



**City of Willow Park  
City Council  
Special Called Meeting Agenda  
Municipal Complex  
516 Ranch House Rd, Willow Park, TX 76087  
Tuesday, July 21, 2020 at 7:00 p.m.**

**Call to Order**

**Invocation & Pledge of Allegiance**

**Proclamations**

**Public Comments (Limited to five minutes per person)**

Residents may address the Council regarding an item that is not listed on the agenda. Residents must complete a speaker form and turn it in to the Secretary five (5) minutes before the start of the meeting. The Rules of Procedure states that comments are to be limited to five (5) minutes. The Texas Open Meetings Act provides the following:

- (a) If, at a meeting of a governmental body, a member of the public or of the governmental body inquires about a subject for which notice has not been given as required by this subchapter, the notice provisions of this subchapter do not apply to:
  - (1) A statement of specific factual information given in response to the inquiry; or
  - (2) A recitation of existing policy in response to the inquiry.
- (b) Any deliberation of or decision about the subject of the inquiry shall be limited to a proposal to place the subject on the agenda for a subsequent meeting.

**Consideration of Minutes**

- A. Approve City Council Regular Meeting Minutes – June 9, 2020 regular meeting minutes

**Regular Agenda Items**

- 1. Consider and Act on a Site Plan for a restaurant on Lot 2, Block 2, The Village at Willow Park, City of Willow Park, Parker County, Texas located on the southwest corner of Willow Bend Drive and Willow Crossing Drive.

2. Consider and Act on a Site Plan for an addition to the Eye Clinic -Medical Office on 1.601 acres, Lot 1, Block 9 and 73; El Chico Addition, City of Willow Park, Parker County, Texas, located at 101 Chuckwagon Trail.
3. Discussion/ Action: The City Council may consider, discuss, and/or approve a consulting services agreement with the Tommy Morris Agency to solicit sealed proposals for the City's group health, dental, vision and life insurance.
4. Discussion Only: Fort Worth Water Project Update.
5. Discussion Only: To consider and act on a budget calendar.
6. Discussion Only: Review of the TWDB permit application process and timing for the wastewater project.
7. Discussion Only: Wastewater treatment options.
8. Discussion/ Action: To consider and act on items to be considered for future council meetings.
9. Discussion/ Action: To consider and act on setting the date and time for the next council meeting.

### **Executive Session**

The City Council may convene into a closed executive session pursuant to the provisions of the Texas Open Meetings Act, Texas Government Code Chapter 551, in accordance with the authority contained in the following sections:

- 551.071-Consultation with Attorney

- 551.072-Deliberations about Real Property
  - A. Property for sewer plant

The City Council reserves the right to retire into closed, executive session on any of the regular agenda items listed above should the need arise and if authorized by Chapter 551, of the Texas Government Code, including but not limited to: Government Code Sections 551.071-Consultation with Attorney; 551.072-Deliberations about Real Property; 551.074-Personnel Matters; 551.087-Economic Development.

Following Executive Session, the City Council will reconvene into Regular Session and may take any action deemed necessary as a result of the Executive Session.

### **Regular Agenda Items**

10. Discussion/ Action: To consider and act on items as a result of the Executive Session.

### **Informational**

- A. Mayor & Council Member Comments
- B. City Manager's Comments

### **Adjournment**

I certify that the above notice of this meeting posted on the bulletin board at the municipal complex of the City of Willow Park, Texas on or before July 17, 2020, at 5:00 p.m.

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Alicia Smith TRMC, CMC  
City Secretary

If you plan to attend this public meeting and you have a disability that requires special arrangements at this meeting, please contact City Secretary's Office at (817) 441-7108 ext. 6 or email at [asmith@willowpark.org](mailto:asmith@willowpark.org), at least two (2) working days prior to the meeting so that appropriate arrangements can be made.



**City of Willow Park  
City Council  
Regular Meeting Minutes  
Municipal Complex  
516 Ranch House Rd, Willow Park, TX 76087  
Tuesday, June 9, 2020 at 7:00 p.m.**

**Call to Order**

Mayor Doyle Moss called the meeting to order at 7:00 pm

Present:

Councilmember Eric Contreras

Councilmember Amy Fennell

Councilmember Lea Young

Councilmember Nathan Crummel

Absent:

Councilmember Greg Runnebaum

Staff present:

City Administrator Bryan Grimes

City Secretary Alicia Smith

**Invocation & Pledge of Allegiance**

Clark Boshier of led the invocation and the pledge.

**Proclamations**

Mayor Moss read a proclamation commending the East Parker County Chamber of Commerce on receiving a five-star rating from the US. Chamber of Commerce.

**Public Comments (Limited to five minutes per person)**

Marilyn Thompson 1408 Robyn Dr, Aledo, Tx – Asked the City to look into damage done to her driveway by a contractor (not employed by the City).

Randy Keck – Community News Paper – Thanked the City for their support and cooperation with the Community news.

**Consideration of Minutes**

**A. Approve City Council Regular & Workshop Meeting Minutes – May 12, 2020 regular meeting minutes**

Motion made by Councilmember Young

To accept the meeting minutes from May 12, 2020.

Seconded by Councilmember Fennell

Aye votes: Councilmembers Contreras, Fennell, Young and Crummel.

Motion passes with a vote of 4-0

**Regular Agenda Items**

**1. Discussion/ Action: To consider and act on the appointment of a Mayor ProTem for the 2020-2021 year.**

Motion made by Councilmember Fennell

To nominate Councilmember Young as Mayor ProTem for the 2020-2021 year.

Aye votes: Councilmembers Contreras, Fennell, Young and Crummel.

Motion passes with a vote of 4-0

**2. Discussion/ Action: To consider and act on the appointment of an alternate Mayor ProTem for the 2020-2021 year.**

Motion made by Councilmember Fennell

To nominate Councilmember Runnebaum as alternate Mayor ProTem for the 2020-2021 year.

Aye votes: Councilmembers Contreras, Fennell, Young and Crummel.

Motion passes with a vote of 4-0

3. **Discussion/ Action: To consider and act on a Replat of Lots 1 R1, 1 R2, 1 R3; Block A, Crown Bluff Addition, City of Willow Park, Parker County, Texas.**

Motion made by Councilmember Young

To approve a Replat of Lots 1 R1, 1 R2, 1 R3; Block A, Crown Bluff Addition, City of Willow Park, Parker County, Texas.

Seconded by Councilmember Contreras

Aye votes: Councilmembers Contreras, Fennell, Young and Crummel.

Motion passes with a vote of 4-0

4. **Discussion/ Action: To consider and act on a Site Plan for Recreational Vehicle Sales and Service on Lot 1 R 1, Block A, Crown Bluff Addition, City of Willow Park, Parker County, Texas, located in the 4500 Block of IH-20 Service Road.**

Motion made by Councilmember Contreras

To approve a Site Plan for Recreational Vehicle Sales and Service on Lot 1 R 1, Block A, Crown Bluff Addition, City of Willow Park, Parker County, Texas, located in the 4500 Block of IH-20 Service Road.

Seconded by Councilmember Young

Aye votes: Councilmembers Contreras, Fennell, Young and Crummel.

Motion passes with a vote of 4-0

5. **Discussion/ Action: To consider and act on all matters incident and related to requesting financial assistance from the Texas Water Development Board and authorizing the filing of an application for financial assistance, including the adoption of a resolution pertaining thereto.**

Speaking against:

Marcy Galle – 500 Squaw Creek, Willow Park

Signed up to Speak Against ( but was unable to attend) :

Jeffrey Galle – 500 Squaw creek, Willow Park

Motion made by Councilmember Young

To approve Resolution 2020-06, a resolution to act on all matters incident and related to requesting financial assistance from the Texas Water Development Board and authorizing the filing of an application for financial assistance, including the adoption of a resolution pertaining thereto.

Seconded by Councilmember Contreras

Aye votes: Councilmembers Contreras, Young and Crummel.

Nay vote: Councilmember Fennell

Motion passes with a vote of 3-1.

**6. Discussion/ Action: To consider and act on a resolution authorizing the City Administrator to apply for grants through the Coronavirus Relief Fund.**

Motion made by Councilmember Contreras

To adopt Resolution 2020-05, a resolution to authorize the City Administrator to apply for grants through the Coronavirus Relief Fund.

Seconded by Councilmember Young

Aye votes: Councilmembers Contreras, Fennell, Young and Crummel.

Motion passes with a vote of 4-0

**7. Discussion only: Pacheco Koch presentation on the progress of Cross Timbers Park (Playground and Trail Addition)**

Dorothy Whitmire with Pacheco and Koch gave an update on the progress and possible options for the Cross Timbers Park.

**8. Discussion only: 2020-2021 budget calendar.**

Council and staff discussed potential dates for the 2020-2021 budget workshops.

**9. Discussion/ Action: To consider and act on items to be considered for future council meetings.**

Items council would like to see on the next agenda include:

Status report on the Fort Worth water project

Status update from the City Hall Advisory Committee  
Status update on the new website site  
Budget calendar and possible workshop dates

**10. Discussion/ Action: To consider and act on setting the date and time for the next council meeting.**

Motion made by Councilmember Young  
To hold the next City Council meeting on June 23, 2020  
Seconded by Councilmember Contreras  
Aye votes: Councilmembers Contreras, Fennell, Young and Crummel.  
Motion passes with a vote of 4-0

**Executive Session**

None

**Regular Agenda Items**

**11. Discussion/ Action: To consider and act on items as a result of the Executive Session.**

None

**Adjournment**

Motion made by Councilmember Contreras  
To adjourn  
Seconded by Councilmember Fennell  
Aye votes: Councilmembers Contreras, Fennell, Young and Crummel.  
Motion passes with a vote of 4-0

APPROVED:

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Doyle Moss, Mayor

ATTEST:

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Alicia Smith, City Secretary



## P&Z AGENDA ITEM BRIEFING SHEET

**Meeting Date:**

June 16, 2020

**Department:**

Development Services

**Presented By:**

Betty Chew

### AGENDA ITEM: 1

Consider and Act on a Site Plan for a restaurant on Lot 2, Block 2, The Village at Willow Park, City of Willow Park, Parker County, Texas, located on the southwest corner of Willow Bend Drive and Willow Crossing Drive.

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### BACKGROUND:

The property is zoned PD/VWP Planned Development/The Village at Willow Park. The property is located in Planning Area 4 as identified in the City's Comprehensive Plan. Planning Area 4 represents the area adjacent to Interstate 20. Due to the high traffic volumes, the area is a prime location for commercial use. The development will consist of a 3,624 square foot restaurant with outdoor seating and entertainment area. There are two additional buildings a 408 square foot restroom building and a 438 square foot building with storage, audio and video.

