



**NOTICE OF WORKSHOP TO BE HELD BY THE  
MCALLEN PUBLIC UTILITY BOARD OF TRUSTEES**

**DATE:** Tuesday, December 13, 2022  
**TIME:** 2:00 PM  
**PLACE:** McAllen City Hall  
3<sup>rd</sup> Floor  
1300 Houston Ave  
McAllen, Texas 78501

At any time during the course of this meeting, the McAllen Public Utility Board may retire to Executive Session under Texas Government Code 551.071(2) to confer with its legal counsel on any subject matter on this agenda in which the duty of the attorney to the McAllen Public Utility Board under the Texas Disciplinary Rules of Professional Conduct of the State Bar of Texas clearly conflicts with Chapter 551 of the Texas Government Code. Further, at any time during the course of this meeting, the McAllen Public Utility Board may retire to Executive Session to deliberate on any subject slated for discussion at this meeting, as may be permitted under one or more of the exceptions to the Open Meetings Act set forth in Title 5, Subtitle A, Chapter 551, Subchapter D of the Texas Government Code.

**CALL TO ORDER**

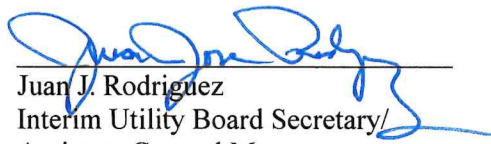
- 1. McAllen Public Utility Water and Wastewater Master Plan Status Update**
- 2. EXECUTIVE SESSION, CHAPTER 551, TEXAS GOVERNMENT CODE, SECTION 551.071 CONSULTATION WITH ATTORNEY, SECTION 551.072 LAND TRANSACTION, SECTION 551.074 PERSONNEL MATTERS; SECTION 551.087 ECONOMIC DEVELOPMENT NEGOTIATIONS**
  - a) Consideration of Economic Development Matters (Section 551.087, T.G.C.)
  - b) Consultation with City Attorney regarding pending litigation before the PUC (T.G.C. 551.071)

**ADJOURNMENT**

**IF ANY ACCOMMODATION FOR A DISABILITY IS REQUIRED (OR INTERPRETERS FOR THE DEAF), NOTIFY THE UTILITY ADMINISTRATION DEPARTMENT AT 681-1630 FORTY-EIGHT (48) HOURS PRIOR TO THE MEETING DATE. WITH REGARD TO ANY ITEM, THE McALLEN PUBLIC UTILITY BOARD MAY TAKE VARIOUS ACTIONS INCLUDING BUT NOT LIMITED TO RESCHEDULING AN ITEM IN ITS ENTIRETY FOR A FUTURE DATE OR TIME.**

**CERTIFICATION**

I, the Undersigned Authority, do hereby certify that the attached agenda of meeting of the McAllen Public Utility Board of Trustees is a true and correct copy and that I posted a true and correct copy of said notice on the bulletin board in the Municipal Building, a place convenient and readily accessible to the general public at all times, and said Notice was posted on the **9th day of December, 2022 at 3:00 p.m.** and will remain so posted continuously for at least 72 hours preceding the scheduled time of said meeting in accordance with Chapter 551 of the Texas Government Code.

  
Juan J. Rodriguez  
Interim Utility Board Secretary/  
Assistant General Manager

# Memo

**TO:** Marco A. Vega, P.E., General Manager

J.J. Rodriguez, Asst. General Manager

**FROM:** Carlos Gonzalez, P.E., Utility Engineer

Marc Ramirez, P.E., Utility Engineer

**DATE:** December 9, 2022

**SUBJECT:** **Water and Wastewater Master Plan Update Workshop Presentation**

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Freese and Nichols will be conducting a presentation on the Water and Wastewater Master Plan Update Project. Attached to this memo, is a copy of the Draft Presentation scheduled for December 13, 2022. The presentation will generally include a summary of Overall Scope Performed including but not limited to the following:

- Service Area Growth Assumptions/Trends
- Consumption Patterns
- Recommended Short and Long Term Capital Improvement Projects
- Estimated Construction Costs corresponding to recommended projects

The Consulting Team of Freese and Nichols as well as MPU Staff will be available for comments and/or questions.

