# Modeling: 2015 MTP

## 2015 MASTER THOROUGHFARE PLAN EXISTING CONDITIONS MODELING RESULTS

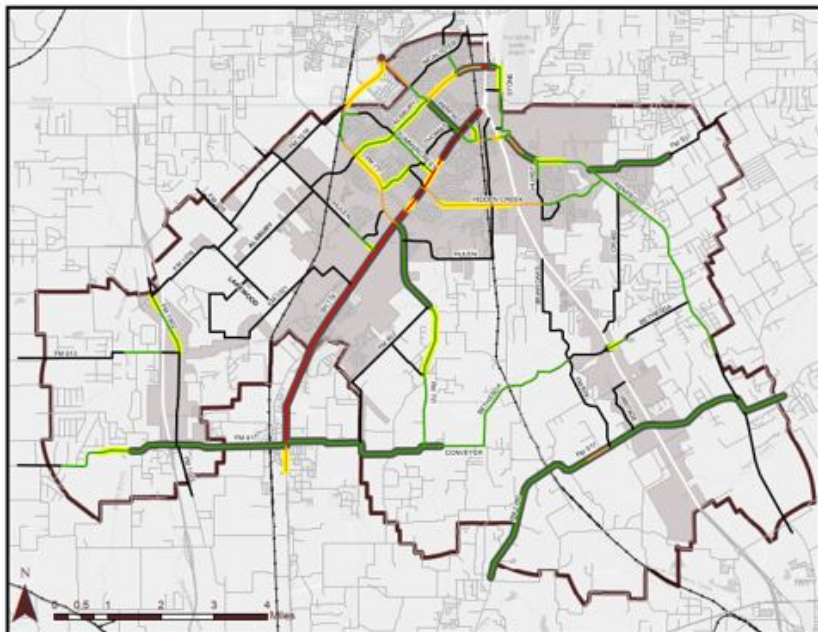
### LEGEND

#### DAILY VOLUMES

- 0 to 4,999 Vehicles Per Day
- 5,000 to 14,999 Vehicles Per Day
- 15,000 to 24,999 Vehicles Per Day
- 25,000 to 39,999 Vehicles Per Day
- 40,000 or Greater Vehicles Per Day

#### VOLUME/CAPACITY

- LOS A - C ( $< 0.65$ )
- LOS D ( $0.65 - 0.80$ )
- LOS E & F ( $> 0.80$ )
- Burleson City Limits
- Planning Area



*How congested is traffic today based on 2015 Thoroughfare Plan roadways?*

## 2015 MASTER THOROUGHFARE PLAN BUILD OUT MODELING RESULTS

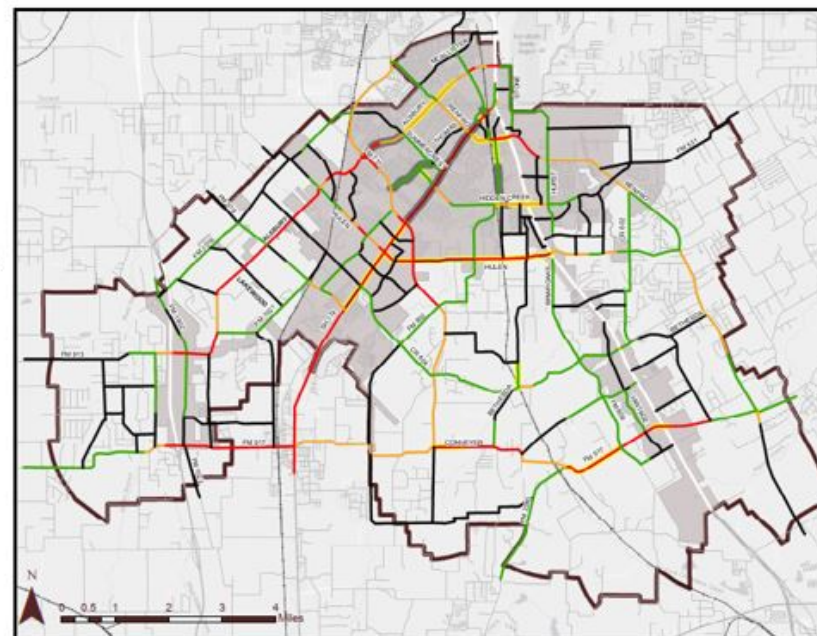
### LEGEND

#### DAILY VOLUMES

- 0 to 4,999 Vehicles Per Day
- 5,000 to 14,999 Vehicles Per Day
- 15,000 to 24,999 Vehicles Per Day
- 25,000 to 39,999 Vehicles Per Day
- 40,000 or Greater Vehicles Per Day