There will be 70 parking spaces provided with this development. The development regulations provide minimum parking for restaurants at 1:150. A shared parking agreement is provided.

The lot is accessed from Willow Crossing Drive and Willow Bend Drive both 60 foot collector streets. Mutual access, fire lane, and utility easements are dedicated and will be improved with this development.

The buildings will connect to City water and sanitary sewer mains. There are 8 inch water and sanitary sewer mains in both street right of ways. Fire hydrants will be installed in accordance with I.S.O. regulations. The stormwater drainage plan will be reviewed and approved by the City's Engineer. The landscape plan meets ordinance requirements and additional landscaping will be provided on the property.

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### STAFF/BOARD/COMMISSION RECOMMENDATION:

Staff recommends approval of the Site Plan as presented.

The Planning and Zoning Commission recommends approval of the Site Plan.

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### EXHIBITS:

Site Plan  
Building Elevation  
Landscape Plan

**ADDITIONAL INFO:**

**FINANCIAL INFO:**

6/17/2020



# City of Willow Park Development Services

## Universal Application

Please PRINT CLEARLY to avoid delays

Please complete each field - Incomplete applications be rejected

<b>Project Information</b>		Project Name: Willow Park Icehouse
( ) Residential		(X) Commercial
Valuation: \$ (round up to nearest whole dollar)	Project Address (or description): 210 WILLOW BEND	
Brief Description of the Project: 0.72 acre development with new restaurant, patio including parking for future development.		
Existing zoning: PD/VWP	# of Existing Lots (plats only): 0	
Proposed zoning: PD/VWP	# of Proposed Lots (plats only): 3	
<b>Applicant/Contact Information</b> (this will be the primary contact)		
Name: Johnathan Lilley	Mailing Address: 1601 E Lamar Blvd, Ste 205 Arl. TX 76011	
Company: Westra Consultants		
Primary Phone: 817-345-7684	E-mail: jlilley@westraconsultants.com	
<b>Property Owner Information</b> (if different than above)		
Name: Mike Sangalli	Mailing Address: 1620 Wabash Ave. Fort Worth, TX 76107	
Company: Morrison Company		
Primary Phone: 817-709-8671	E-mail: mike@sangalli-inc.com	
Other Phone:	Fax:	
<b>( ) Developer / (X) Engineer / ( ) Surveyor Information</b> (if applicable)		
Name: Johnathan Lilley	Mailing Address: 1601 E Lamar Blvd, Ste 205 Arl. TX 76011	
Company: Westra Consultants		
Primary Phone: 817-345-7684	E-mail: jlilley@westraconsultants.com	
Other Phone:	Fax:	
<i>For City Use Only</i>		
Project Number:	Permit Fee:	
Submittal Date:	Plan Review Fee:	
Accepted By:	Total Fee:	
Receipt #:	Method of Payment:	

Application not complete without attached form(s) and/or signature page



## City of Willow Park Development Services Department

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### SITE PLAN REQUIREMENTS

A **Site Plan** is an architectural plan of proposed improvements to a property; including building footprint, parking, ingress, egress, roadways, sidewalks, water lines, sewer lines, drainage facilities, auxiliary structures, lighting, and any public or private infrastructure. Site plans also include elevations of proposed buildings, topographical information, location in relation to flood plain, impact analysis

Site Plan applications must contain:

- Universal development application.
- A single site plan document including all of the information required on the site plan requirement checklist.
- A landscaping plan that includes the property boundaries, building and improvement footprints, and labels all green space, trees, shrubs, vegetation, and landscaping.
- A drainage plan that includes the property boundaries, building and improvement footprints, topography, and any flood plain designations.
- Elevations of all proposed buildings.
- A compact disc containing a .pdf copy of all plans.
- Three (3) paper hard copies of all plans.

If an exception or modification to the regulations is requested, the reason and/or request for each shall be provided on a separate sheet on letterhead and directly on the plans with sufficient details as to allow a determination by the appropriate approval body. Additional information may be required. Reference the specific requirement. Exceptions may require the approval of the City's Board of Adjustments.

Prior to public review before the Planning & Zoning Commission and City Council the applicant may be asked to submit up to fifteen (15) paper hard copies of all plans.

Applicant Signature: Jonathan Lilly Date: 05 / 26 / 2020



# City of Willow Park Development Services Department

Applicant: Please complete the following

For Office Use Only

ITEM	INITIAL	SITE PLAN REQUIREMENTS	N/A	COMPLETE	MISSING
1	JL	Site boundary is indicated by a heavy solid line intermittent with 2 dash lines, dimensioned with bearings and distances; Indicate and label lot lines, setback lines, and distance to the nearest cross street.		✓	
2	JL	Site location/vicinity map clearly showing the location of the subject property with cross streets is provided. Indicate scale or NTS and provide north arrow.		✓	
3	JL	A north arrow is provided with drawing oriented such as that north is located to the top or left side of drawing sheet.		✓	
4	JL	A written and bar scale is provided. 1"=200' unless previously approved by staff		✓	
5	JL	A title block is in the lower right corner that includes large, boldly printed "SITE PLAN", owner and engineer's names, addresses and phone numbers, subdivision name, lot number/s, block number or letter.		✓	
6	NA	Tree masses are clouded with accurate canopy widths shown to determine critical root zone where located within close proximity to existing or proposed pavement.	N/A		
7	NA	Flood plain boundary is shown and indicates F.I.R.M. Community panel number and date, and flow line of drainage ways and creeks, as applicable.	N/A		
8	JL	Existing topography lines are shown and proposed contours are shown by a medium weight solid line. Topography is shown at minimum five (5) foot contours referenced to sea level city datum. Spot elevations and additional contours may be required in certain areas depending on topography.		✓	
9	JL	Accurately located, labeled and dimensioned footprint of proposed structure(s).		✓	
10	NA	Accurately located, labeled and dimensioned footprint of existing structure(s) to remain is/are shown by a heavy dashed line.	N/A		
11	JL	Accurately located and labeled footprint of structure(s) proposed for demolition is/are shown by a light dashed line. Structures to be demolished are clearly labeled/ identified.		✓	
12	NA	Accurately located footprint of nonresidential structure(s) on abutting properties is/are shown by a light, solid line.	N/A		
13	JL	Adjacent property lines within 200 feet of the subject property lines are shown by a light dashed line.		✓	
14	JL	Adjacent zoning and land use (e.g. bank with drive-thru, office building, undeveloped etc.) within 200 feet of the property line is indicated.		✓	
15	JL	Adjacent property owner(s), or subdivision name, with lot, block and recording information, is shown.		✓	
16	JL	Finished floor elevation of existing and/or proposed structures is referenced to sea level datum.		✓	
17	JL	Full width of streets and alley rights-of-way with centerlines and backs of curbs or paving edges within 200 feet of the property line are dimensioned and street name or use is labeled.		✓	



# City of Willow Park Development Services Department

18	JL	<p>Driveways within 200 feet of the property line:</p> <p><u>JL</u> a. Are accurately located and dimensioned.</p> <p><u>JL</u> b. Distances to the nearest on-site driveway and/or off-site driveway is accurately located and dimensioned as measured from the centerlines.</p> <p><u>JL</u> c. Distance to the nearest street is shown as measured from the end of curb-return radius of the adjacent street to the driveway centerline.</p> <p><u>JL</u> d. Typical radii are shown.</p>		✓	
19	NA	Drive-thru lanes, menu board location, pick-up window/s, maneuvering area, stacking lanes and escape lanes are indicated and dimensioned.		N/A	
20	JL	Sidewalks and barrier-free ramps (BFR) within 200 feet of and on the subject property are shown, dimensioned and labeled.		✓	
21	JL	<p>Off-site streets and roads:</p> <p><u>JL</u> a. Existing and proposed roadways with medians and median openings adjacent to and within 200 feet of the project site are shown and dimensioned.</p> <p><u>JL</u> b. Medians, median openings with associated left- turn lanes, continuous left turn lanes, transition and stacking lengths are shown and dimensioned within 200 feet of the project site.</p> <p><u>JL</u> c. Existing, proposed, and required acceleration/deceleration lanes within 200 feet of the project site are shown dimensioned, stacking length indicated, and right-of-way dedication is indicated as applicable.</p> <p><u>JL</u> d.. Distance to the nearest signalized intersection is indicated</p>		✓	
22	JL	All parking spaces are shown, group numbered, and typical dimensions are provided. Indicate required two-foot overhang, as applicable.		✓	
23	JL	Handicapped parking spaces and barrier-free access points are shown, dimensioned, and labeled.		✓	
24	NA	Loading and maneuvering areas are indicated, labeled, and dimensioned. Loading area screening method is indicated and labeled.		N/A	
25	JL	Dumpster and/or compactor locations and screening methods are shown. Indicate screening materials and height for all sides. Screening material is to match structure façade with enclosure having solid metal gates. Specs and sketch available from staff.		✓	
26	JL	Paving materials, boundaries and type are indicated.		✓	
27	JL	Access easements are accurately located/ tied down, labeled and dimensioned.		✓	
28	NA	Off-site parking is shown and dimensioned from the off-site parking area to the structure or use as applicable. A parking easement or shared parking agreement is required and is provided in draft format.		✓	
29	JL	Fire lanes are shown and dimensioned at a minimum of 24 feet in width, with internal radii of not less than 20 feet. Label and use an approximate 20 percent shade for fire lanes to differentiate from other paving. Ensure that required labeling and dimensioning is readable through shading.		✓	
30	JL	Proposed dedications and reservations of land for public use including, but not limited to, rights-of way, easements, park land, open space, drainage ways, floodplains and facility sites are accurately located, dimensioned and labeled.		✓	
31	NA	Screening walls are shown with dimensions and materials. An inset is provided that shows the wall		N/A	