# **MCALLEN PUBLIC UTILITY**

## **WATER & WASTEWATER**

### **MASTER PLAN**

### **STATUS UPDATE**

**December 13<sup>th</sup>, 2022**

# MASTER PLAN STATUS

Population Projections

• 100% Complete

Pressure Recording & Flow Monitoring

• 100% Complete

Model Calibration

• 100% Complete

Existing System Assessment

• 100% Complete

Renewal Program Planning

• 100% Complete

Future System Assessment

• 100% Complete

Proposed CIP Development

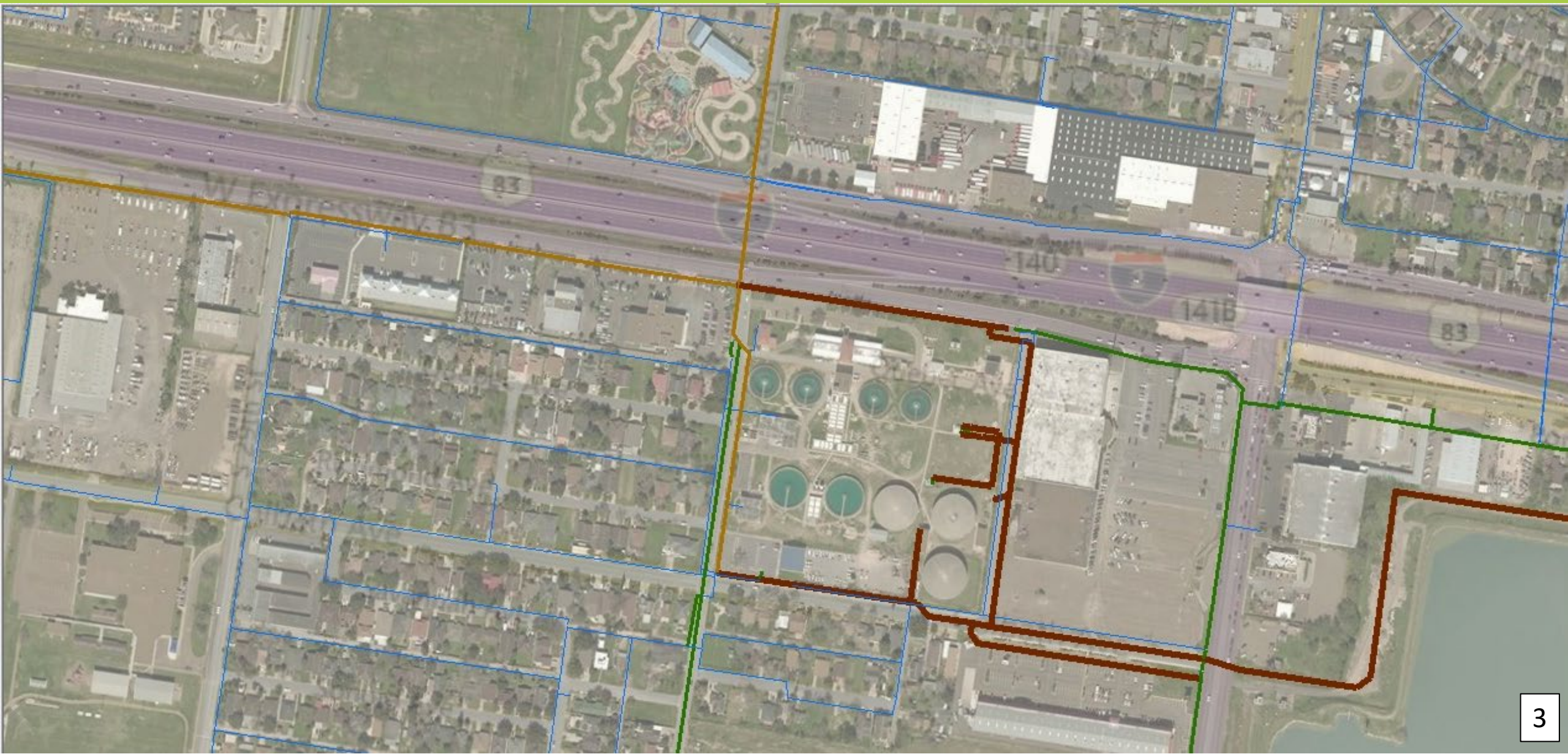
• 100% Complete

Draft Report

• 90% Complete



# WATER





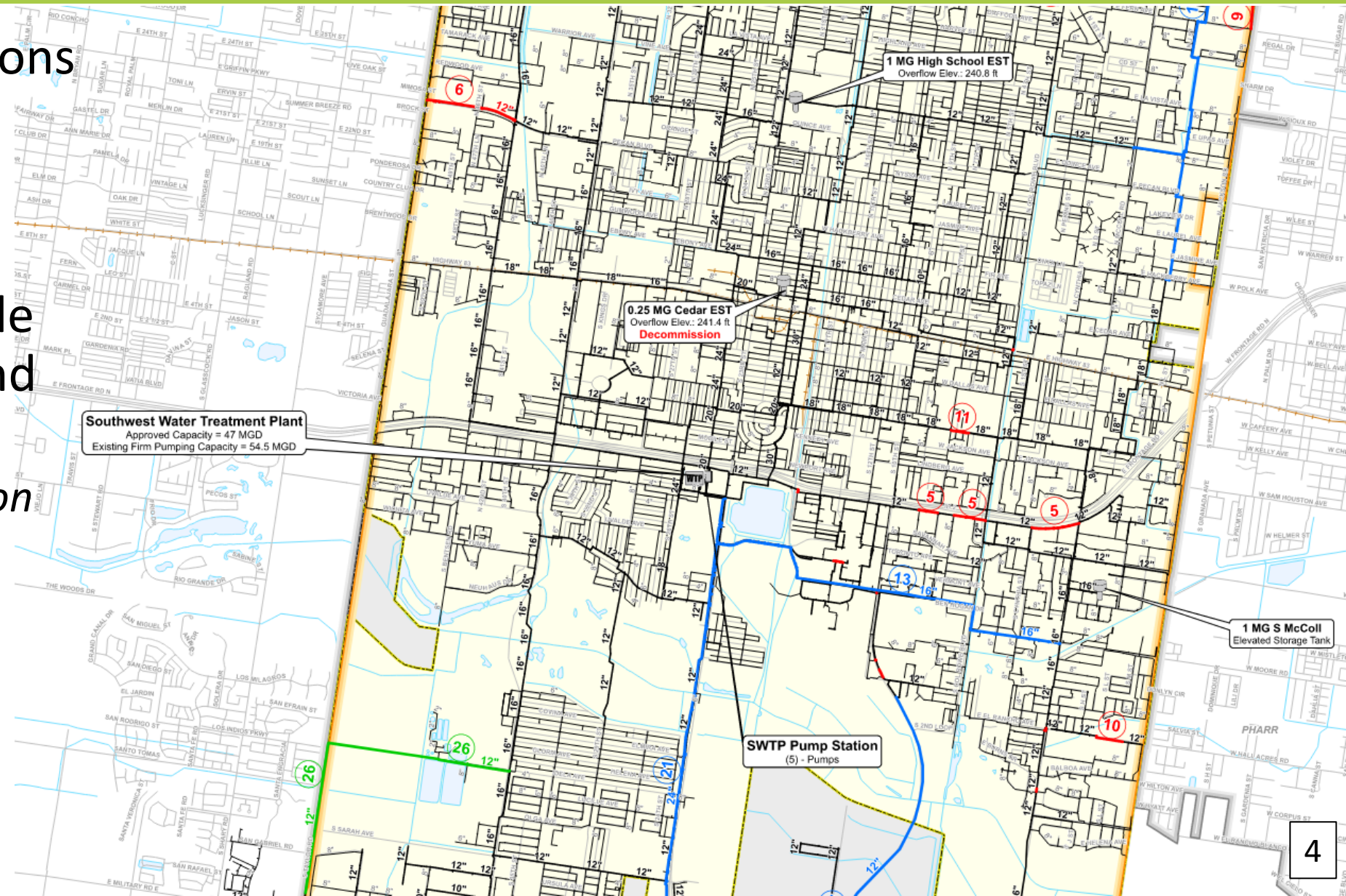
# WATER CIP

- Three Planning Horizons

- 2027 – Near
- 2032 – Intermediate
- 2042 – Long

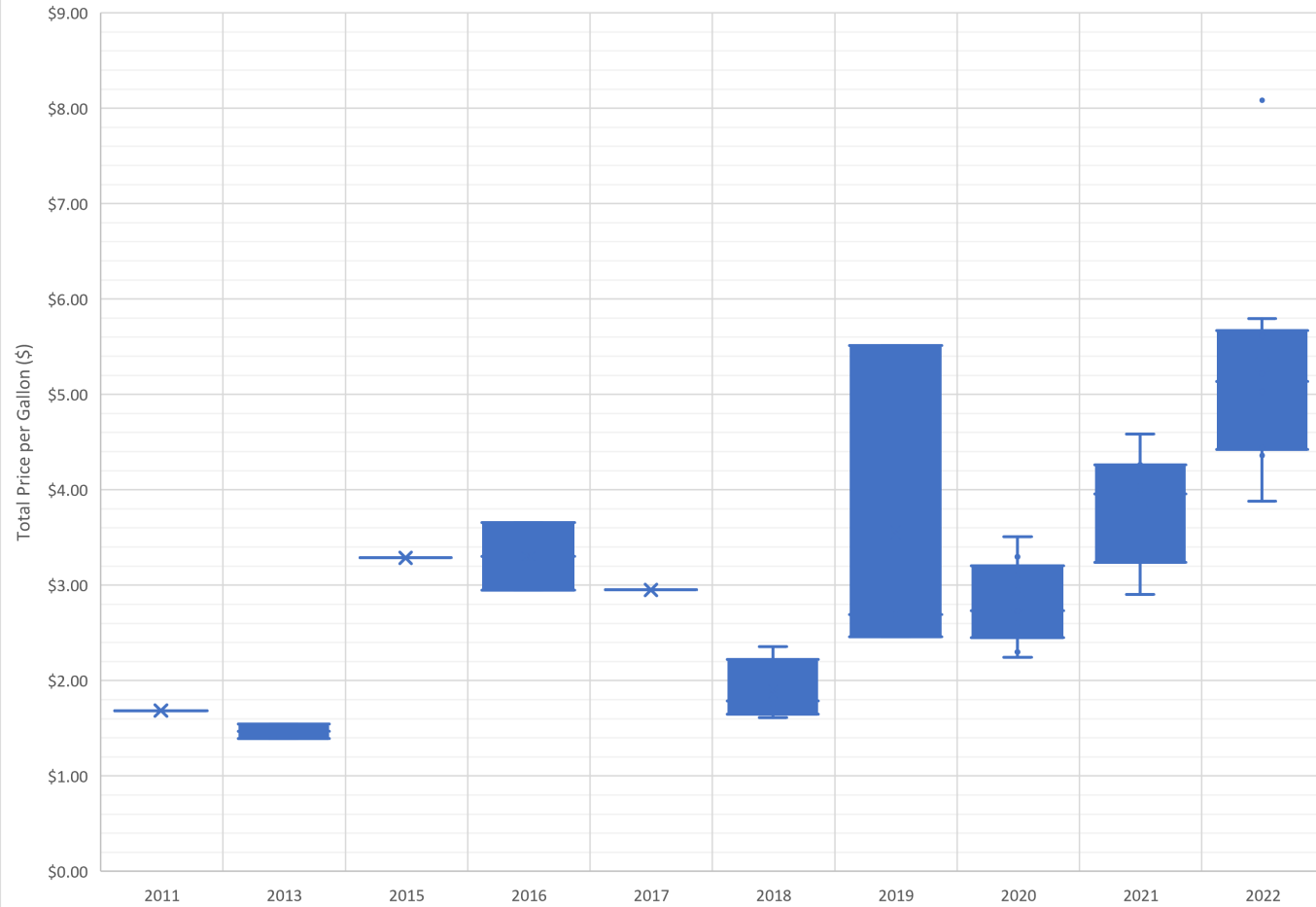
- Improvements include distribution mains and elevated storage

- *Future WTP expansion dependent on coordination with development*



# ESTIMATION OF PROJECT COST

Total Price of New EST



An analysis of previous ten years of elevated storage tank pricing shows similar trends with pipeline pricing increases

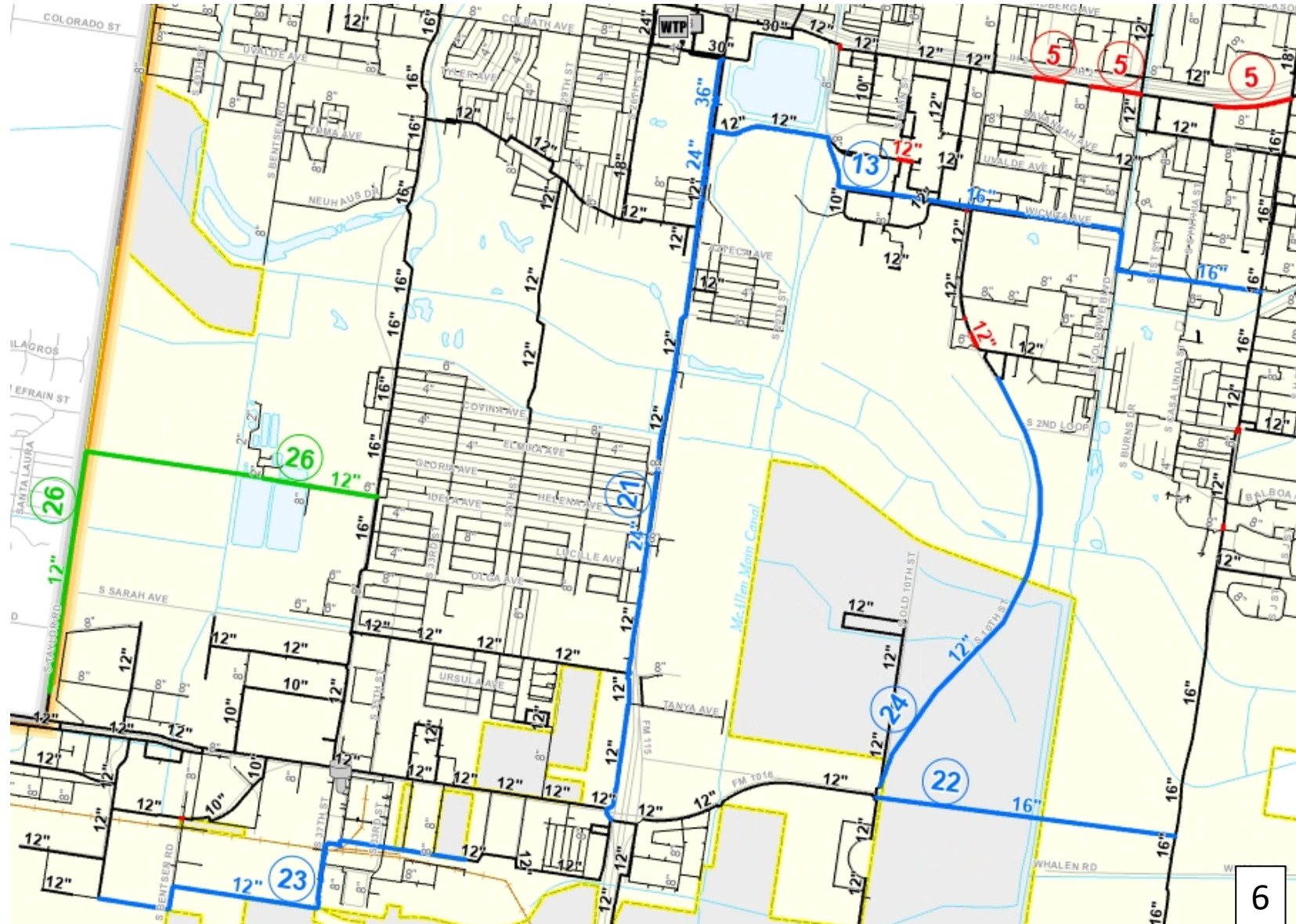
Removing and Relocating Irrigation Systems	LF	\$30.00	200	\$6,000.00
Tree and Landscape Protection (Level IIB) (COSA Spec)	LF	\$30.00	319	\$9,570.00
8" Ductile Iron Pipe	LF	\$500.00	20	\$10,000.00
Water Line Adjustment	LS	\$10,000.00	1	\$10,000.00
8" PVC Gravity Sanitary Sewer Pipe (SDR-26, ASTM 2241, 160 PSI) (0'-6' Depth)	LF	\$120.00	363	\$43,560.00
8" PVC Gravity Sanitary Sewer Pipe (SDR-26, ASTM 2241, 160 PSI) (6'-10' Depth)	LF	\$150.00	863	\$129,450.00
8" PVC Gravity Sanitary Sewer Pipe (SDR-26, ASTM 2241, 160 PSI) (10'-14' Depth)	LF	\$210.00	475	\$99,750.00
8" PVC Gravity Sanitary Sewer Pipe (SDR-26, ASTM 2241, 160 PSI) (14'-18' Depth)	LF	\$250.00	92	\$23,000.00
10" PVC Gravity Sanitary Sewer Pipe (SDR-26, ASTM 2241, 160 PSI) (0'-6' Depth)	LF	\$150.00	75	\$11,250.00
10" PVC Gravity Sanitary Sewer Pipe (SDR-26, ASTM 2241, 160 PSI) (6'-10' Depth)	LF	\$180.00	200	\$36,000.00
10" PVC Gravity Sanitary Sewer Pipe (SDR-26, ASTM 2241, 160 PSI) (10'-14' Depth)	LF	\$270.00	140	\$37,800.00
10" PVC Gravity Sanitary Sewer Pipe (SDR-26, ASTM 2241, 160 PSI) (14'-18' Depth)	LF	\$300.00	122	\$36,600.00
Adjust Existing Manholes (W/ New Ring and Watertight Cover)	EA	\$5,000.00	3	\$15,000.00
4' Dia. Sanitary Sewer Manhole (0'-6' Depth) Watertight	EA	\$13,000.00	14	\$182,000.00
4' Dia. Shallow Flat Top Sanitary Sewer Manhole (0'-4' Depth) Watertight	EA	\$13,000.00	1	\$13,000.00
Extra Depth Manhole (>6')	VF	\$500.00	41	\$20,500.00
4' Dia. Sanitary Sewer Drop Manhole (0'-6' Depth) Watertight	EA	\$15,000.00	1	\$15,000.00
Extra Depth Drop Manhole (>6')	VF	\$500.00	12	\$6,000.00
Cast-In-Place Concrete, 4' Dia. (Permanent Doghouse)	EA	\$16,000.00	1	\$16,000.00
Sanitary Sewer Laterals (SDR-26, ASTM 2241, 150 PSI)	LF	\$120.00	353	\$42,360.00
Two-Way Sanitary Sewer Cleanout (Heavy Duty)	EA	\$2,100.00	26	\$54,600.00
Concrete Encasement, Cradles, Saddles, & Collars	CY	\$360.00	38	\$13,680.00