#### VOLUME/CAPACITY

- LOS A - C ( $< 0.65$ )
- LOS D ( $0.65 - 0.80$ )
- LOS E & F ( $> 0.80$ )
- Burleson City Limits
- Planning Area



*How congested will traffic be at build out based on 2015 Thoroughfare Plan roadways?*

# Modeling: 2015 MTP Build Out: LOS D – F Roads

Road Segment	Limits	Volume	Capacity	Volume/ Capacity	LOS
Alsbury Boulevard	FM 731/John Jones Drive to Summercrest Boulevard	29,900	30,000	0.99	E/F
Alsbury Boulevard	Summercrest Boulevard to Hemphill Street	24,100	30,000	0.80	D
SH 174/Wilshire Boulevard	FM 919 to FM 731/John Jones Drive	38,600	51,000	0.76	D
SH 174/Wilshire Boulevard	FM 731/John Jones Drive to IH-35W	48,100	51,000	0.94	E/F
Hulen Street	SH 174/Wilshire Boulevard to IH-35W	40,300	51,000	0.79	D
Renfro Street	SH 174/Wilshire Boulevard to Stone Road	36,100	51,000	0.71	D
Hidden Creek Parkway	Dobson Street to Hurst Road	23,400	30,000	0.78	D
FM 917	FM 2280 to FM 809	35,400	51,000	0.69	D
Dobson Street	Renfro Street to Hidden Creek Parkway	6,800	8,500	0.80	E/F

***At build out, several corridors are projected to have significant congestion and traffic based on the 2015 Thoroughfare Plan roadways – additional thoroughfares will be needed***



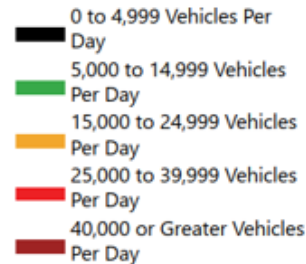
# Modeling: Key Recommendations

1. Hulen Street is critical for east/west traffic
2. Lakewood Drive/Alsbury Boulevard will operate at an acceptable LOS as a four-lane divided facility
3. North/south connection is needed between FM 913 and FM 917
4. North/south connection is needed between Bethesda Road and FM 917 east of IH-35
5. East/west connection is needed between FM 731/John Jones Drive and Bethesda Road west of IH-35

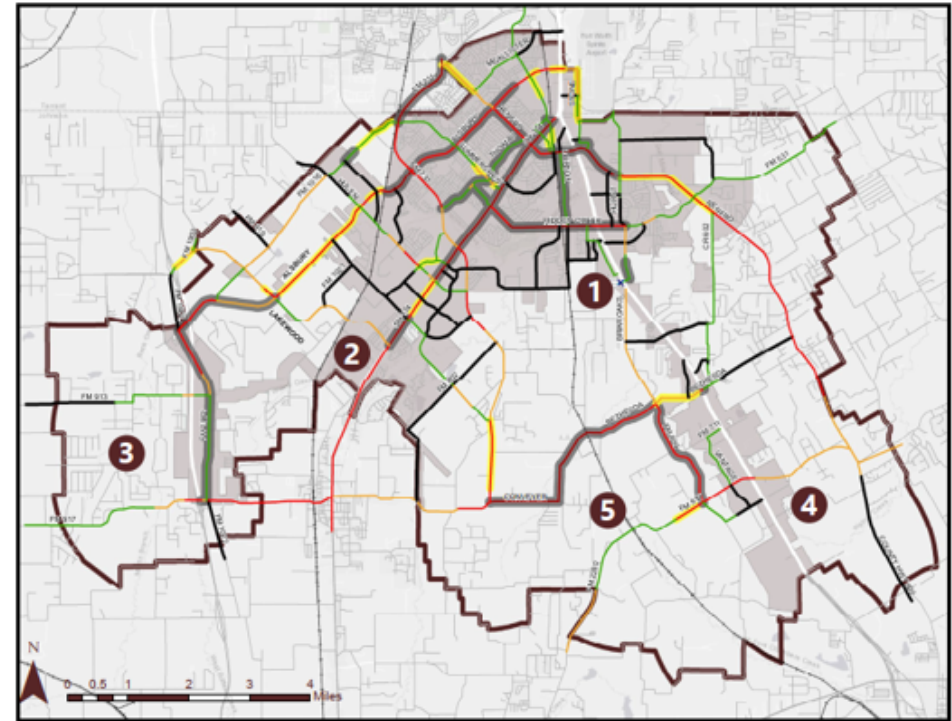
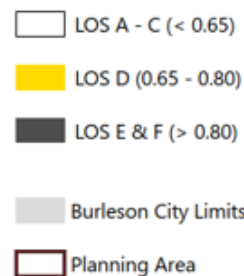
## 2022 MASTER THOROUGHFARE PLAN BUILD OUT WITHOUT ETJ MODELING RESULTS