# City of Willow Park Development Services Department

		details and column placement as applicable. Plans for masonry walls are to be signed and sealed by a structural engineer and approved by the City Engineer. Channeled or slip-panel/pre-cast walls are prohibited.		N/A	
32	JL	The location of living screens are shown and labeled. Details of a living screen are provided on the Landscape Plan Indicating plant species/name, height at planting, and spacing.		N/A	
33	JL	A lighting plan that shows location by fixture type is included. A lighting data chart is used to reference fixture type (i.e. pole or wall pack) and height. No lighting source (i.e. bulb, reflector, etc.) is allowed to be visible from an adjacent property or public street.		✓	
34	JL	Existing and proposed water and sanitary sewer lines, storm sewer pipe, with sizes, valves, fire hydrants, manholes, and other utility structures on-site or immediately adjacent to the site are shown and labeled.		✓	
35	JL	Boundaries of detention areas are located. Indicate above and/or below ground detention.		✓	
36	JL	Details of construction materials and architecture are shown on required Building Elevation/Facade Plan. Color, type and texture to match Zoning requirements.		✓	
37	NA	Communication towers are shown and a fall distance/collapse zone is indicated.		N/A	
38	JL	Provide Site Data Table that references distinct numbers for each lot and all building (existing and proposed) that includes, if applicable		N/A	
39	JL	Explain in detail the proposed use(s) for each structure		✓	
40	JL	Total lot area less building footprint (by square feet):  Square footage of building:  Building height (stories and feet)  Number of Units per Acre (apartments only):		✓	
41	JL	Parking required by use with applicable parking ratios indicated for each use:  Parking Provided Indicated:  Handicap parking as required per COWP ordinance and TAS/ADA requirements:		✓	
42	JL	Provide service verification from all utility providers			
43	JL	List any variance requested for this property, dates, and approving authority		N/A	
44	JL	Provide storm water and drainage study and design			
45	JL	Proposed domestic water usage (gallons per day, month, and year)		N/A	
46	NA	Are any Irrigation wells proposed?		N/A	
47	JL	Applicant has received Landscaping Ordinance and requirements		✓	
48	JL	Applicant must submit eight (8) hard copies, 18" x 24", and one (1) digital (.pdf) copy of the Site Plan for Board review		✓	
49	JL	Applicant must submit eight (8) hard copies, 18" x 24", and one (1) digital (.pdf) copy of all Annexations, Final Plants and/or other Site Plans for Board review		✓	



# City of Willow Park Development Services Department

## Site Plan Engineering Review

### Applicant Questions:

Total gross lot area of the development: 31,395 sq. ft.

Area of lot covered with structures and impervious surfaces: 23,269 sq. ft.

Total number of structures: 3 Total number of habitable structures: 1

Square footage of each building: A: 3,654 sq. ft. B: 408 sq. ft. C: 438 sq. ft.

Proposed use for each structure:

Building 1: Restaurant

Building 2: Restrooms

Building 3: Storage, Audio/Video

Building stories: 1

Building height: 24 ft.

Total number of parking spaces: Required: 43  
Provided: 70

Number of handicap spaces: 2

Does the site include any storm water retention or detention?  Yes  No

Does the project include any engineered alternatives from code requirements? Yes  No

### Staff Review: (for official use only)

Does the proposed project pose any engineering concerns? Yes  No

OK FINAL DETENTION POND WITH CONSTRUCTION DOCUMENTS

Approved

Not Approved

Needs More Information or Corrections

Engineering Approval Signature: DEREK TURNER Date: 06/04/2020



# City of Willow Park Development Services Department

## Site Plan Building Official Review

### Applicant Questions:

Front building setback: 20 ft.

Rear building setback: 20 ft.

Side building setback: 10 ft.

Side building setback: 10 ft.

Does the site include any utility/electric/gas/water/sewer easements?  Yes  No

Does the site include any drainage easements?  Yes  No

Does the site include any roadway/through fare easements?  Yes  No

### Staff Review: *(for official use only)*

Does the site plan include all the required designations?  Yes  No

Are the setbacks for the building sufficient?  Yes  No

Are there any easement conflicts?  Yes  No

Does the proposed project pose any planning concerns?  Yes  No

Approved

Not Approved

Needs More Information or Corrections

Building Official Approval Signature: BETTY L. CHEW Date: 06/04/2020



# City of Willow Park Development Services Department

## Site Plan Fire Review

### Applicant Questions:

- Will the building have a fire alarm?  Yes  No
- Will the building have a fire sprinkler/suppression system?  Yes  No
- Is the building taller than two-stories? Yes  No
- If yes, how many stories? N/A
- Will the project require installation of a new fire hydrant? Yes  No
- If yes, how many fire hydrants? \_\_\_\_\_
- What is the size of the proposed fire connections? 6 Inch

### Staff Review: (for official use only)

- Does the proposed project include the sufficient fire connections?  Yes  No
- Is the proposed project an adequate distance to a fire hydrant?  Yes  No
- Does the project have the minimum 24' hard surface?  Yes  No
- Is the fire lane appropriate?  Yes  No
- Does the site have the proper turning radius?  Yes  No
- Does the proposed project pose any safety concerns? Yes  No

- Does the proposed project require any additional fire services? Yes  No

Approved      Not Approved      Needs More Information or Corrections

Fire Department Approval Signature: MIKE LE NOIR Date: 06/08/2020



# City of Willow Park Development Services Department

## Site Plan Flood Plain Review

### Applicant Questions:

- Is any part of the site plan in the 100-year flood plain? Yes  No
- If yes, what is the base flood elevation for the area? N/A
- Is any built improvement in the 100-year flood plain? Yes  No
- If yes, what is the base flood elevation for the area? N/A
- Is any habitable structure in the 100-year flood plain? Yes  No
- If yes, what is the base flood elevation for the area? N/A
- If yes, what is the finished floor elevation for the habitable structure? N/A
- If yes, please list any wet or dry flood proofing measures being used?

### Staff Review: (for official use only)

- Base flood elevations confirmed? N/A Yes  No
- Will the project require a "post-grade" elevation certificate? Yes  No
- Flood proofing measures approved? N/A Yes  No
- Does the proposed project pose any safety concerns? Yes  No

Approved      Not Approved      Needs More Information or Corrections

Flood Plain Manager Approval Signature: DEREK TURNER Date: 06/04/2020



# City of Willow Park Development Services Department

## Site Plan Landscaping Review

### Applicant Questions:

Total gross lot area of the development: 31,395 sq. ft.

Area of lot covered with structures and impervious surfaces: 23,269 sq. ft.

Percentage of lot covered with structures and impervious surfaces: 74 %

Area of green space/landscaped areas: 8,126 sq. ft.

Percentage of green space/landscaped areas: 26 %

Total number of parking spaces: 30

Does the site include any vegetative erosion or storm water control?  Yes  No

### Staff Review: *(for official use only)*

Does the proposed project pose any landscaping concerns? Yes  No

ADDITIONAL LANDSCAPING OFF SITE

Approved

Not Approved

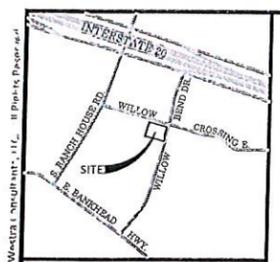
Needs More Information or Corrections

Landscaping Approval Signature:

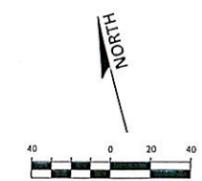
BETTY L. CHEW

Date: 06/04/2020

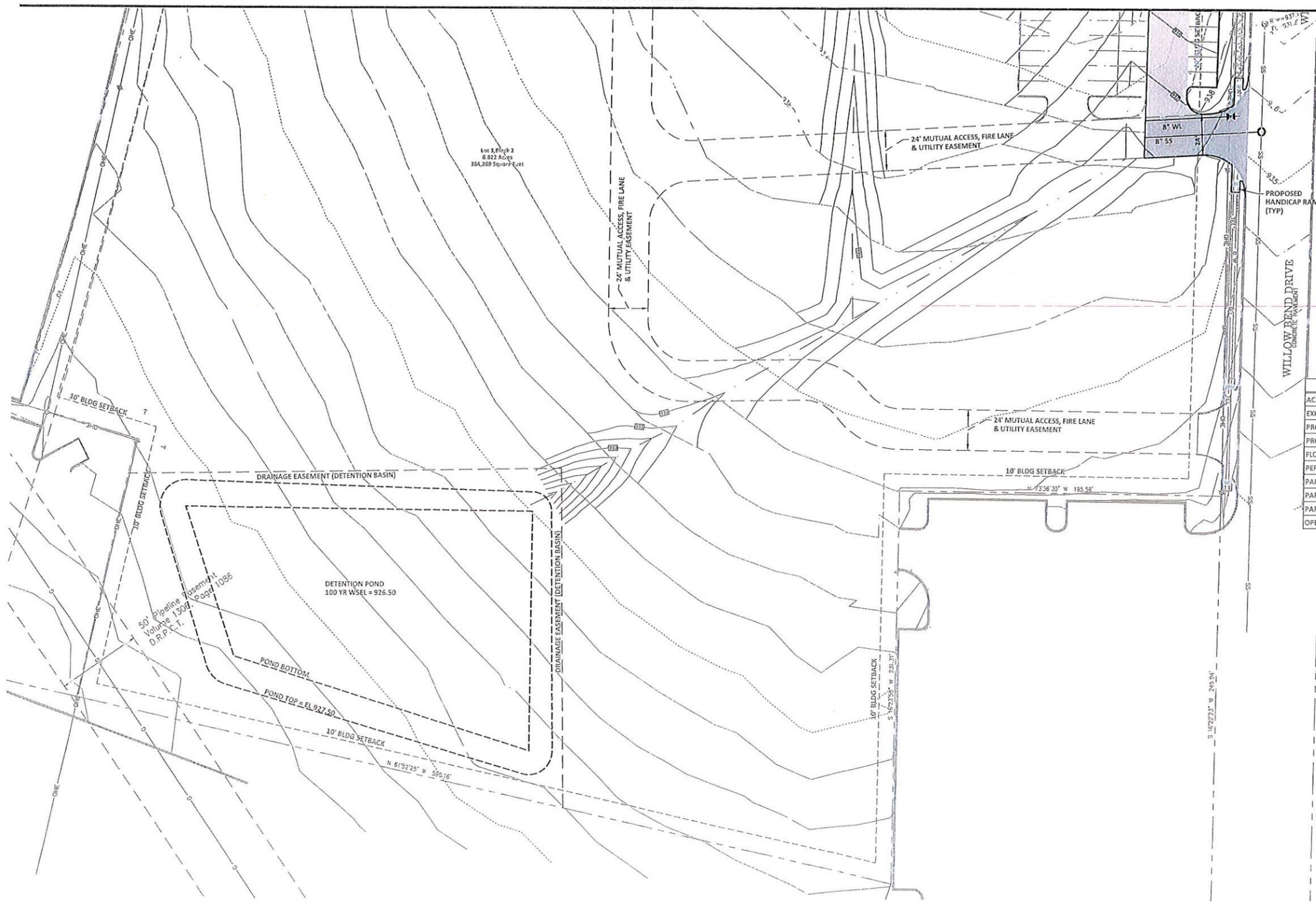




SITE LOCATION MAP  
NO SCALE



MATCH LINE SHEET 1



Lot 3 Block 3  
The Village at Willow Park  
Cabinet E-167  
P.R.P.C.T.  
(ZONED PD/VWP)

Lot 2 Block 3  
The Village at Willow Park  
Cabinet E-167  
P.R.P.C.T.  
(ZONED PD/VWP)

PAVING LEGEND

- 6" CONCRETE PAVEMENT - FIRE LANE
- 6" CONCRETE PAVEMENT
- 5" CONCRETE PAVEMENT
- 4" CONCRETE FLATWORK
- DINING FLOOR AREA

SITE PLAN DATA TABLE	
ACREAGE	0.721 ACRES
EXISTING ZONING	PD/VWP
PROPOSED USE	RESTAURANT
PROPOSED STRUCTURES	(3) 1 STORY COMMERCIAL - 4,500 S.F.
FLOOR AREA	6,406 S.F.
PERCENT IMPERVIOUS	74.00%
PARKING REQ=	(1 SP PER 150 S.F. FLOOR AREA)
PARKING PROVIDED	43 (INCLUDES 2 HANDICAP)
PARKING PROVIDED	* 70 (INCLUDES 2 HANDICAP)
OPEN SPACE	8,126 S.F.