# WATER KEY PROJECTS

- Project 13 – Improved operation of McColl Tank
- Projects 21, 22, and 24 – Primary transmission mains for development in south
- Projects 23 and 26 – Provides additional capacity to growth areas

*\*Supports water resilience plan to allow all customers to be served from Northwest WTP during an outage at the South WTP*

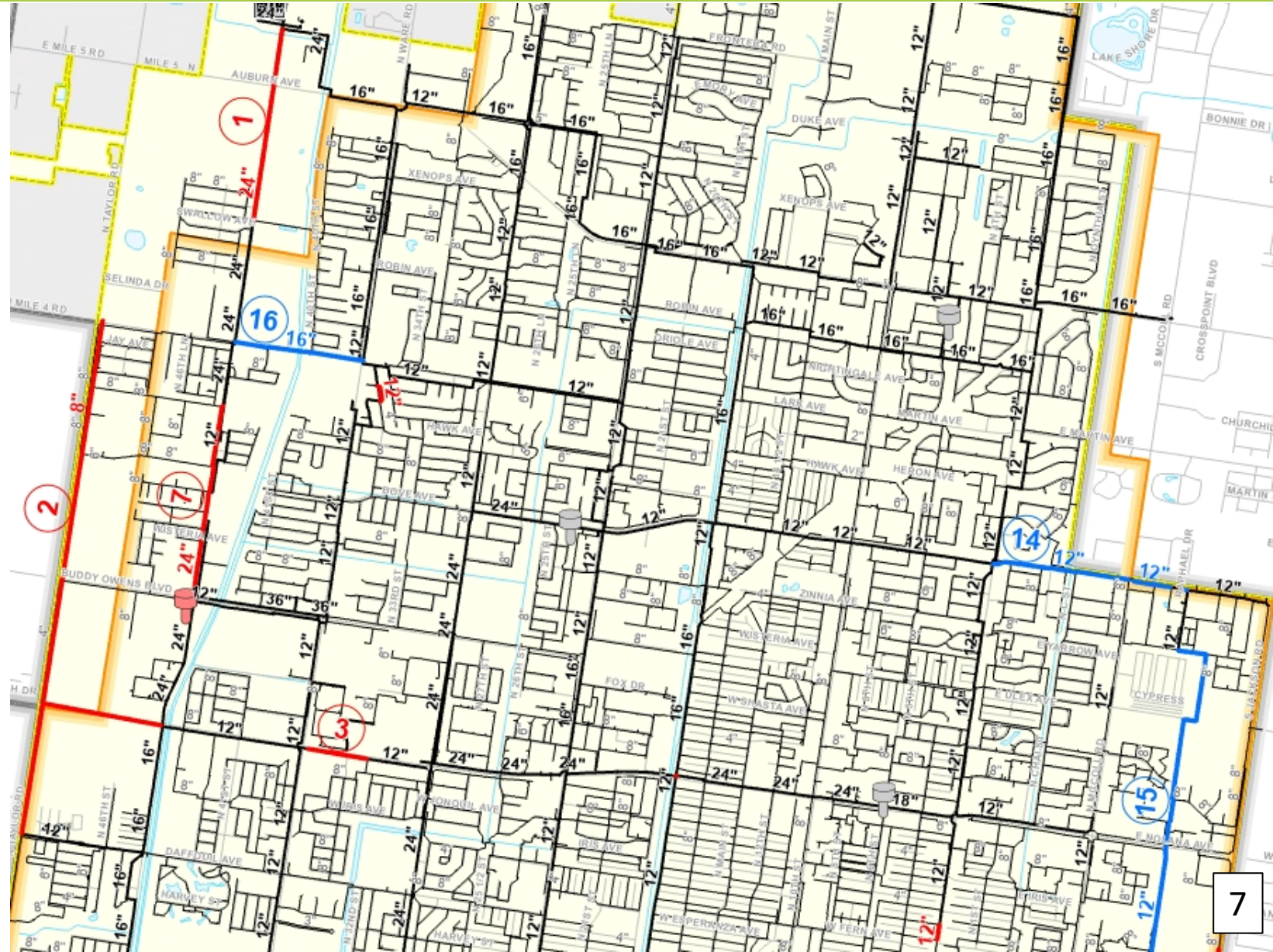




# WATER KEY PROJECTS

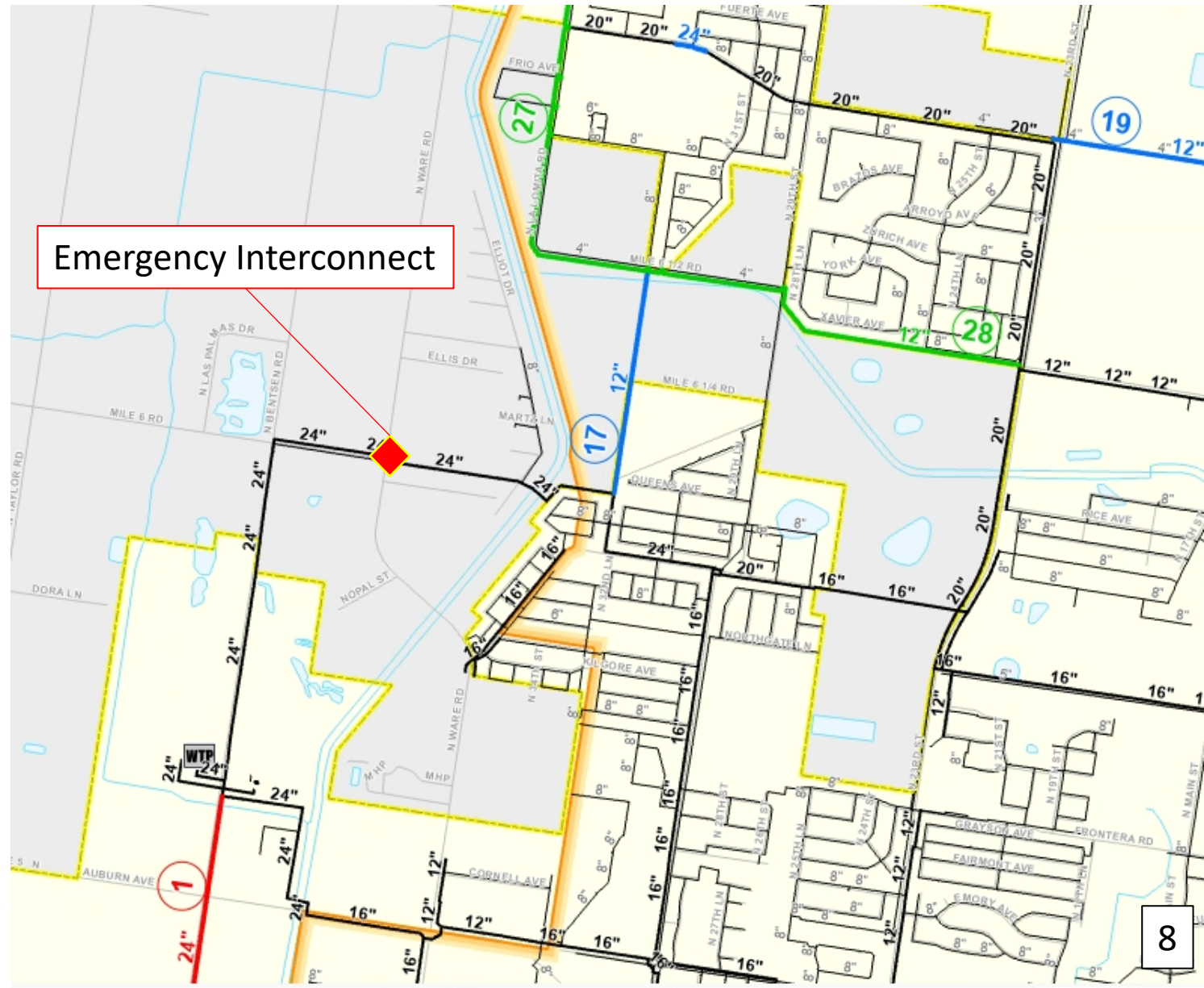
- Project 1 – Improved transmission from Northwest WTP
- Project 7 – Supplies proposed new 1 MG EST
- Project 2 – Improves looping and fire flow capacity in western service area
- Projects 14 and 15 – Improves service in eastern service area

*\*Supports water resilience plan to allow all customers to be served from Northwest WTP during an outage at the South WTP*