### LEGEND

#### DAILY VOLUMES



#### VOLUME/CAPACITY



**BTX**  
**MOVES**

 Burleson City Limits



# Alignment Evaluation

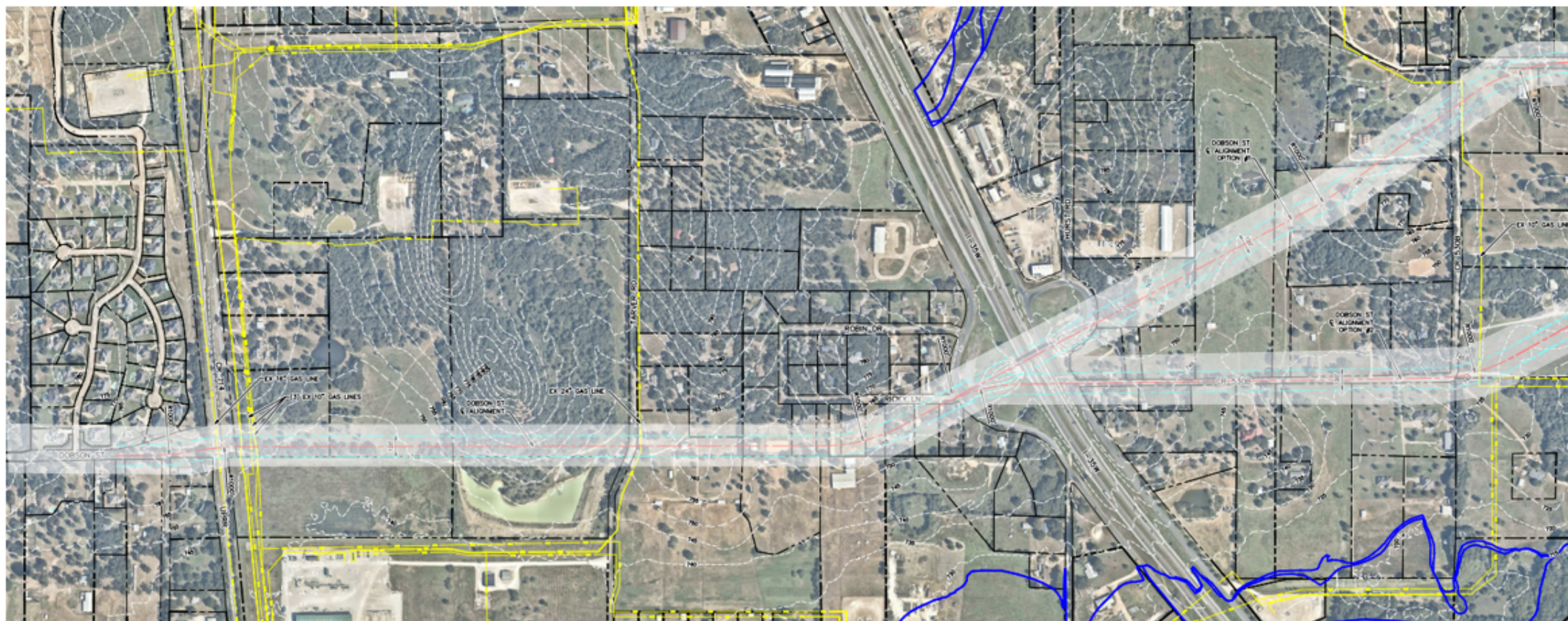
Segment	Roadway	Limits
1	Lakewood Drive	From CR 1016 to Alsbury Boulevard
2	Wicker Hill Road	SH 174/Willshire Boulevard to FM 731/John Jones Drive
3	Greenridge Drive	From Hulen Street to Lakewood Drive
4	Hidden Creek Parkway	From Renfro Street to Houston Street
5	Alsbury Boulevard	From FM 731/John Jones Drive to Alsbury Court
6	Hulen Street	From Dobson Street to Hidden Creek Parkway/CR 602*
7	Hulen Street Bridge	BNSF Bridge Crossing