\* OFFSITE SHARED PARKING IS PROVIDED MEETING THE INTENT OF PD FOR "THE VILLAGE AT WILLOW PARK" AS APPROVED ON AUGUST 16, 2018.

**OWNER:**  
MIKE SANGALLI  
THE MORRISON GROUP  
1620 WABASH AVE  
FORT WORTH, TX 76107  
817.709.8671

**SURVEYOR:**  
JEREMY DEAL, R.L.P.S.  
RESEARCH OF TEXAS, LLC  
P.O. BOX 1006  
GODLEY, TX 76044  
682.200.6050

**ENGINEER:**  
JOHNATHAN LILLEY, P.E.  
WESTRA CONSULTANTS, INC  
1601 E. LAMAR BLVD, STE 205  
ARLINGTON, TX 75011  
817.345.7684  
LOT 1, BLOCK 2  
0.961 ACRES  
41,852 SQUARE FEET  
PYLE  
(REMAINDER)  
CABINET C-134  
P.R.P.C.T.  
THE MORRISON GROUP, INC.  
CG#2011328039  
D.R.P.C.T.



1601 E. Lamar Blvd, Suite 205  
Arlington, Texas 76011  
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TBPE No. 17751  
www.westraconsultants.com

WILLOW PARK ICEHOUSE  
240 WILLOW BEND ROAD  
WILLOW PARK, TX 76008  
JOB NUMBER: 19-105.01

ISSUE BLOCK	
▲ CITY COMMENTS	06/04/2020

CHECKED BY:	JDL
DRAWN BY:	ARG
DOC. DATE:	05/25/2020

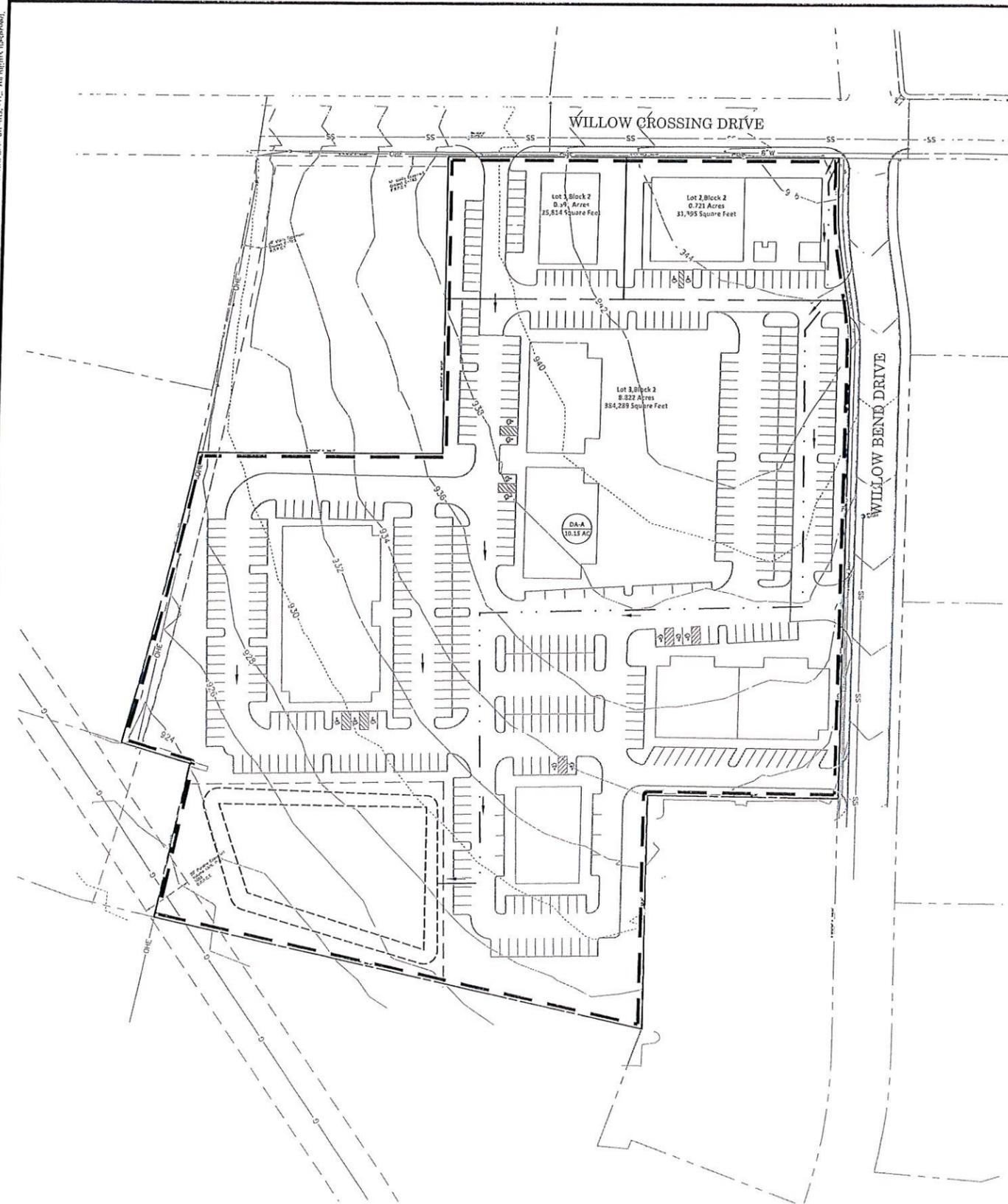
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JOHNATHAN D. LILLEY, P.E.  
SERIAL NO. 108719  
DATE: JUNE 2020

SITE PLAN  
SHEET 1 OF 2

Drawing: C:\WC\Projects\WILLOWS041\CAD\Sheet\Development\1 SITE PLAN.dwg, Jun 04, 2020 - 11:20am by Andrew Lovell; 2 SITE PLAN SHEET 2 OF 2; 2020-06-04 11:20:00 AM; 19-105.01.dwg - P:\19-105-01.dwg



Drawing: C:\WC\Projects\UBC19041\CAD\Sheets\Development\3\_DRAINAGE\_AREA\_MAP\_EXISTING CONDITIONS.dwg at May 26, 2020 - 2:41pm by Andrew  
 Layout: 4\_DRAINAGE\_AREA\_MAP\_PROPOSED CONDITIONS Xrefs: c-base.dwg - p-base.dwg - h-base.dwg - s-base.dwg - u-base.dwg - UBC19041\_Border.dwg  
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**PROJECT INFORMATION:**  
 PROJECT: Ice House  
 LOCATION: Willow Park  
 AREA: A - PROPOSED  
 ENGINEER: SND  
 JOB NO: UBC19041  
 DATE: 25-Mar-20

**SOLUTION:**

TOTAL LENGTH (FEET)	TIME OF CONC. (MINUTES)
1189	11.3

**SHEET FLOW COMPONENT**

LENGTH (FEET)	N	SLOPE (FT/FT)	P2 (INCHES)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
50	0.240	0.0212	3.36	0.11	7.81	7.81
0	0.000	0.0000	0.00	0.00	0.00	
0	0.000	0.0000	0.00	0.00	0.00	

**SHALLOW FLOW COMPONENT**

COMPONENT	LENGTH (FEET)	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
PAVED	97	0.0228	3.07	0.53	0.53
UNPAVED			0.00	0.00	

**PIPE FLOW COMPONENT**

COMPONENT	LENGTH (FEET)	DIAMETER (INCHES)	N	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
	0	0	0.000	0.0000	0.00	0.00	0.00
	0	0	0.000	0.0000	0.00	0.00	
	0	0	0.000	0.0000	0.00	0.00	

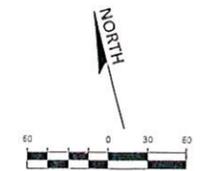
**CHANNEL FLOW COMPONENT**

COMPONENT	LENGTH (FEET)	BW (FEET)	DEPTH (FEET)	SS (H:V)	N	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
PARKING LOT	1042	0	0.5	5.0	0.013	0.0172	5.89	2.95	2.95
	0	0	0.0	0.0	0.000	0.0000	0.00	0.00	
	0	0	0.0	0.0	0.000	0.0000	0.00	0.00	

**DRAINAGE AREA DATA - PROPOSED CONDITION**

Area ID	Area (acres)	C	CA	T <sub>c</sub>	I <sub>2</sub>	I <sub>5</sub>	I <sub>10</sub>	I <sub>25</sub>	I <sub>100</sub>	Q <sub>2</sub>	Q <sub>5</sub>	Q <sub>10</sub>	Q <sub>25</sub>	Q <sub>100</sub>
				(min.)	(in/hr)	(in/hr)	(in/hr)	(in/hr)	(cfs)	(in/hr)	(in/hr)	(in/hr)	(cfs)	
A	10.15	0.80	8.12	11.30	4.39	5.42	7.18	8.85	35.62	44.04	58.27	71.86		