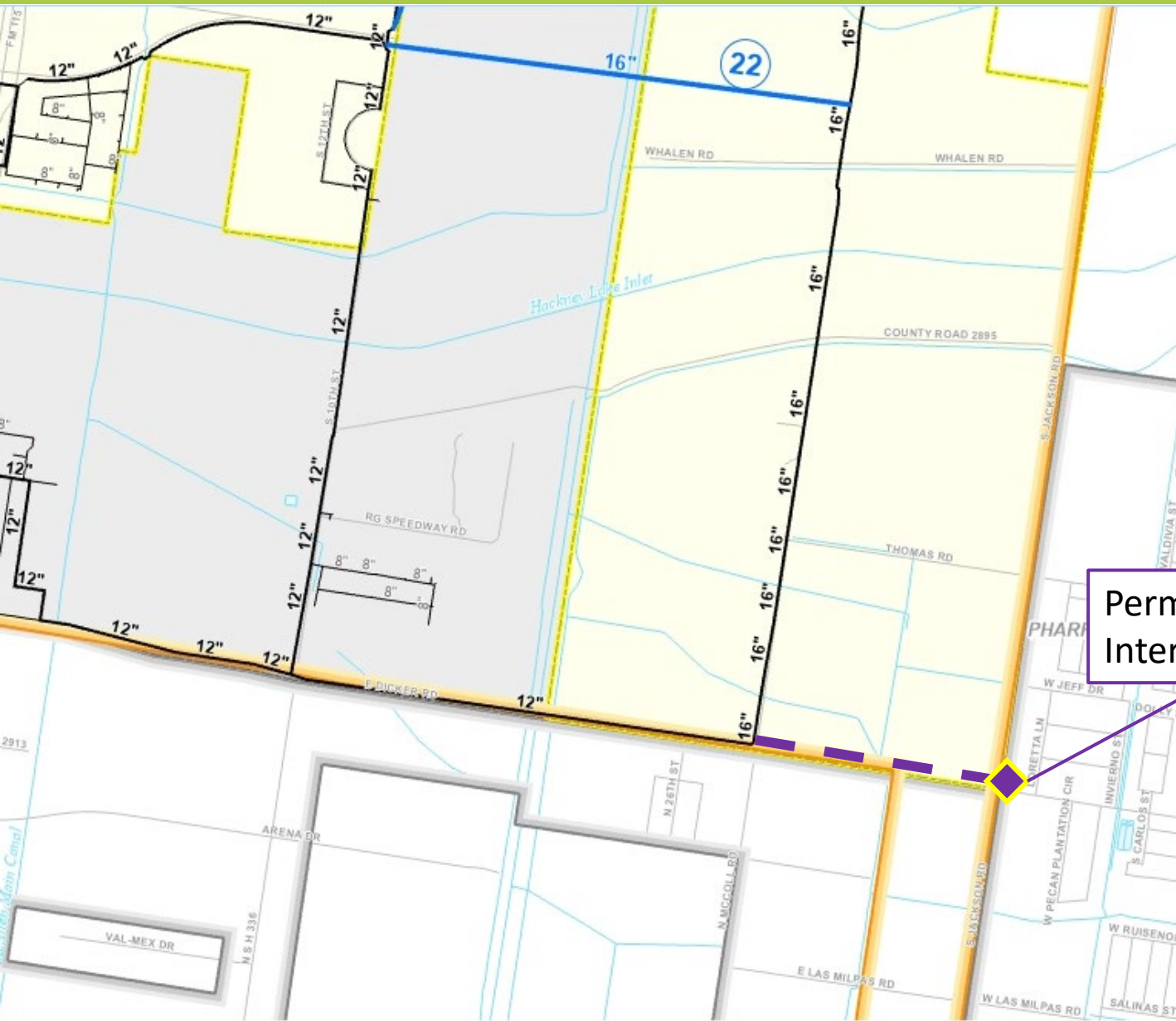
# LOCAL INTERCONNECTIONS

- Proposed emergency Interconnect with Sharyland WSC through existing 24-inch main along Mile 6 Rd
- Ultimate location of interconnect being coordinated with Sharyland WSC





# LOCAL INTERCONNECTIONS

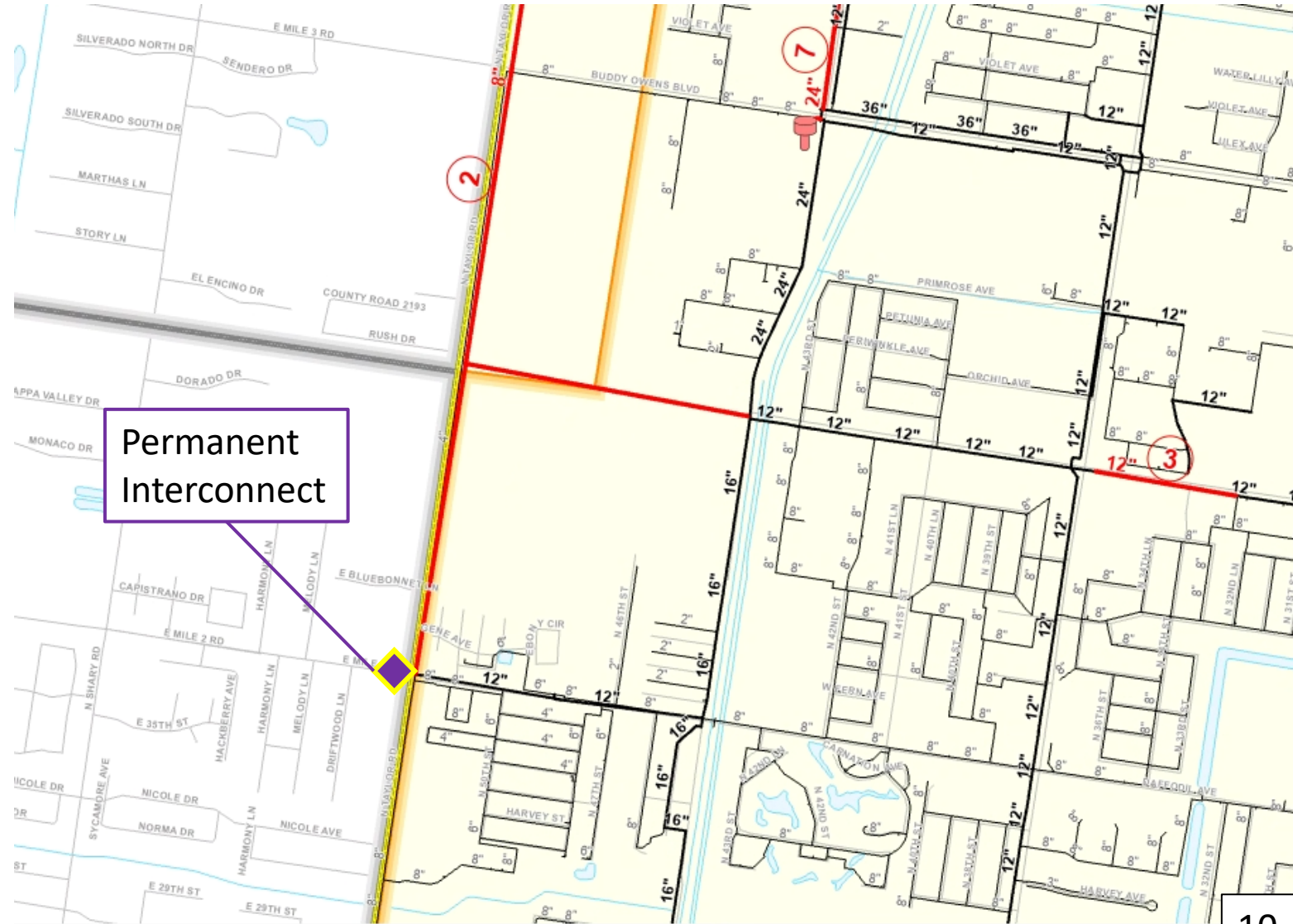


- Potential permanent interconnect with Pharr through proposed 12-inch main
- Served by existing 16-inch and 12-inch mains



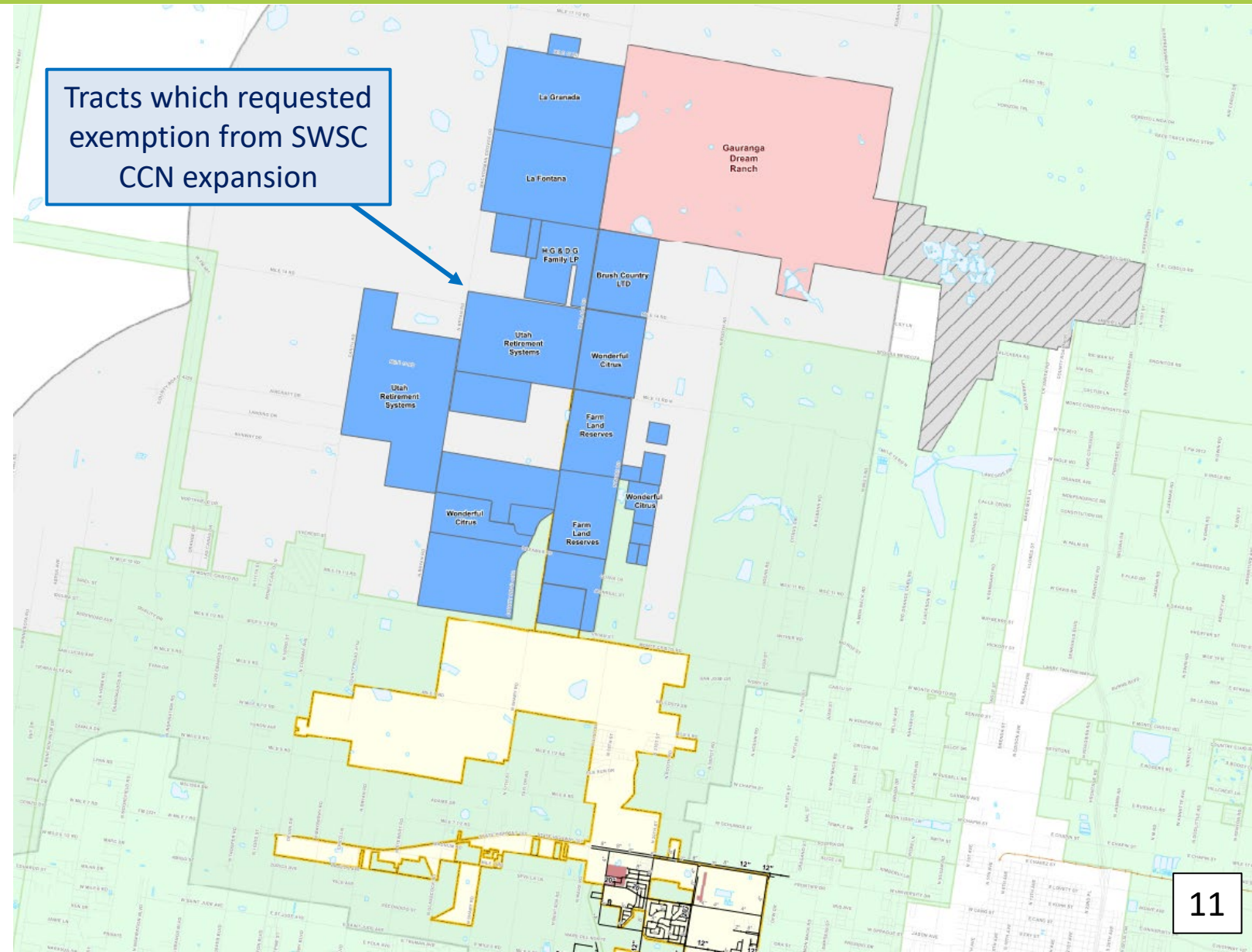
# LOCAL INTERCONNECTIONS

- Proposed interconnect to supply water to Agua SUD
  - Water delivered to Mission through interconnect
  - Equal volume of water provided to Agua SUD by Mission
- Served by existing 12-inch main along Daffodil Ave and supported by proposed CIP 2