*Note: Not organized by priority*



# Example Alignment Evaluation

## Hulen Street





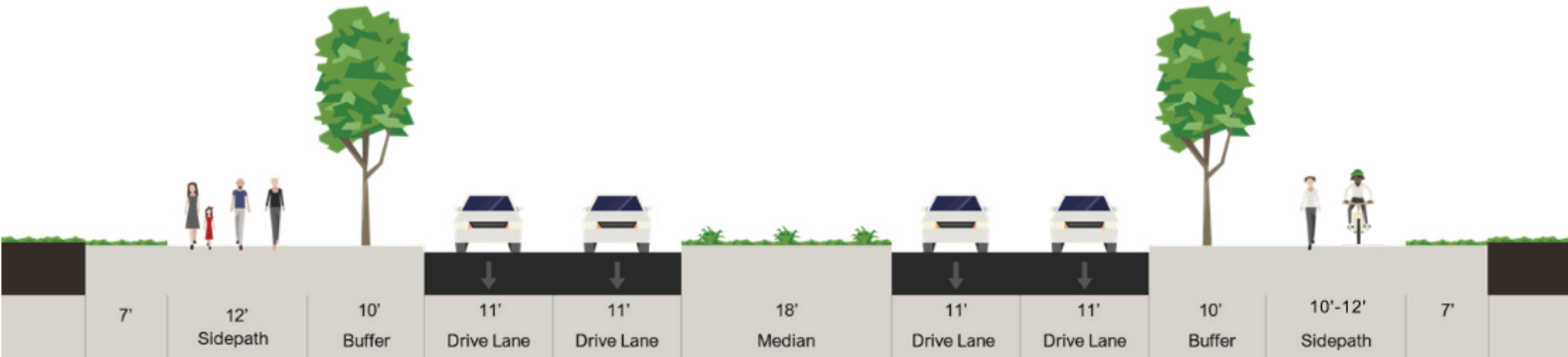
BTX  
MOVES

## EXAMPLE CROSS SECTION

MAJOR ARTERIAL\* CROSS SECTION - 120' ROW

**Hourly Lane Capacity: 600 - 750**

**Daily Capacity: 24,000 - 30,000**



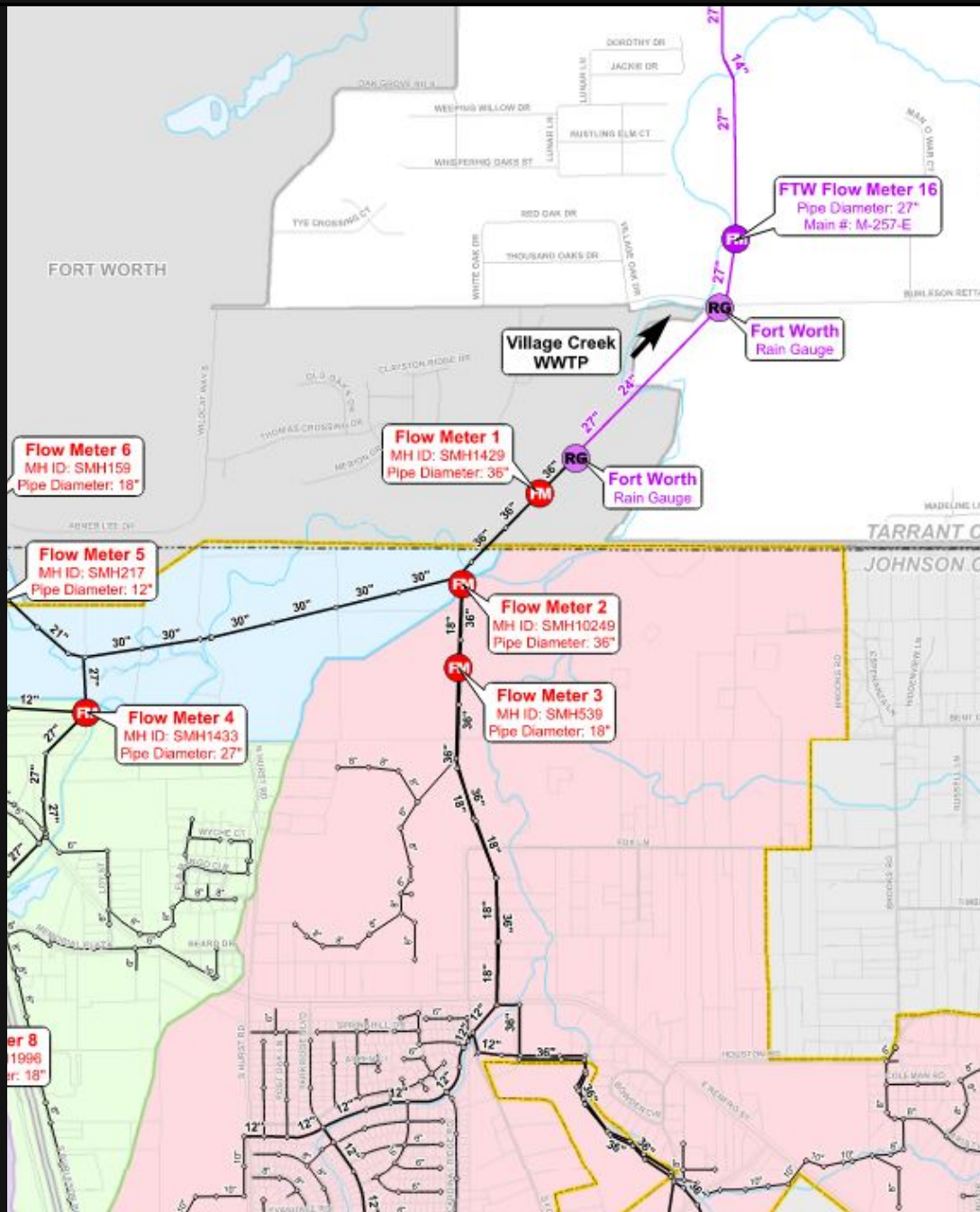
# **WATER / WASTEWATER MASTER PLAN**

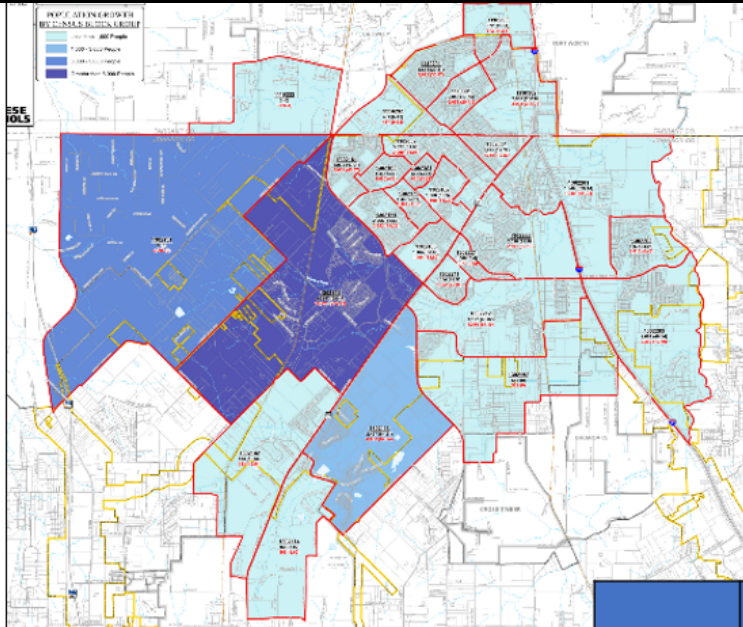




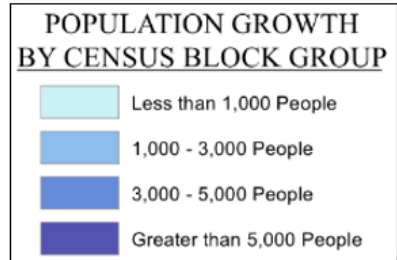
# METHODOLOGY - SEWER SYSTEM

1. Collect flow monitoring data to be used for flow projections