**NOTE:**  
 FINAL DETENTION POND FOR ICEHOUSE DEVELOPMENT (LOT 2) TO BE PROVIDED WITH ICEHOUSE CONSTRUCTION DOCUMENTS.



**LEGEND**

- PROPOSED DRAINAGE DIVIDE
- PROPOSED Tc FLOW PATH
- DRAINAGE AREA ID & AREA (POND)
- DRAINAGE FLOW DIRECTION

**urban bobcat ARCHITECTS**  
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 Arlington, Texas 76011  
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 TBPE No. 17261  
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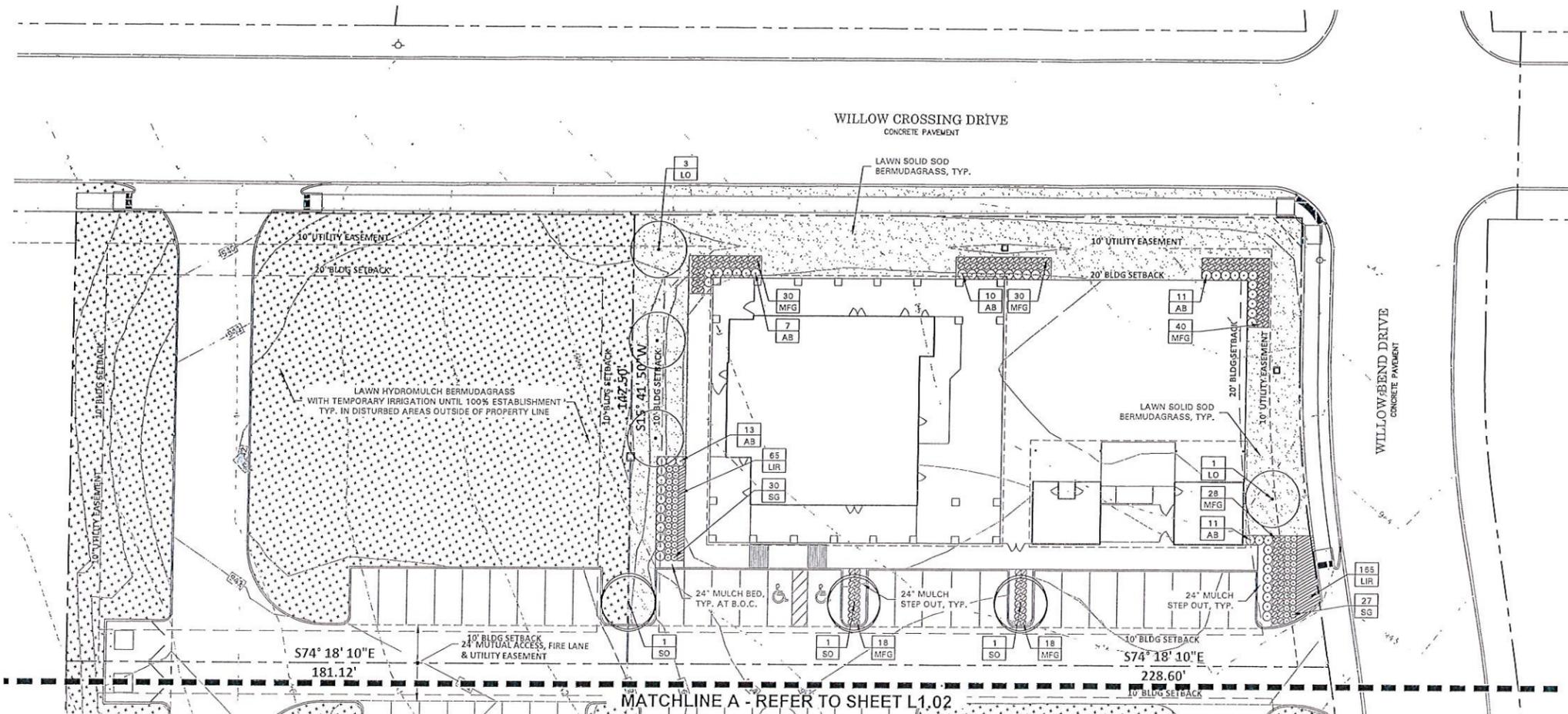
WILLOW PARK ICEHOUSE  
 20 WILLOW BEND ROAD  
 WILLOW PARK, TX 76008  
 JOB NUMBER: 19-105.01

**ISSUE BLOCK**


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 DRAWN BY: ARG  
 DOC. DATE: 05/26/2020

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 JONATHAN D. LILLEY P.E.  
 SERIAL NO. 108719  
 DATE: MAY 2020

DRAINAGE AREA MAP PROPOSED CONDITIONS



**PLANT LIST**

SYMBOL	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	REMARKS
<b>TREES</b>					
LO	<i>Quercus virginiana</i>	Live Oak	4	3" cal.	container grown, 12' ht., 4' spread, 4' branching ht., matching
SO	<i>Quercus shumardii</i>	Shumard Red Oak	3	3" cal.	container grown, 12' ht., 4' spread, 4' branching ht., matching
<b>SHRUBS/GROUND COVER</b>					
AB	<i>Abelia grandiflora</i>	Glossy Abelia	52	5 gal.	container full, 24" height, 3" o.c.
LIR	<i>Liriodendron muscari 'Big Blue'</i>	Liriodendron 'Big Blue'	230	4" pots	container full top of container, 12" o.c.
MFG	<i>Massella tenuissima</i>	Mexican Feathergrass	184	1 gal.	container full, 24" o.c.
SG	<i>Salvia greggii 'Red'</i> <i>Cynodon dactylon</i>	Salvia Greggii Common Bermudagrass	57	5 gal.	container full, 20" spread 24" o.c. solid sod, refer to Solid Sod Notes

NOTE: ALL TREES SHALL HAVE STRAIGHT TRUNKS AND BE MATCHING WITHIN VARIETIES.  
PLANT LIST IS AN AID TO BIDDERS ONLY. CONTRACTOR SHALL VERIFY ALL QUANTITIES ON PLAN.  
ALL HEIGHTS AND SPREADS ARE MINIMUMS. ALL PLANT MATERIAL SHALL MEET OR EXCEED REMARKS AS INDICATED.

**LANDSCAPE TABULATIONS**  
CITY OF WILLOW PARK, TEXAS

VEHICULAR USE AREAS	
1. Minimum 10% of parking area to be landscaped.	
Total Parking Area: 5,979 s.f.	
Required: 598 s.f.	Provided: 611 s.f.
PARKING LOT SCREEN	
Provided	
PERIMETER LANDSCAPE	
1. 15' landscape buffer between parking and abutting R.O.W.	
Provided	
NON-VEHICULAR OPEN SPACE	
1. 15% total site area to be feature landscaping.	
2. 50% of landscape located in front yard.	
3. One (1) tree per 2,000 s.f. of open space.	
Total Site Area: 31,385 s.f.	
Total Non-vehicular Open Space: 7,911 s.f. (25%)	
Required: 4,709 s.f. (15%)	Provided: 7,911 s.f. (25%)
2,355 s.f. (50%)	6,348 s.f. (92%)
(4) trees, 3" cal.	(4) trees, 3" cal.

**LANDSCAPE NOTES**

- CONTRACTOR SHALL VERIFY ALL EXISTING AND PROPOSED SITE ELEMENTS AND NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES. SURVEY DATA OF EXISTING CONDITIONS WAS SUPPLIED BY OTHERS.
- CONTRACTOR SHALL LOCATE ALL EXISTING UNDERGROUND UTILITIES AND NOTIFY LANDSCAPE ARCHITECT OF ANY CONFLICTS. CONTRACTOR SHALL EXERCISE CAUTION WHEN WORKING IN THE VICINITY OF UNDERGROUND UTILITIES.
- CONTRACTOR SHALL PROVIDE A MINIMUM 2% SLOPE AWAY FROM ALL STRUCTURES.
- CONTRACTOR SHALL FINE GRADE AREAS TO ACHIEVE FINAL CONTOURS AS INDICATED. LEAVE AREAS TO RECEIVE TOPSOIL 3" BELOW FINAL FINISHED GRADE IN PLANTING AREAS AND 1" BELOW FINAL FINISHED GRADE IN LAWN AREAS.
- ALL PLANTING BEDS AND LAWN AREAS SHALL BE SEPARATED BY STEEL EDGING. NO STEEL EDGING SHALL BE INSTALLED ADJACENT TO BUILDINGS, WALKS, OR CURBS. CUT STEEL EDGING AT 45 DEGREE ANGLE WHERE IT INTERSECTS WALKS AND CURBS.
- TOP OF MULCH SHALL BE 1/2" MINIMUM BELOW THE TOP OF WALKS AND CURBS.
- ALL LAWN AREAS SHALL BE SOLID SOD BERMUDAGRASS, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- ALL REQUIRED LANDSCAPE AREAS SHALL BE PROVIDED WITH AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM WITH RAIN AND FREEZE SENSORS AND EVAPOTRANSPIRATION (ET) WEATHER-BASED CONTROLLERS AND SAID IRRIGATION SYSTEM SHALL BE DESIGNED BY A QUALIFIED PROFESSIONAL AND INSTALLED BY A LICENSED IRRIGATOR.
- CONTRACTOR SHALL PROVIDE BID PROPOSAL LISTING UNIT PRICES FOR ALL MATERIAL PROVIDED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED LANDSCAPE AND IRRIGATION PERMITS.

**MAINTENANCE NOTES**

- THE OWNER, TENANT AND THEIR AGENT, IF ANY, SHALL BE JOINTLY AND SEVERALLY RESPONSIBLE FOR THE MAINTENANCE OF ALL LANDSCAPE.
- ALL LANDSCAPE SHALL BE MAINTAINED IN A NEAT AND ORDERLY MANNER AT ALL TIMES. THIS SHALL INCLUDE MOWING, EDGING, PRUNING, FERTILIZING, WATERING, WEEDING AND OTHER SUCH ACTIVITIES COMMON TO LANDSCAPE MAINTENANCE.
- ALL LANDSCAPE AREAS SHALL BE KEPT FREE OF TRASH, LITTER, WEEDS AND OTHER SUCH MATERIAL OR PLANTS NOT PART OF THIS PLAN.
- ALL PLANT MATERIAL SHALL BE MAINTAINED IN A HEALTHY AND GROWING CONDITION AS IS APPROPRIATE FOR THE SEASON OF THE YEAR.
- ALL PLANT MATERIAL WHICH DIES SHALL BE REPLACED WITH PLANT MATERIAL OF EQUAL OR BETTER VALUE.
- CONTRACTOR SHALL PROVIDE SEPARATE BID PROPOSAL FOR ONE YEAR'S MAINTENANCE TO BEGIN AFTER FINAL ACCEPTANCE.