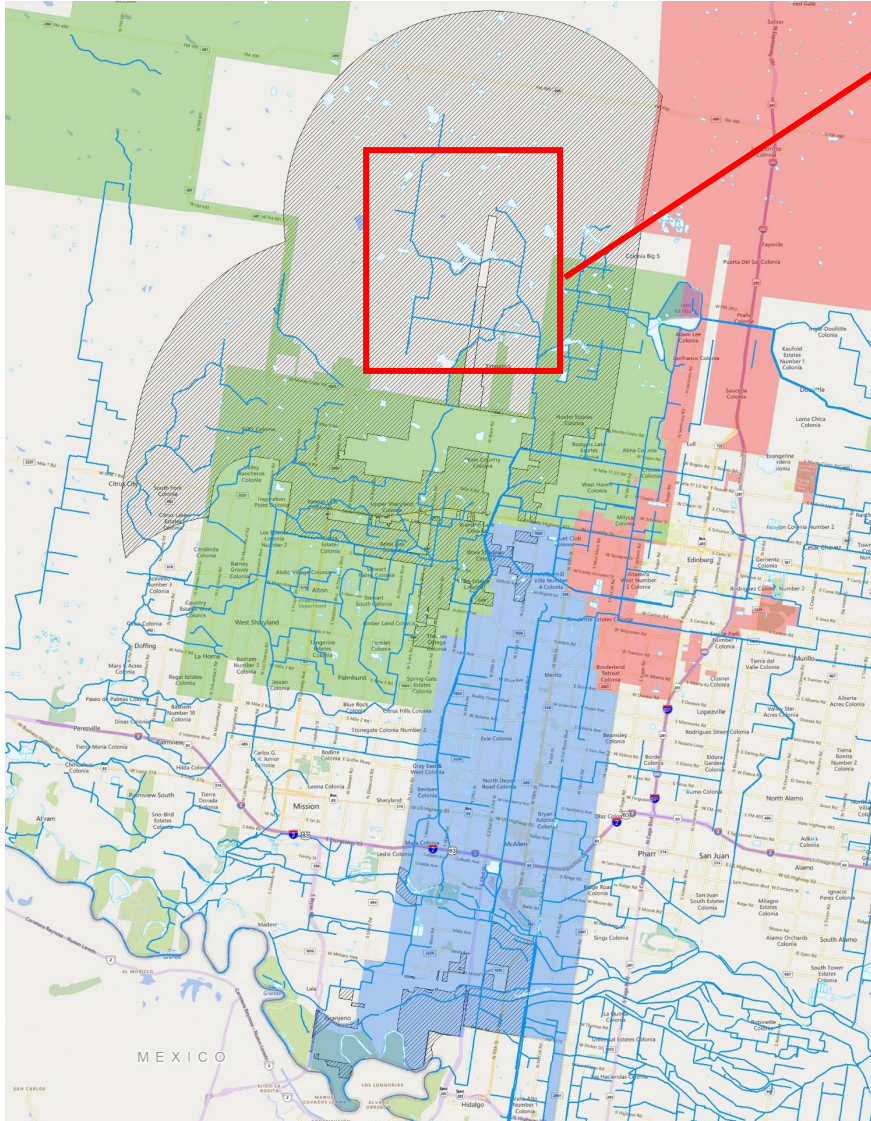
# WATER DEVELOPABLE AREA (NORTH)

- Multiple property owners, totaling over 11,400 acres, requested to be exempted from Sharyland CCN expansion
- Including Gauranga Dream Ranch, over 16,000 developable acres to be served by future WTP
- Future possible demands = 18.8 MGD





# WATER TREATMENT PLANT SITING



## Proposed Area for New WTP

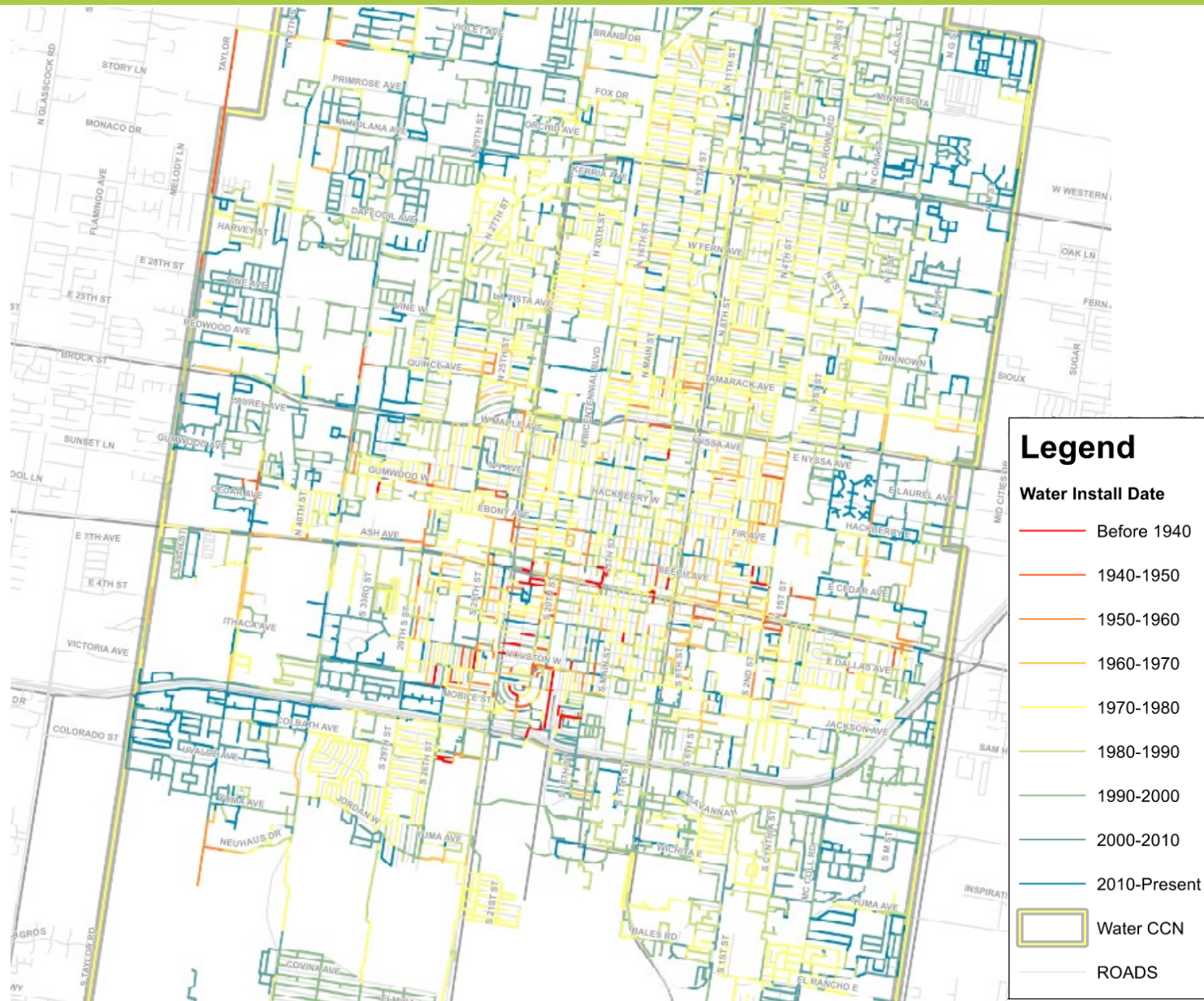
- Existing Northwest WTP expandable to 22 MGD
- Additional capacity would be required to serve developable properties north of Sharyland CCN
- Irrigation canal system not preferred as source due to existing supply limitations and water quality (variable turbidity) issues
- Groundwater micro-filtration WTP common for other regional potable water suppliers



# WTP SITING CONSIDERATIONS

- Proposed WTP location may be influenced by developer interest and cost participation
- WTP should be expandable to accommodate growth
- Water quality and production rates may dictate method of treatment
  - Brackish groundwater typical in the area
- PUC hesitant to grant CCN expansions without documentation of requests for service