2. Evaluate the existing capacity of sewer lines
3. Identify growth-related needs, existing and future capacity restrictions
4. Time improvements based on expected development/growth



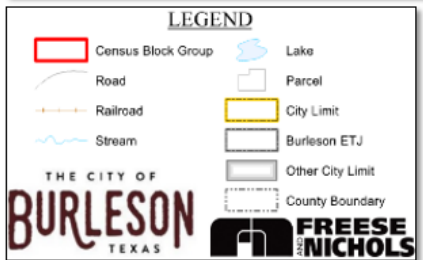


## WATER SERVED LAND USE ASSUMPTION SUMMARY



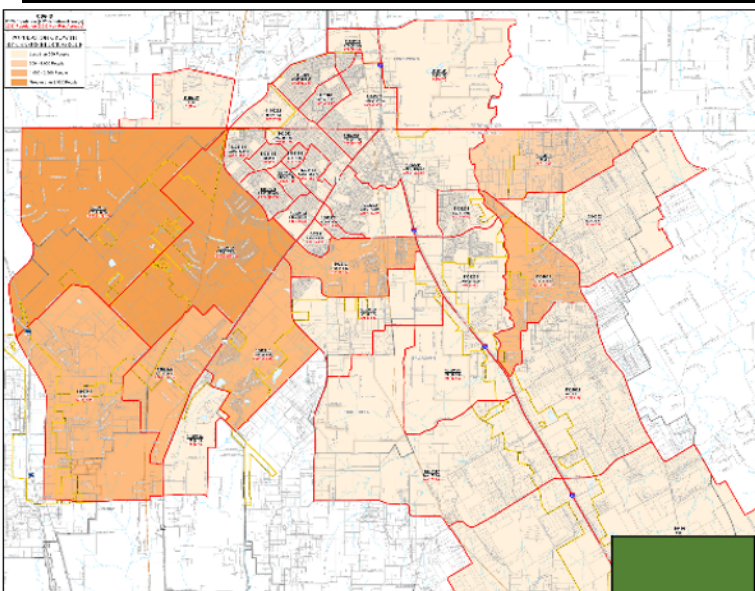
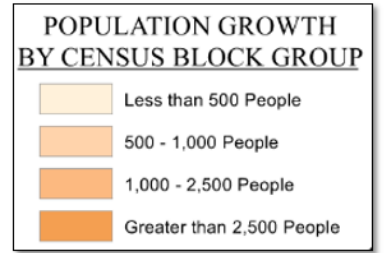
Year	Served Population	Served Non-Residential Acreage (Acres)
Existing	46,724	1,215
5-Year	52,860	1,465
<b>10-Year</b>	<b>60,548</b>	<b>1,717</b>
Buildout	72,146	2,000