**HYDROMULCH NOTES**

- CONTRACTOR SHALL SCARIFY, RIP AND LOOSEN ALL AREAS TO BE HYDROMULCHED TO A MINIMUM DEPTH OF 4" PRIOR TO TOPSOIL AND HYDROMULCH INSTALLATION.
- BERMUDAGRASS SEED SHALL BE EXTRA HULLED AND TREATED LAWN TYPE, SHALL BE DELIVERED TO THE SITE IN ITS ORIGINAL UNOPENED CONTAINER AND SHALL MEET STATE LAW REQUIREMENTS.
- FIBER SHALL BE ONE HUNDRED PERCENT (100%) WOOD CELLULOSE FIBER, DELIVERED TO THE SITE IN ITS ORIGINAL UNOPENED CONTAINER AS MANUFACTURED BY "CONWEB" OR EQUAL.
- FIBER TACK SHALL BE DELIVERED TO THE SITE IN ITS ORIGINAL UNOPENED CONTAINER AND SHALL BE "TERRO-TACK ONE", AS MANUFACTURED BY GROWERS, INC. OR EQUAL.
- HYDROMULCH WITH BERMUDAGRASS SEED AT A RATE OF TWO (2) POUNDS PER ONE THOUSAND (1000) SQUARE FEET.
- USE A 4' X 8' BATTER BOARD AGAINST ALL BED AREAS.
- IF INSTALLATION OCCURS BETWEEN SEPTEMBER 1 AND MAY 1, ALL HYDROMULCH AREAS TO BE WINTER RYEGRASS, AT A RATE OF FOUR (4) POUNDS PER ONE THOUSAND (1000) SQUARE FEET. CONTRACTOR SHALL BE REQUIRED TO RE-HYDROMULCH WITH BERMUDAGRASS THE FOLLOWING GROWING SEASON AS PART OF THIS CONTRACT.
- ALL LAWN AREAS TO BE HYDROMULCHED SHALL HAVE ONE HUNDRED PERCENT (100%) COVERAGE PRIOR TO FINAL ACCEPTANCE.

**GENERAL LAWN NOTES**

- CONTRACTOR SHALL COORDINATE OPERATIONS AND AVAILABILITY OF EXISTING TOPSOIL WITH ON-SITE CONSTRUCTION MANAGER.
- CONTRACTOR SHALL LEAVE LAWN AREAS 1" BELOW FINAL FINISHED GRADE PRIOR TO TOPSOIL INSTALLATION.
- CONTRACTOR SHALL FINE GRADE AREAS TO ACHIEVE FINAL CONTOURS AS INDICATED ON CIVIL PLANS. ADJUST CONTOURS TO ACHIEVE POSITIVE DRAINAGE AWAY FROM BUILDINGS. PROVIDE UNIFORM ROUNDING AT TOP AND BOTTOM OF SLOPES AND OTHER BREAKS IN GRADE. CORRECT IRREGULARITIES AND AREAS WHERE WATER MAY STAND.
- ALL LAWN AREAS SHALL BE FINE GRADED, IRRIGATION TRENCHES COMPLETELY SETTLED AND FINISH GRADE APPROVED BY THE OWNER'S CONSTRUCTION MANAGER OR LANDSCAPE ARCHITECT PRIOR TO LAWN INSTALLATION.
- CONTRACTOR SHALL REMOVE ALL ROCKS 3/4" DIAMETER AND LARGER, DIRT CLODS, STICKS, CONCRETE SPILLS, ETC. PRIOR TO PLACING TOPSOIL AND LAWN INSTALLATION.
- CONTRACTOR SHALL MAINTAIN ALL LAWN AREAS UNTIL FINAL ACCEPTANCE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: MOWING, WATERING, WEEDING, CULTIVATING, CLEANING AND REPLACING DEAD OR BARE AREAS TO KEEP PLANTS IN A VIGOROUS, HEALTHY CONDITION.
- CONTRACTOR SHALL GUARANTEE ESTABLISHMENT OF ACCEPTABLE TURF AREA AND SHALL PROVIDE REPLACEMENT FROM LOCAL SUPPLY IF NECESSARY.

**SOLID SOD NOTES**

- PLANT SOD BY HAND TO COVER INDICATED AREAS COMPLETELY. ENSURE EDGES OF SOD ARE TOUCHING. TOP DRESS JOINTS BY HAND WITH TOPSOIL TO FILL VOIDS.
- ROLL GRASS AREAS TO ACHIEVE A SMOOTH, EVEN SURFACE, FREE FROM UNNATURAL UNDULATIONS.
- WATER SOD THOROUGHLY AS SOD OPERATION PROGRESSES.
- IF INSTALLATION OCCURS BETWEEN SEPTEMBER 1 AND MARCH 1, OVER-SEED BERMUDAGRASS SOD WITH WINTER RYEGRASS, AT A RATE OF FOUR (4) POUNDS PER ONE THOUSAND (1000) SQUARE FEET.



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210 WILLOW BEND ROAD  
WILLOW PARK, TX 76008  
JOB NUMBER: 19-105.01

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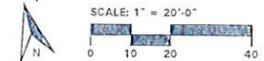
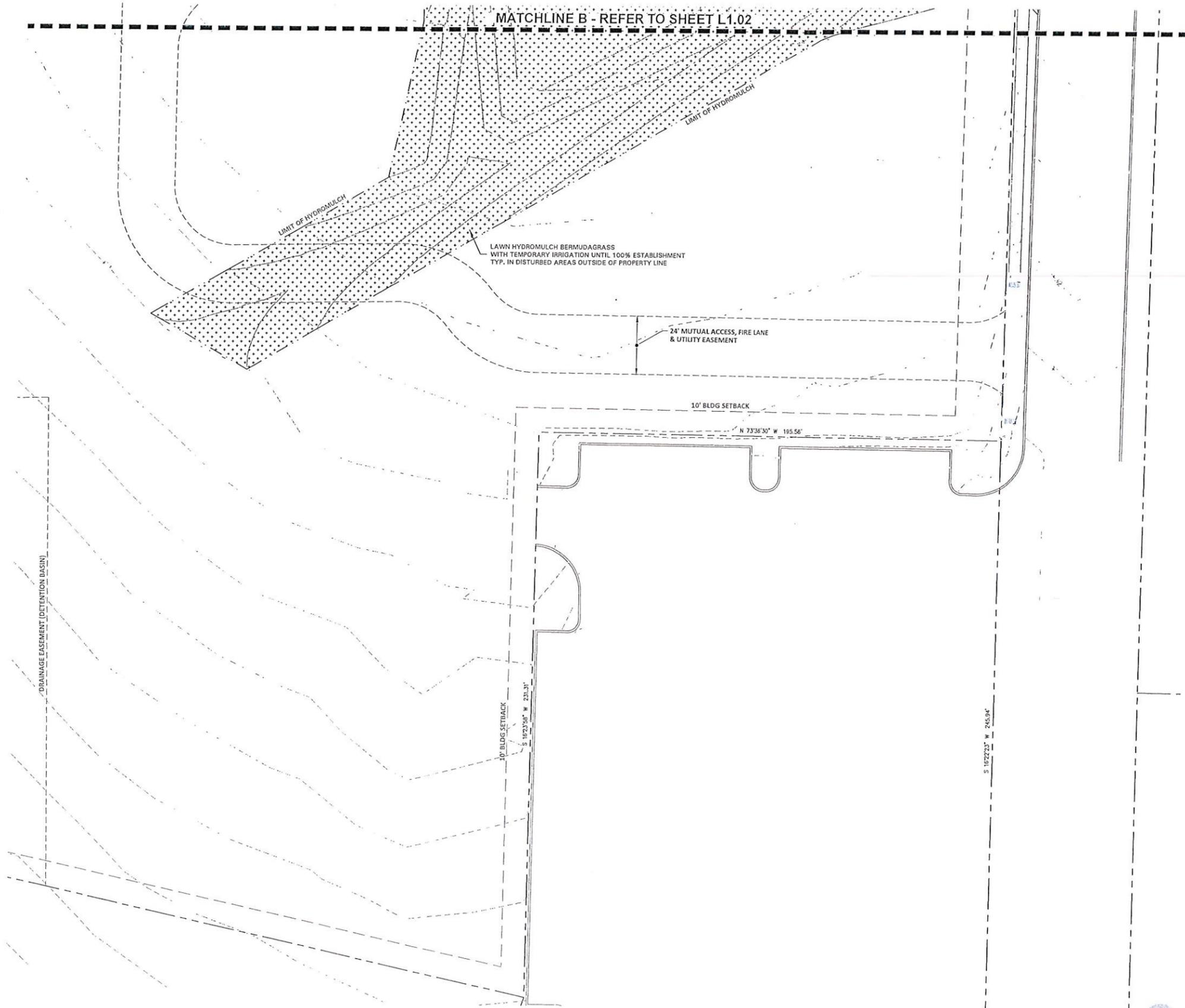
LANDSCAPE PLAN