# DISTRIBUTION SYSTEM RISK ASSESSMENT

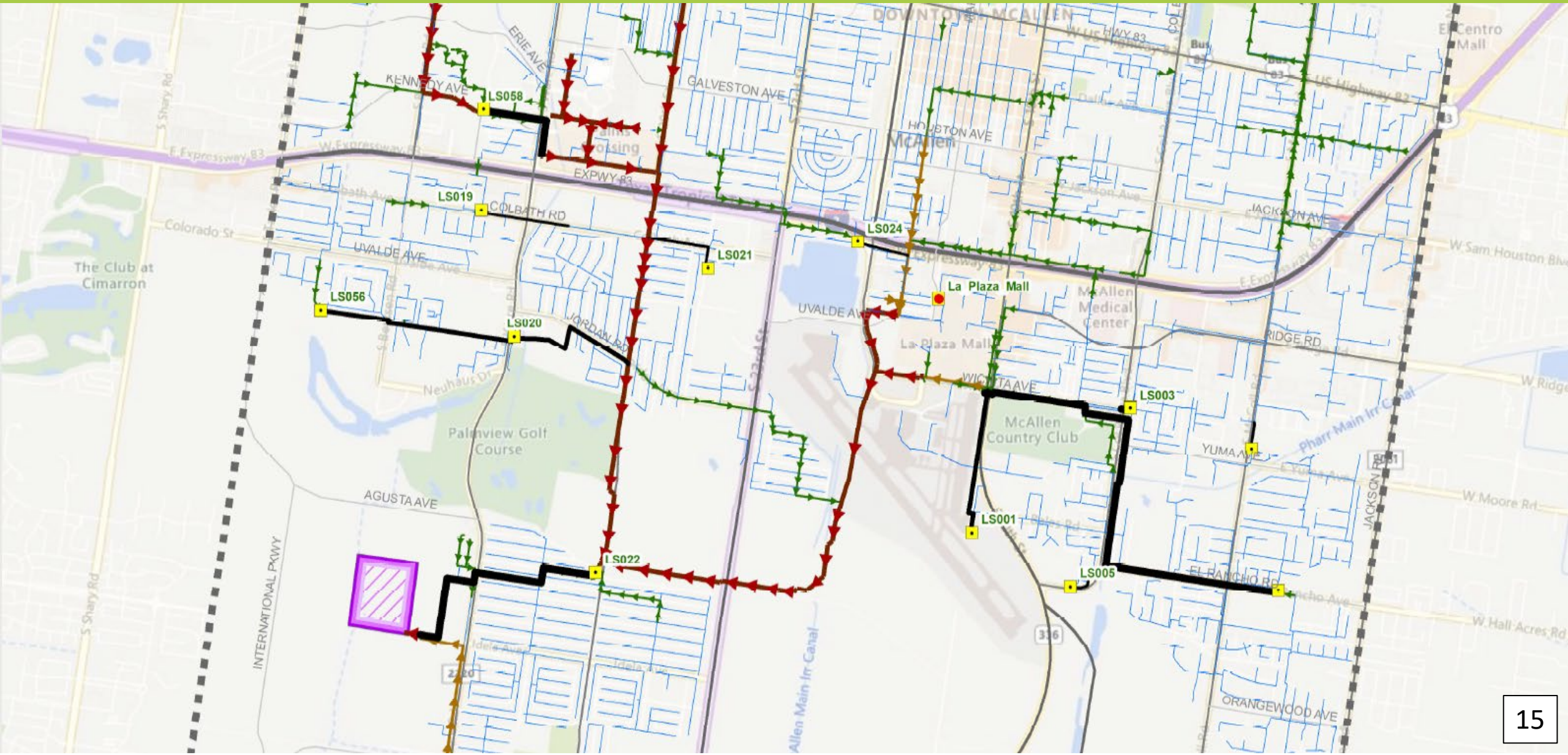


- Existing water system assets may be assessed by age, pipe size, material type, work order history, and proximity to critical customers
  - Pipe age associated with adjacent parcel improvement dates where asset information not available
  - Pipe material and size is well documented
  - Work order history well documented for past five years
  - Critical customers assigned to assets
    - Hospitals
    - Schools
    - Police/Fire/EMS
    - Government Facilities
    - Elderly/Special Needs Care

*Ongoing program to prioritize improvement as system ages and grows!*



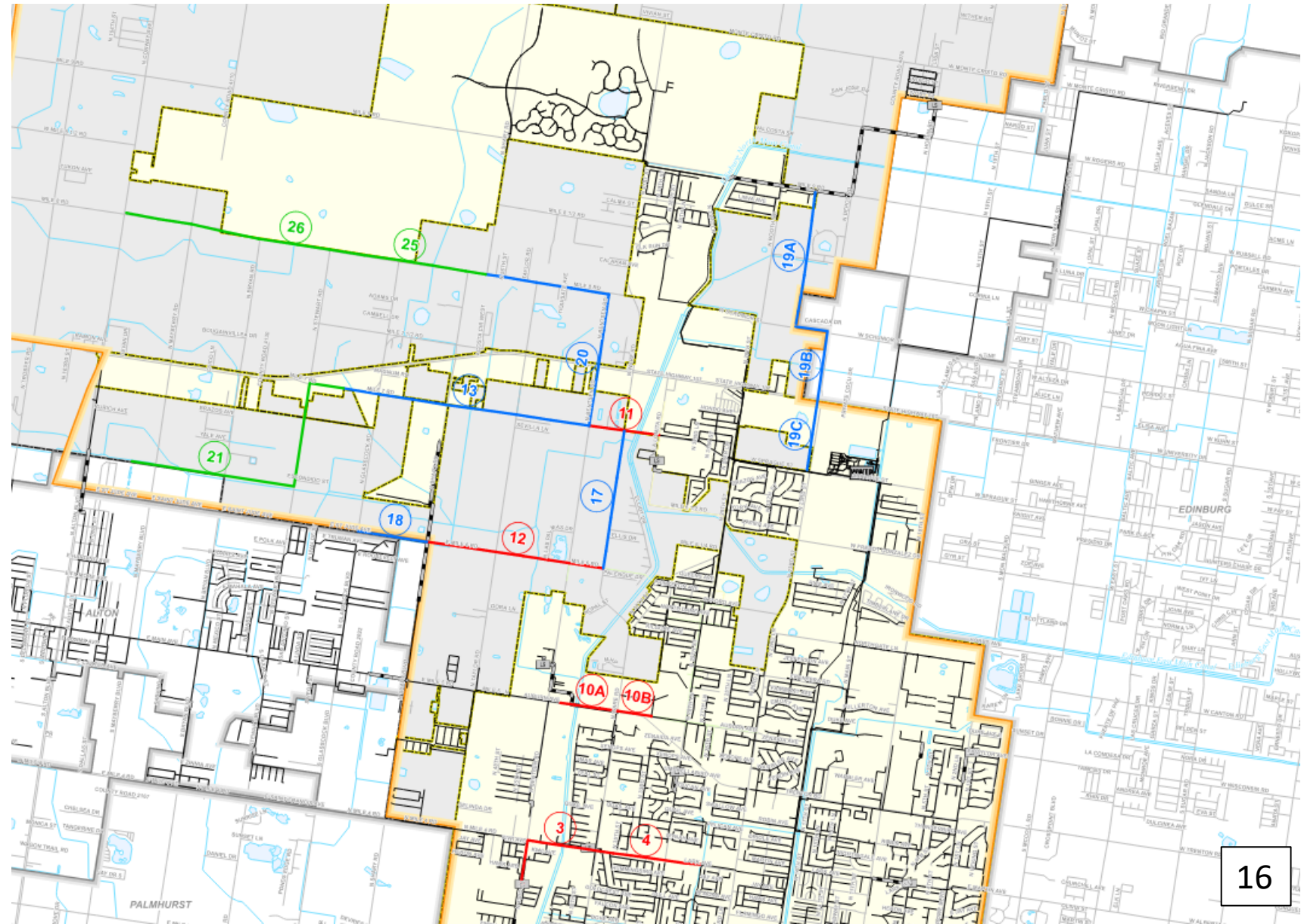
# WASTEWATER





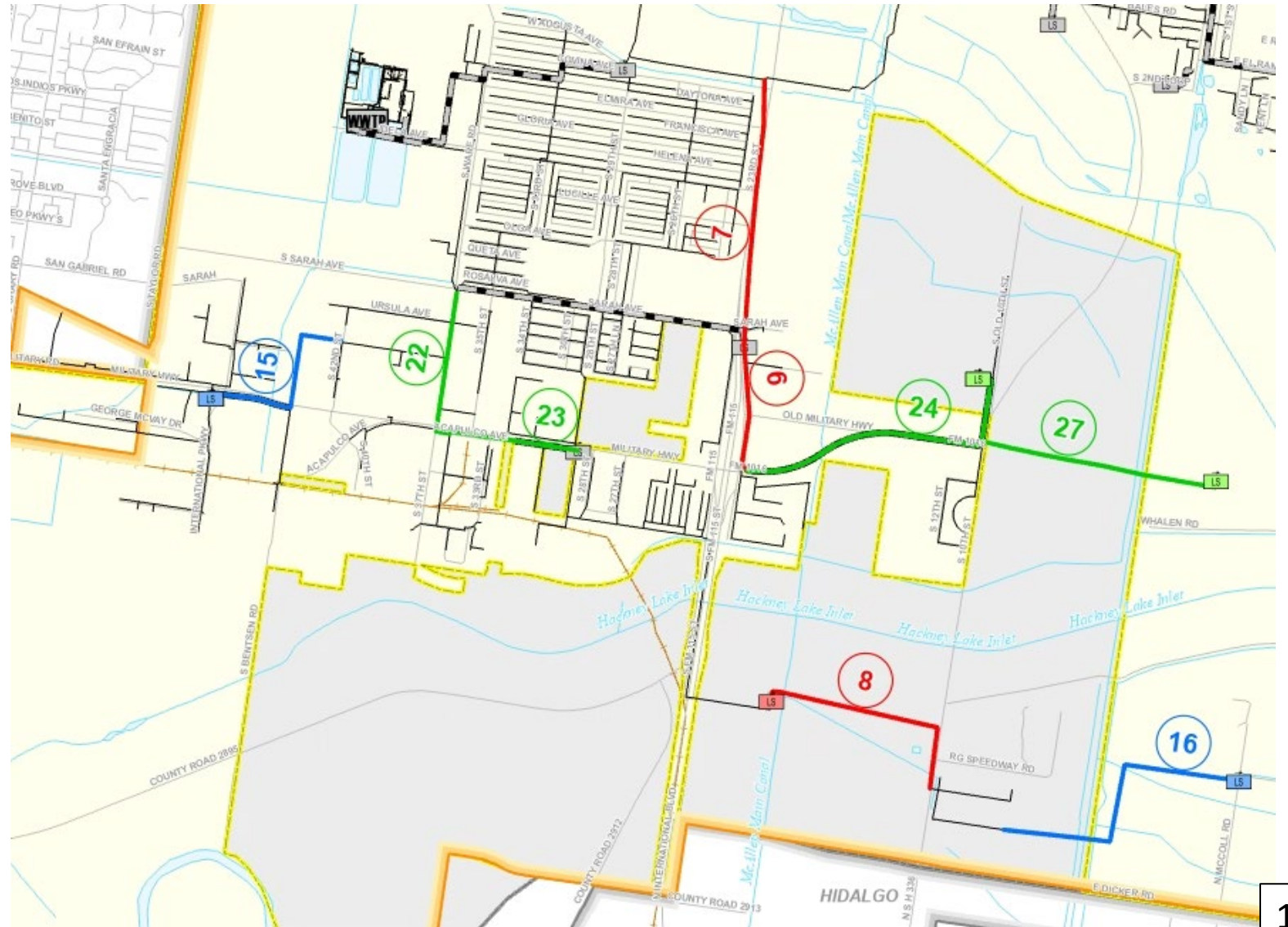
# WASTEWATER CIP

- Three Planning Horizons
  - 2027 – Near
  - 2032 – Intermediate
  - 2042 – Long
- Improvements include gravity lines, force mains, lift stations, and lift station eliminations