\*Map showing 10-year projections



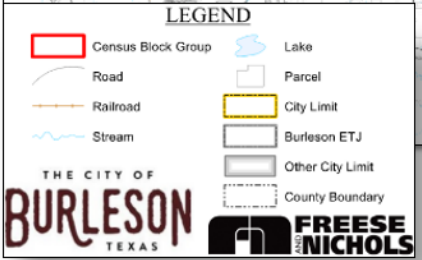
Water service area is NOT the same as sewer service area - multiple water providers serve the city limits and extra-territorial jurisdiction (ETJ)

## WASTEWATER SERVED LAND USE ASSUMPTION SUMMARY



Year	Served Population	Served Non-Residential Acreage (Acres)
Existing	49,760	1,795
5-Year	62,548	2,383
<b>10-Year</b>	<b>76,822</b>	<b>2,730</b>
20-Year	103,799	4,397
Buildout	120,821	6,523

\*Map showing 10-year projections

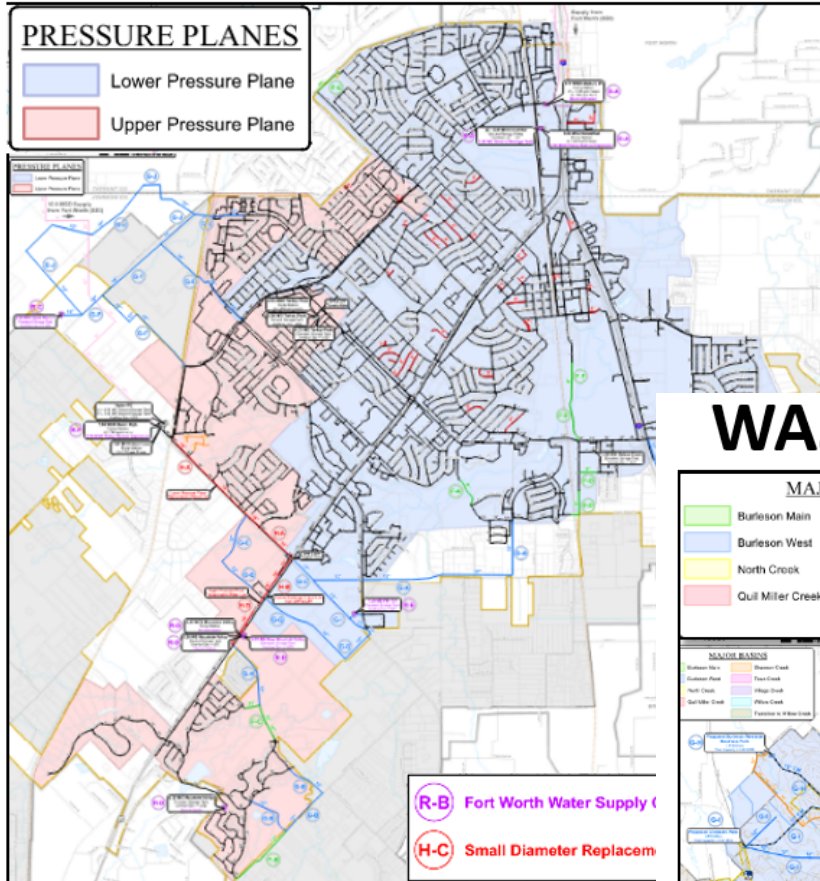


Land use assumptions are used to estimate population projections



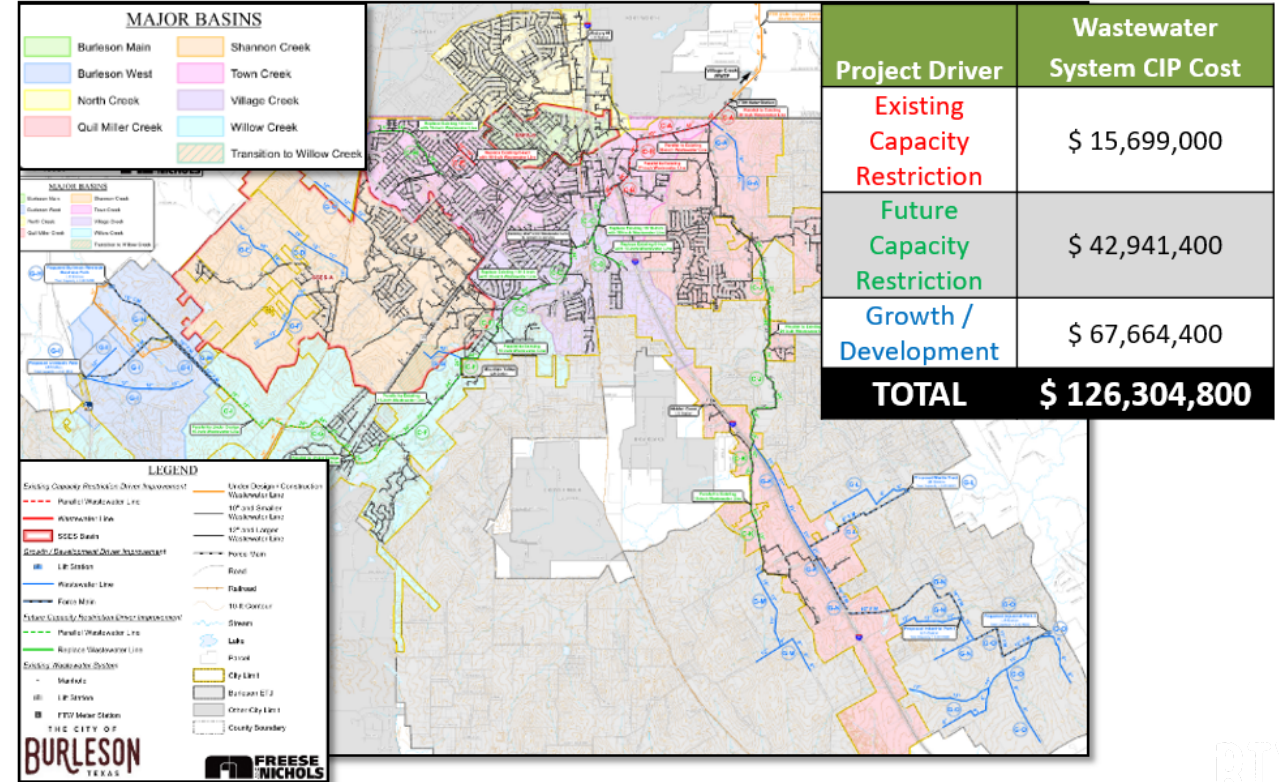
## WATER SYSTEM CIP

Project Driver	Water CIP Cost
Hydraulic Restriction	\$ 11,532,500
Growth/ Development	\$ 24,662,000
Fire Flow/ Looping	\$ 4,027,800
Regulatory/ Operational	\$ 37,631,600
<b>TOTAL</b>	<b>\$ 77,853,900</b>



**The master plan is an integral tool that identifies projects needed to support the existing and future needs due to growth and development.**

## WASTEWATER CIP (BUILDOUT)



**The masterplan is the basis for the City's capital improvement program**

## Regulatory/Operational Improvements

- Offsite Fort Worth water supply improvements
- Industrial Pump Station rehabilitation / expansion
- Hulen Pump Station added pumping capacity
- Additional Elevated Storage