L1.01



4245 North Central Expy  
Suite 501  
Dallas, Texas 75205  
214.865.7192





**BELLE FIRMA**

4245 North Central Expy  
Suite 501  
Dallas, Texas 75205  
214.865.7192



**WESTRA**  
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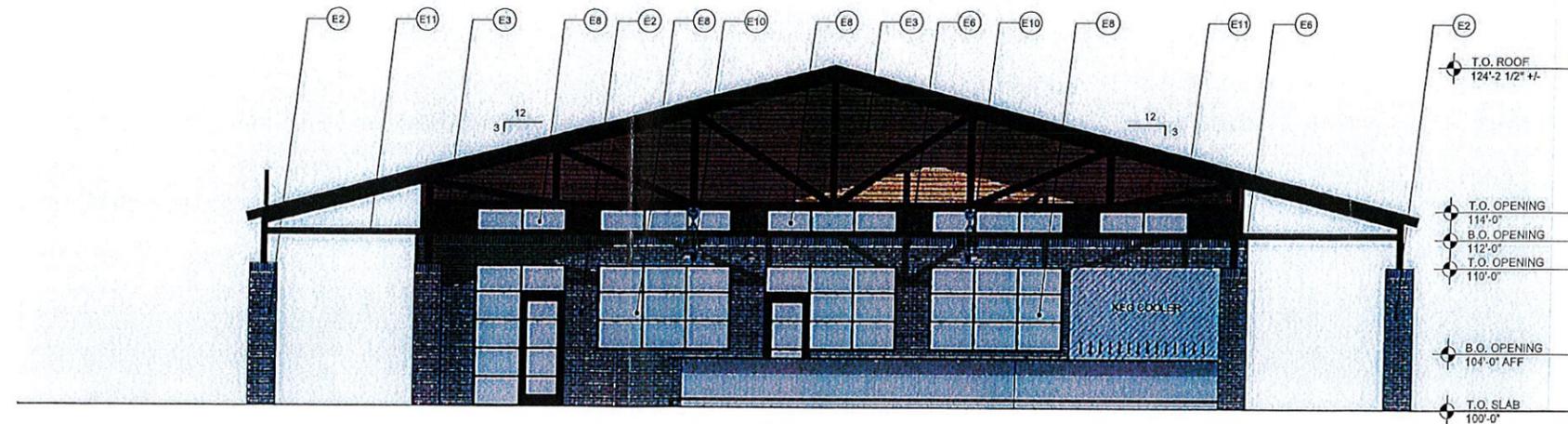
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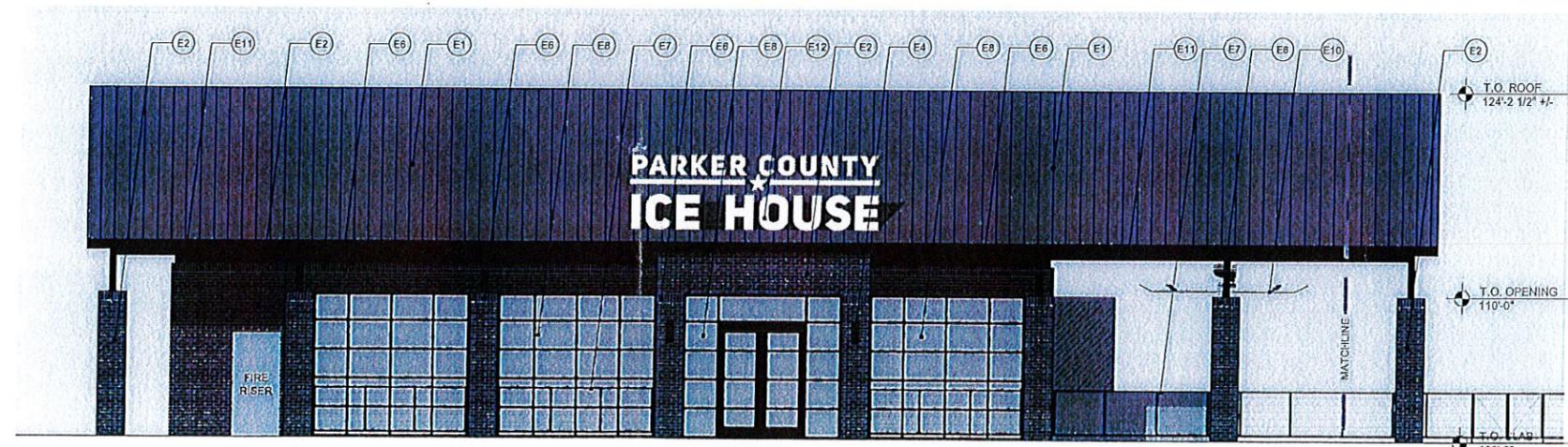


LANDSCAPE PLAN

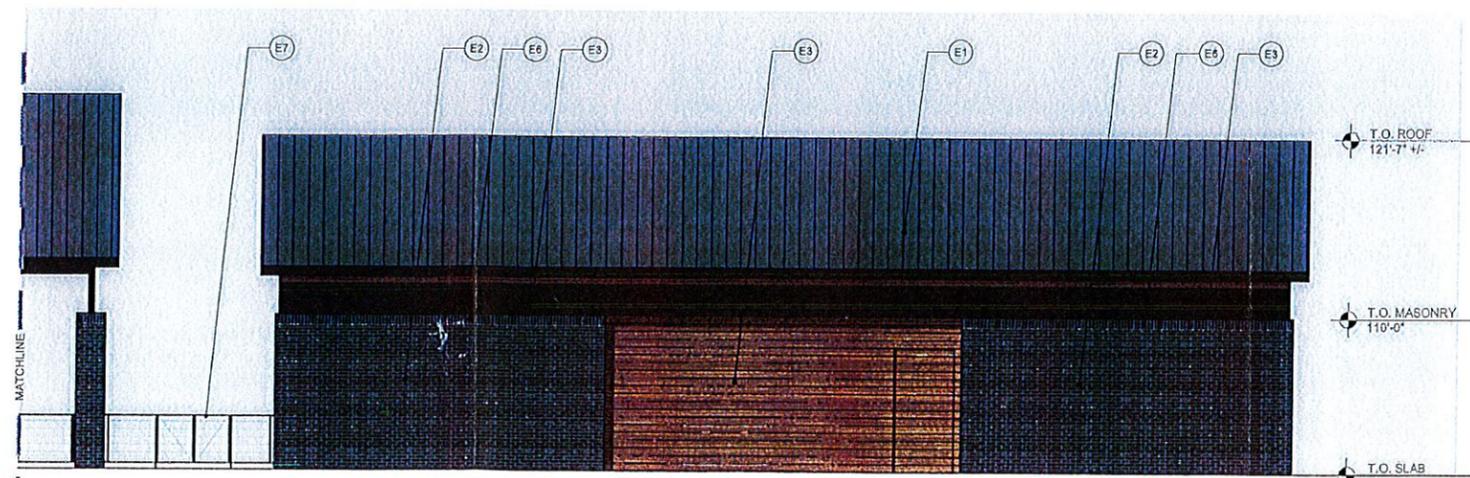
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1 EXTERIOR ELEVATION - EAST  
 A3.0 scale: 3/16" = 1'-0"



2 EXTERIOR ELEVATION - SOUTH  
 A3.0 scale: 3/16" = 1'-0"



3 EXTERIOR ELEVATION - SOUTH  
 A3.0 scale: 3/16" = 1'-0"

MATERIAL LEGEND			
MARK	LOCATION	MATERIAL	FINISH / NOTE
EXTERIOR			
E1	ROOFING	METAL	TBD
E2	PRIMARY FACADE	BRICK VENEER	TBD
E3	ACCENT FACADE	CEMENTITIOUS BOARD (HARDIE)	TBD
E4	WALL SCONCE	PER MANUF.	TBD
E5	WALL PACK LIGHTS	PER MANUF.	TBD
E6	SOLDIER COURSE	BRICK VENEER	TBD
E7	GUARDRAIL	METAL	TBD
E8	STOREFRONT	ALUMINUM	TBD
E9	GUTTER AND DOWNSPOUTS	METAL	TBD
E10	OUTDOOR FAN	PER MANUF.	TBD
E11	EXPOSED STRUCTURE	STEEL	PAINTED, COLOR TBD
E12	SIGNAGE	PER MANUF.	TBD

- FACADE NOTES**
- 1) ALL SIGNAGE SUBJECT TO CITY SIGNAGE DEPARTMENT APPROVAL.
  - 2) ALL MECHANICAL UNITS SHALL BE SCREENED IN ACCORDANCE WITH THE ZONING ORDINANCE.
  - 3) UTILITY BOXES AND CONDUIT SHALL BE PAINTED TO MATCH BUILDING COLOR.
  - 4) ROOF ACCESS SHALL BE PROVIDED INTERNALLY, UNLESS OTHERWISE PERMITTED BY BUILDING OFFICIAL.
  - 5) PROVIDE MASONRY MOCKUP FOR FINAL APPROVAL OF OWNER AND ARCHITECT

WILLOW PARK ICEHOUSE  
 200 WILLOW BEND ROAD  
 WILLOW PARK, TX 76008

JOB NUMBER: 19-105.01

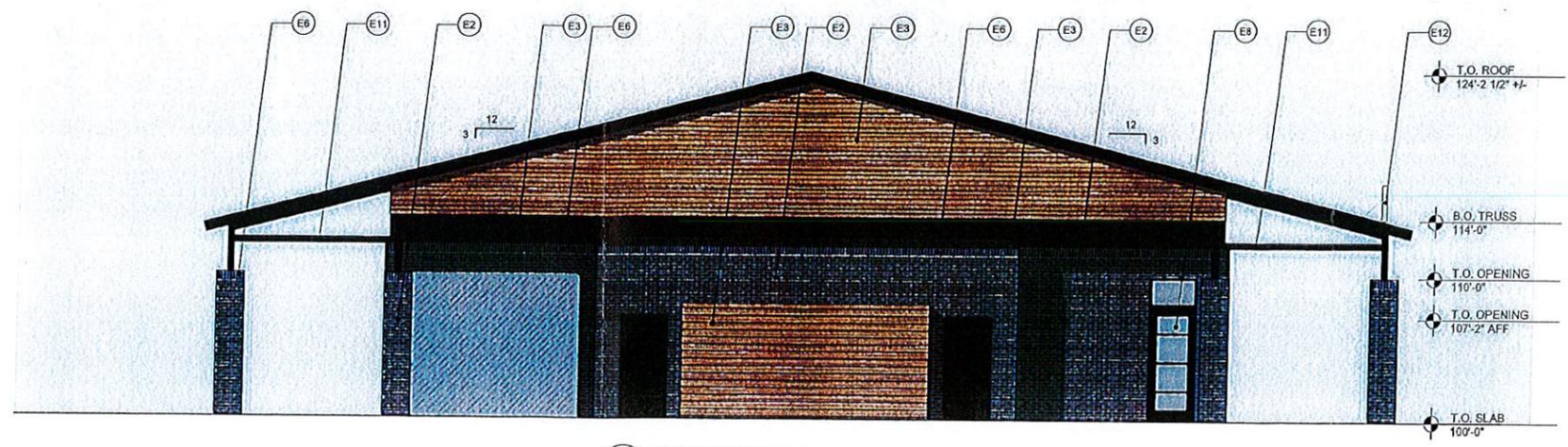
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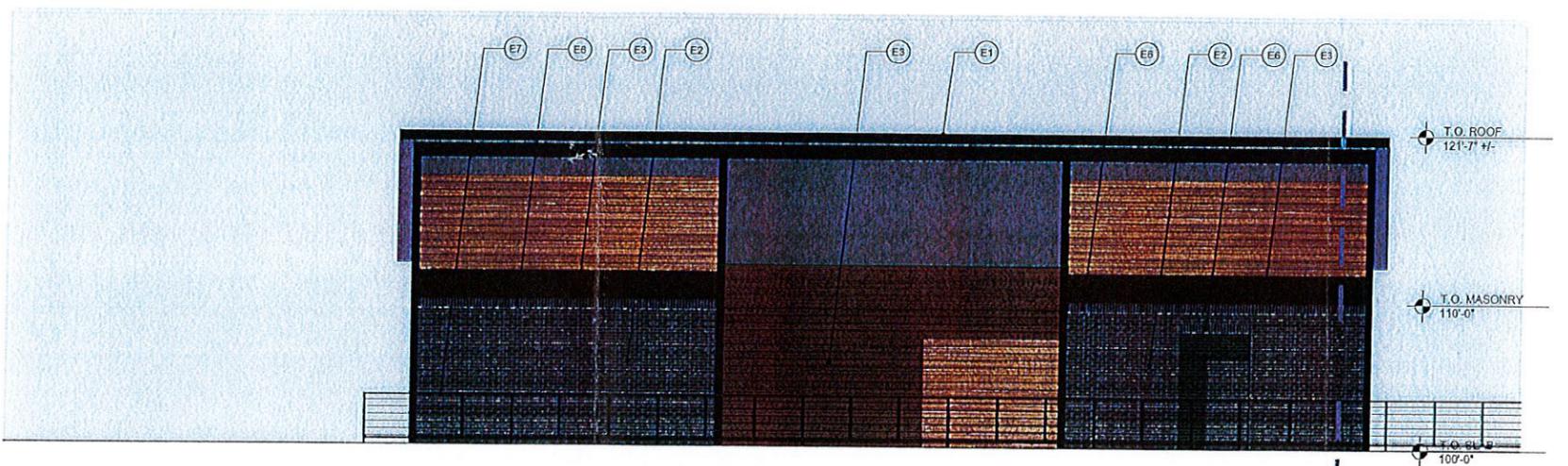