# WASTEWATER KEY PROJECTS

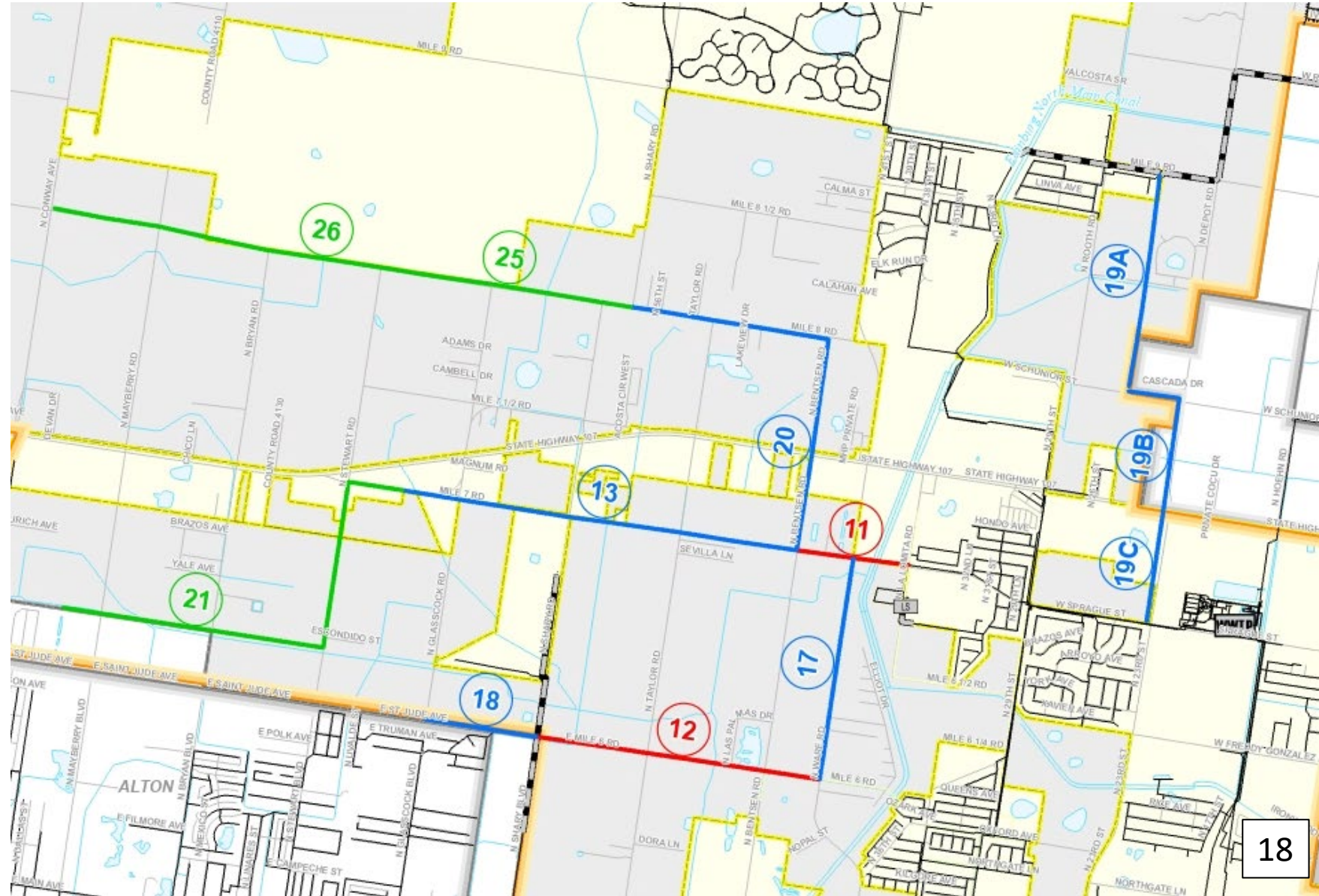
- Project 7 – Elimination of LS031
- Projects 8, 16, and 27 – Provides sewer service to new, developing areas
- Projects 15, 22, and 23 – Provides additional capacity to growth areas





# WASTEWATER KEY PROJECTS

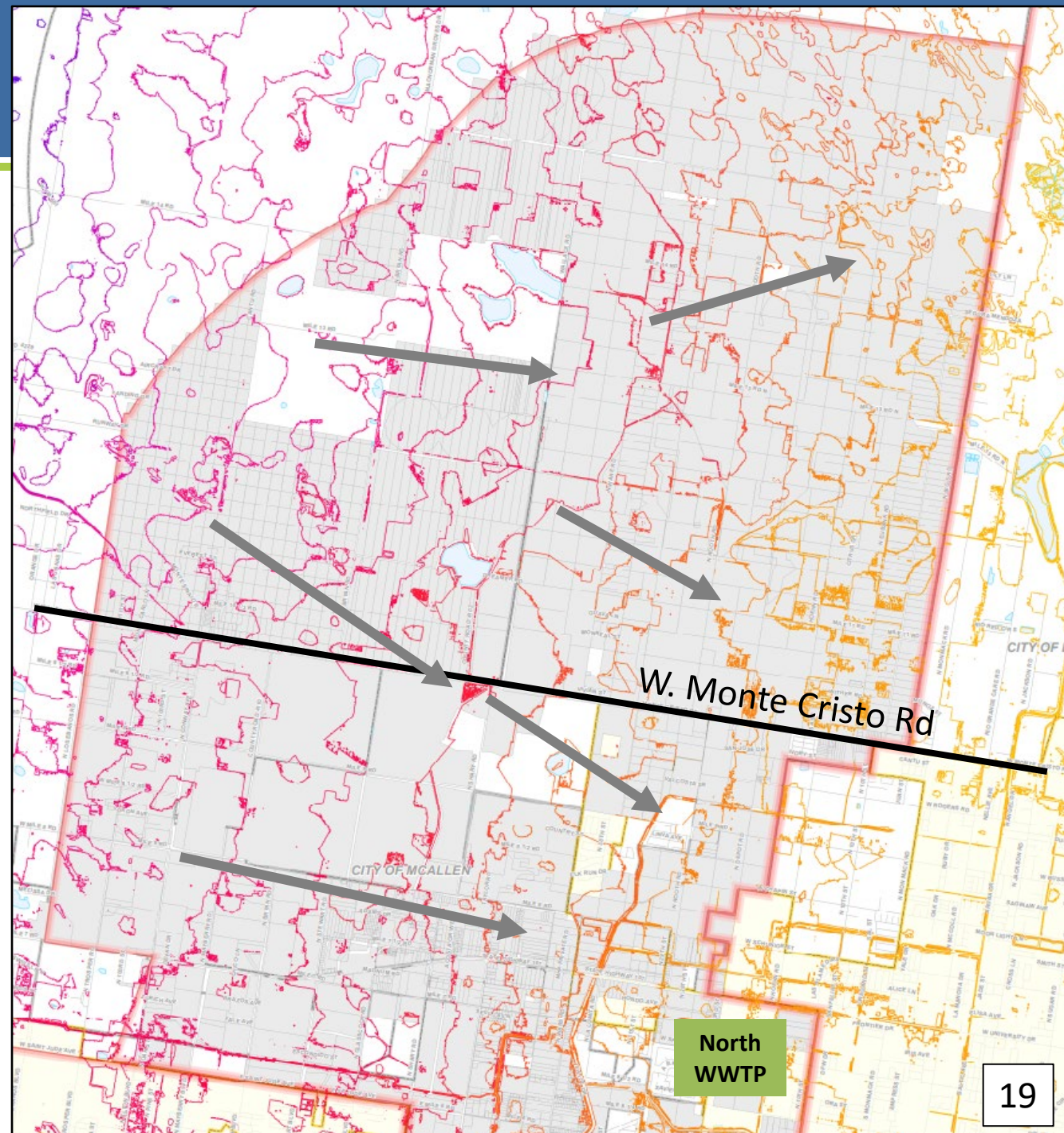
- Project 11 – Continuation of Sprague Interceptor
- Projects 20, 25, and 26 – Serves growth along Mile 8 and later phases of Tres Lagos
- Projects 12, 17 and 18 – Mile 6 developments
- Projects 19A-19C – Relocates LS16 south to increase service area and relieve existing gravity mains downstream





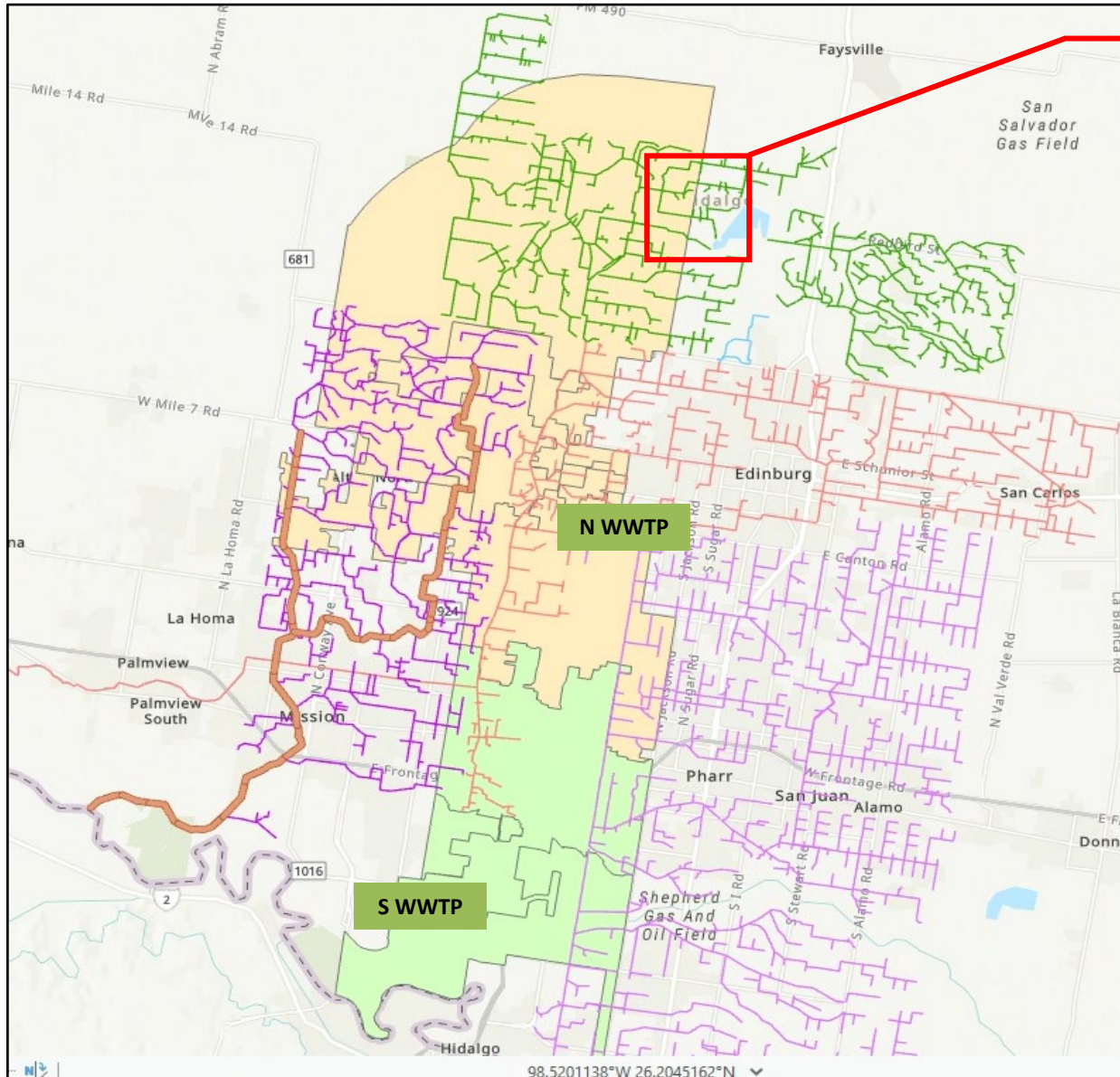
# FAR-NORTH TOPOGRAPHY

- WWTP siting dependent on topography
- Elevations generally slope from West to East
- Developable parcels south of W Monte Cristo Rd. can be served by North WWTP