# CIP Projects identified based on masterplan recommendations

## • Hydraulic Restriction Improvements

Hulen Street LPP 16-inch transmission main

## • Growth/Development Improvements

Hyder Ranch extension



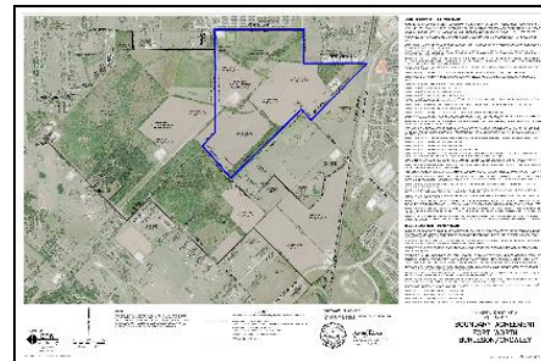
## WASTEWATER CIP SUMMARY

### • Hydraulic Restriction Improvements

Village Creek Parallel Interceptor

### • Growth/Development Improvements

Chisholm Summit / Craftmasters / Hyder Ranch service expansions





# Capital Improvement Planning

1. Capital Improvement Program (CIP) identified

2. Estimated construction cost used for fiscal planning

3. Annual re-evaluation and adjustments based on development trends and maintenance needs

Project Number	Water Project Name	Cost
<b>Hydraulic Restriction</b>		
H-A	16-inch County Road 920 Lower Pressure Plane Transmission Water Line	\$ 3,058,800
H-B	16-inch Wilshire Boulevard Upper Pressure Plane transmission Water Line	\$ 1,740,200
<b>Hydraulic Restriction Total</b>		<b>\$ 4,799,000</b>
<b>Growth / Development</b>		
G-A	12-inch County Road 714 Lower Pressure Plane Water Line	\$ 3,022,900
G-B	12-inch County Road 802 Upper Pressure Plane Water Line	\$ 1,004,700
G-C	12-inch FM 731 Lower Pressure Plane Water Line	\$ 1,157,200
G-D	12-inch I-35 W Lower Pressure Plane Water Line	\$ 2,972,100
G-E	12-inch Wilshire Boulevard Upper Pressure Plane Water Line	\$ 1,477,100
G-F	12-inch Village Creek Lower Pressure Plane Water Line	\$ 1,823,900
G-G	12-inch Wicker Hill Road Upper Pressure Plane Water Line	\$ 846,200
G-H	12-inch Village Creek Lower & FM 731 Pressure Plane Water Line	\$ 929,900
<b>Growth / Development Total</b>		<b>\$ 13,234,000</b>

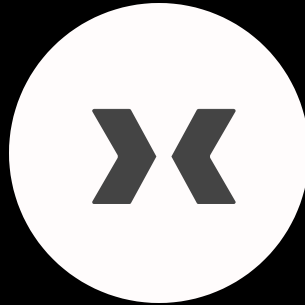
Project Number	Wastewater Project Name	Cost
<b>Existing Capacity Restriction Improvement</b>		
C-C	Village Creek Basin 27/30-inch Wastewater Replacement	\$ 8,328,700
C-D	Village Creek Basin 12-inch Wastewater Replacement	\$ 1,022,600
<b>Capacity Restriction Improvement Total</b>		<b>\$ 9,351,300</b>
<b>Future Capacity Restriction Improvement</b>		
C-A	Town Creek Basin 36/42-inch Parallel Interceptor	\$ 6,758,900
C-B	Town Creek Basin I-35W 30-inch Parallel Interceptor	\$ 3,955,100
C-E	Town Creek Parkview Drive 10-inch Wastewater Replacement	\$ 829,800
C-F	Willow Creek Basin Wilshire Boulevard 15-inch Parallel Interceptor	\$ 7,071,400
C-G	Willow Creek Basin Wilshire Boulevard 12-inch Parallel Interceptor	\$ 3,298,000
<b>Capacity Restriction Improvement Total</b>		<b>\$ 21,913,200</b>
<b>Growth / Development Improvement</b>		
G-A	Quil Miller Creek Basin North 10-inch Collector Line	\$ 1,517,500
G-B	Town Creek Basin East Hyder Ranch 12-inch Collector Line	\$ 1,243,900
G-C	Shannon Creek Basin West Hyder Ranch 12-inch Collector Line	\$ 1,372,500
G-D	Shannon Creek Basin SW Hulen Street 12-inch Collector Line	\$ 1,746,200
G-E	Shannon Creek Basin 10-inch Collector Line	\$ 1,181,100
G-F	Shannon Creek Basin County Road 1020 12-inch Collector Line	\$ 1,734,200
G-G	The Lakes 10/12-inch Collector Line	\$ 2,250,000
G-H	Burleson Westside Business Park Lift Station Force Main / Collector	\$ 6,375,500
G-I	Chisholm West Lift Station Force Main / Collector	\$ 7,144,000
G-J	Chisholm Trail Lift Station Force Main / Collector	\$ 1,426,300
G-K	Quil Miller Creek I-35W 15-inch Interceptor	\$ 4,301,200
G-L	Martin Tract Lift Station Force Main / Collector	\$ 3,588,000
G-M	I-35 West Lift Station Force Main / Collector	\$ 4,288,500
G-N	Industrial Park I Lift Station Force Main / Collector	\$ 8,819,100
G-O	Industrial Park II Lift Station Force Main / Collector	\$ 10,499,400
<b>Growth / Development Improvement Total</b>		<b>\$ 57,487,400</b>
<b>Grand Total</b>		<b>\$ 88,751,900</b>

# OPTIONS

RECOMMENDED



**Approve a minute order  
adopting the Mobility Plan and  
Water and Wastewater Master  
Plan as presented**



**Approve a minute order  
adopting the Mobility Plan and  
Water and Wastewater Master  
Plan with changes**



**Deny a minute order adopting  
the Mobility Plan and Water  
and Wastewater Master Plan**