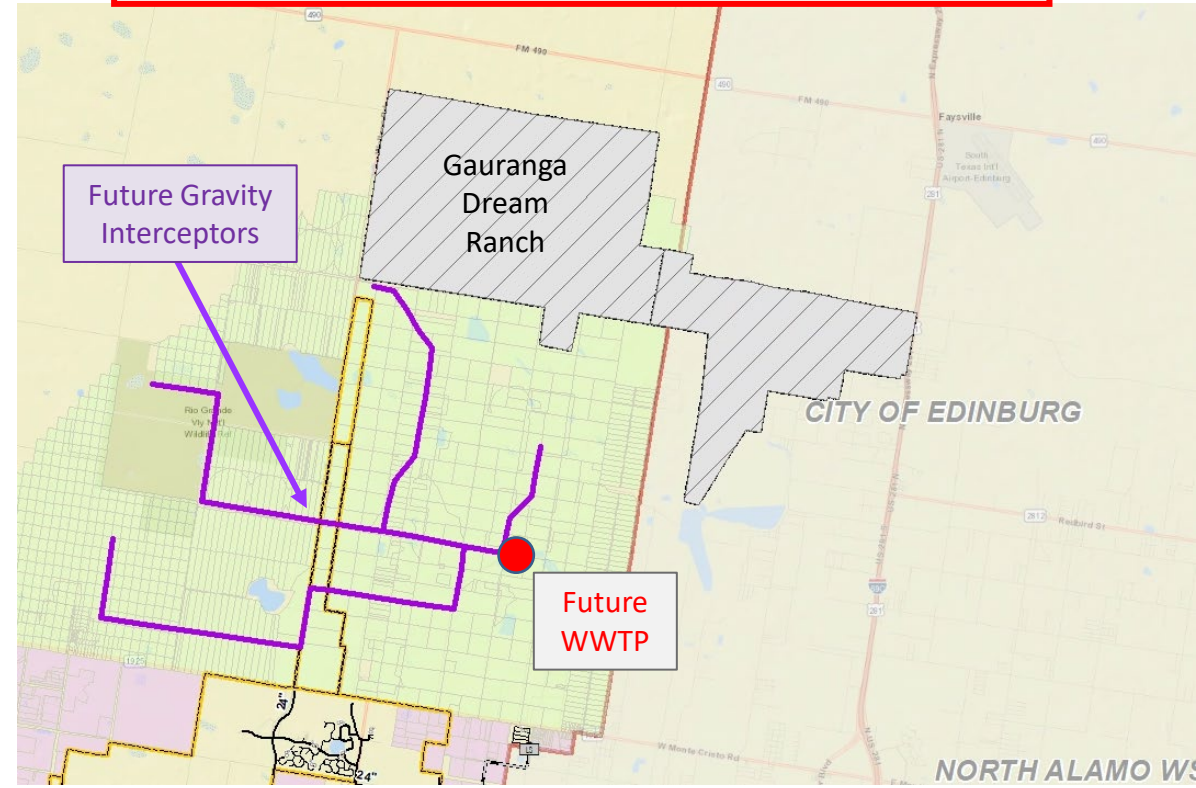




# FUTURE WASTEWATER TREATMENT PLANT SITING



## Proposed Location of New WWTP



- Topography Drains East Towards Lake Edinburg
- Future WWTP to be Sited on the Eastern Border of the McAllen Wastewater CCN
- Drain to Hidalgo County Drainage District Channels Towards Lake Edinburg





# WATER CIP

Project Number	Project Name	Cost
<b>Short Term Projects</b>		
1	N. Bentsen 24-inch Water Line	\$ 2,631,300
2	N. Taylor Rd 8-inch Water Line	\$ 3,167,200
3	Nolana Loop 12-inch Water Line	\$ 435,400
4	Proposed Buddy Owens EST	\$ 7,327,500
5	E. Frontage Rd 12-inch Water Line	\$ 1,186,000
6	W. Pecan Blvd 12-inch Water Line	\$ 1,020,000
7	N. Bentsen/Mile 3 24-inch Water Line Extension	\$ 3,098,400
8	N. 23rd St 12-inch Water Line	\$ 293,000
9	N. Jackson Rd 8-inch Water Line	\$ 162,800
10	El Rancho Ave 12-inch Water Line	\$ 271,100
11	Miscellaneous Water Line Connections	\$ 1,126,800
<b>Short Term Total</b>		<b>\$ 20,719,500</b>
<b>Intermediate Projects</b>		
12	S. 23rd St 36-inch Water Line	\$ 1,555,400
13	Uvalde Ave 16-inch Water Line	\$ 6,297,200
14	E Dove Ave. 12-inch Water Lines	\$ 1,267,200
15	N. Commerce Center St Water Lines	\$ 6,557,400
16	Lark Ave 16-inch Water Line	\$ 1,319,000
17	N. 33rd St 12-inch Water Line	\$ 1,024,000
18	N. 10th St 12-inch Water Line	\$ 1,991,500
19	W. Sprague St Water Lines	\$ 1,510,700
20	FM 107 12-inch Water Line	\$ 3,945,100
21	W. Military Highway 24-inch Water Line	\$ 9,823,600
22	Floodway 16-inch Water Line	\$ 2,778,400
23	Hackney 12-inch Water Line	\$ 2,963,300
24	Airport Runway 12-inch Water Line	\$ 2,927,500
25	Mile 7 Ln	\$ 254,800
<b>Intermediate Total</b>		<b>\$ 44,215,100</b>
<b>Long Term Projects</b>		
26	Idela Ave 12-inch Water Line	\$ 3,457,000
27	N. La Lomita Rd 12-inch Water Line	\$ 2,146,000
28	Edinburg Canal 12-inch Water Line	\$ 1,523,900
<b>Long Term Total</b>		<b>\$ 7,126,900</b>
<b>CIP Total</b>		<b>\$ 64,934,600</b>

- Costs generated from recent bid-tabs for north, central, south, and costal Texas communities
  - Historic escalating material, transportation, logistics, and labor costs over past three years
  - Cost increase rates consistent among all regions!
- Large intermediate period projects may be delayed based on growth trends, relieving cost burden in 10-year planning window



# WASTEWATER CIP

Project Number	Project Name	Cost
<b>Short Term Projects</b>		
1	8-inch Gravity Main and LS015 Elimination	\$ 474,500
2	LS012 10-inch Gravity Line	\$ 377,800
3	15-inch Gravity Main and LS049 Elimination	\$ 2,329,600
4	24-inch Gravity Main and LS036 Elimination	\$ 4,299,600
5	Redwood Ave 12-inch Gravity Line	\$ 1,280,900
6	LS031 Upstream 18-inch Gravity Line	\$ 1,327,100
7	LS031 Elimination 21-inch Gravity Line	\$ 4,625,100
8	South LS001 12-inch Gravity Line	\$ 2,016,800
9	South LS001 Lift Station	\$ 2,329,600
10A	Mile 5 Gravity Line Improvements, Phase A	\$ 2,027,900
10B	Mile 5 Gravity Line Improvements, Phase B	\$ 1,281,700
11	Mile 7 Sprague Interceptor 48-inch Gravity Line	\$ 4,739,200
12	Mile 6 Interceptor 12-inch Gravity Line, Phase A	\$ 3,031,400
<b>Short Term Total</b>		<b>\$ 30,141,200</b>
<b>Intermediate Projects</b>		
13	N Glasscock Sprague Interceptor 24-inch Gravity Line	\$ 7,471,500
14	New 1.0 MGD LS044 and 8-inch Force Main	\$ 3,529,400
15	LS044 12-inch Gravity Line	\$ 1,056,500
16	New South LS002 and Force Main	\$ 2,604,600
17	Mile 6 Interceptor 12-inch Gravity Line, Phase B	\$ 2,357,300
18	Mile 6 Interceptor 12-inch Gravity Line, Phase C	\$ 1,149,700
19A	LS016 Relocation, Phase A	\$ 2,611,100
19B	LS016 Relocation, Phase B	\$ 4,264,900
19C	LS016 Relocation, Phase C	\$ 1,525,900
20	Mile 8 24-inch Gravity Main	\$ 8,577,700
<b>Intermediate Total</b>		<b>\$ 35,148,600</b>
<b>Long Term Projects</b>		
21	Highway 107 Sprague Interceptor 18-inch Gravity Line	\$ 7,328,800
22	LS037 21-inch Gravity Main	\$ 3,179,300
23	LS037 10-inch Force Main	\$ 340,800
24	New 1.5 MGD LS039 and 10-inch Force Main	\$ 6,184,000
25	Sharyland 24-inch Gravity Main	\$ 4,945,000
26	Sharyland 18-inch & 12-inch Gravity Main	\$ 4,177,200
27	Whalen Rd 0.4 MGD Lift Station and 4-inch Force Main and 8-inch Gravity	\$ 2,391,700
<b>Long Term Total</b>		<b>\$ 28,546,800</b>
<b>CIP Total</b>		<b>\$ 93,836,600</b>

- Costs generated from same sources as water CIP
- Some projects broken into multiple phases/years based on type of work and ongoing system improvements
- Growth projects in south/southeast areas assumed conservative growth patterns and should be re-evaluated for specific land use in future years

# **MCALLEN PUBLIC UTILITY**

## **WATER & WASTEWATER**

### **MASTER PLAN**

### **STATUS UPDATE**

**December 13<sup>th</sup>, 2022**