EXTERIOR ELEVATIONS

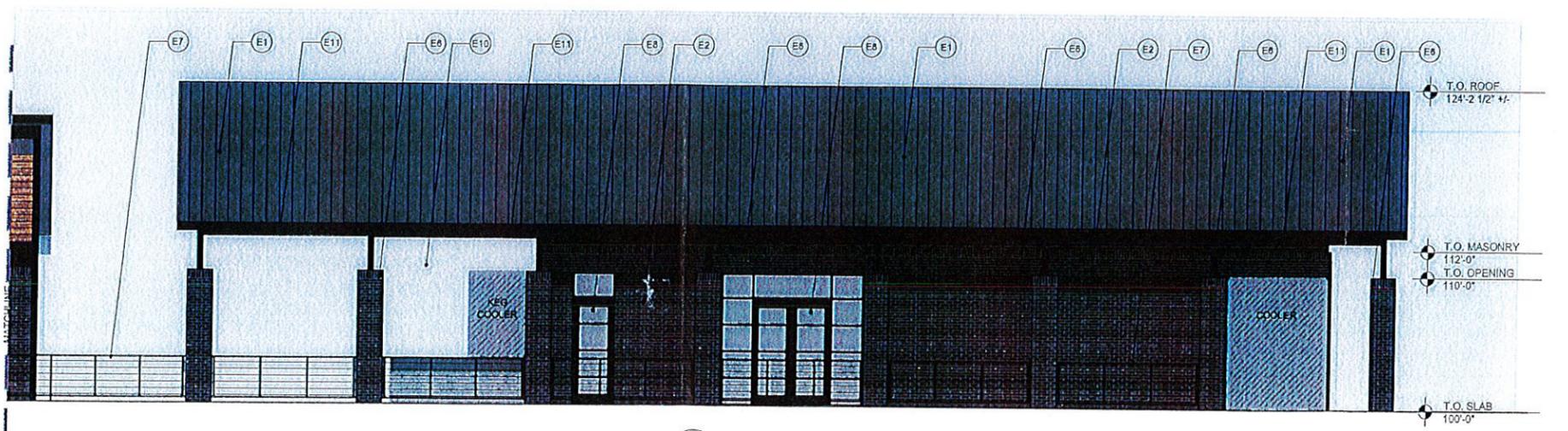
A3.0



1 EXTERIOR ELEVATION - WEST  
 A3.1 scale: 3/16" = 1'-0"



2 EXTERIOR ELEVATION - NORTH  
 A3.1 scale: 3/16" = 1'-0"



3 EXTERIOR ELEVATION - NORTH  
 A3.1 scale: 3/16" = 1'-0"

MATERIAL LEGEND			
MARK	LOCATION	MATERIAL	FINISH / NOTE
EXTERIOR			
E1	ROOFING	METAL	TBD
E2	PRIMARY FACADE	BRICK VENEER	TBD
E3	ACCENT FACADE	CEMENTITIOUS BOARD (HARDIE)	TBD
E4	WALL SCONCE	PER MANUF.	TBD
E5	WALL PACK LIGHTS	PER MANUF.	TBD
E6	SOLDIER COURSE	BRICK VENEER	TBD
E7	GUARDRAIL	METAL	TBD
E8	STOREFRONT	ALUMINUM	TBD
E9	GUTTER AND DOWNSPOUTS	METAL	TBD
E10	OUTDOOR FAN	PER MANUF.	TBD
E11	EXPOSED STRUCTURE	STEEL	PAINTED, COLOR TBD
E12	SIGNAGE	PER MANUF.	TBD

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WILLOW PARK ICEHOUSE  
 260 WILLOW BEND ROAD  
 WILLOW PARK, TX 76008  
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EXTERIOR ELEVATIONS

A3.1



## P&Z AGENDA ITEM BRIEFING SHEET

<b>Meeting Date:</b> June 16, 2020	<b>Department:</b> Development Services	<b>Presented By:</b> Betty Chew
---------------------------------------	--	------------------------------------

### AGENDA ITEM: 2

Consider and Act on a Site Plan for a Eye Clinic-Medical Office on 1.601 acres Lot 1, Block 9 and 73, El Chico Addition, City of Willow Park, Parker County, Texas, located at 101 Chuckwagon Trail.

### BACKGROUND:

The property is zoned Commercial/IH-20 Overlay District. This property is located in Planning Area 4 as identified in the City's Comprehensive Plan.. This property is located on the north side of Interstate 20. The development will consist of a 2,312 square foot addition in the West Texas Retina Center, outpatient Eye Clinic-Medical Office building. This addition to the existing 10,000 square foot building will be on the west side of the property.

The property is accessed from Chuckwagon Trail off the IH-20 Service Road. Two existing entrance/exists access the property via 24 foot fire lanes which provide emergency access to the property. Required parking spaces will be provided. The building is connected to City water and sanitary sewer. The existing building and addition have an automatic fire suppression system. Fire hydrants are installed in accordance with ISO regulations. The stormwater drainage plan has been reviewed and approved by the City Engineer. The landscape plan meets ordinance requirements.

### STAFF/BOARD/COMMISSION RECOMMENDATION:

Staff has reviewed the Site Plan and recommends approval as presented.

The Planning and Zoning Commission recommends approval of the Site Plan.

### EXHIBITS:

Site Plan  
Building Elevation  
Landscape Plan

<b>ADDITIONAL INFO:</b>	<b>FINANCIAL INFO:</b>	
	<b>Cost</b>	N/A
	<b>Source of Funding</b>	N/A



## City of Willow Park Development Services Universal Application

Please PRINT CLEARLY to avoid delays

Please complete each field – Incomplete applications be rejected

<b>Project Information</b>		Project Name: Addition to North Texas Retina Consultants	
( ) Residential		(x) Commercial	
Valuation: \$ 475,000.00 (round up to nearest whole dollar)		Project Address (or description): 101 Chuckwagon Trail, Willow Park, TX 76087	
Brief Description of the Project: 2,312 sf addition to existing facility, outpatient Eye Clinic Medical Office Building			
Existing zoning:		# of Existing Lots ( <i>plats only</i> ): 1	
Proposed zoning: C-IH20 Overlay		# of Proposed Lots ( <i>plats only</i> ): 1	
<b>Applicant/Contact Information</b> ( <i>this will be the primary contact</i> )			
Name: Larry J. Meers, P.E.		Mailing Address: 3444 North 1st, Suite 200, Abilene, TX 79603	
Company: Meers Engineering, Inc.			
Primary Phone: 325-691-1200		E-mail: larry.meers@meersengineering.com	
<b>Property Owner Information</b> ( <i>if different than above</i> )			
Name: Sunil S. Patel		Mailing Address: 5441 Health Center Drive, Abilene, TX 79606	
Company: West Texas Retina Consultants			
Primary Phone: 325-690-4407		E-mail: michael.guerrero@wtrc.clinic	
Other Phone:		Fax:	
<b>( ) Developer / (x) Engineer / ( ) Surveyor Information</b> ( <i>if applicable</i> )			
Name: Larry J. Meers		Mailing Address: 3444 North 1st, Suite 200, Abilene, TX 79603	
Company: Meers Engineering, Inc.			
Primary Phone: 325-691-1200		E-mail: larry.meers@meersengineering.com	
Other Phone:		Fax: 325-691-1206	
<b>For City Use Only</b>			
Project Number:		Permit Fee:	
Submittal Date:		Plan Review Fee:	
Accepted By:		Total Fee:	
Receipt #:		Method of Payment:	

Application not complete without attached form(s) and/or signature page



## City of Willow Park Development Services Department

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### SITE PLAN REQUIREMENTS

A Site Plan is an architectural plan of proposed improvements to a property; including building footprint, parking, ingress, egress, roadways, sidewalks, water lines, sewer lines, drainage facilities, auxiliary structures, lighting, and any public or private infrastructure. Site plans also include elevations of proposed buildings, topographical information, location in relation to flood plain, impact analysis

Site Plan applications must contain:

- Universal development application.
- A single site plan document including all of the information required on the site plan requirement checklist.
- A landscaping plan that includes the property boundaries, building and improvement footprints, and labels all green space, trees, shrubs, vegetation, and landscaping.
- A drainage plan that includes the property boundaries, building and improvement footprints, topography, and any flood plain designations.
- Elevations of all proposed buildings.
- A compact disc containing a .pdf copy of all plans.
- Three (3) paper hard copies of all plans.

If an exception or modification to the regulations is requested, the reason and/or request for each shall be provided on a separate sheet on letterhead and directly on the plans with sufficient details as to allow a determination by the appropriate approval body. Additional information may be required. Reference the specific requirement. Exceptions may require the approval of the City's Board of Adjustments.

Prior to public review before the Planning & Zoning Commission and City Council the applicant may be asked to submit up to fifteen (15) paper hard copies of all plans.

Applicant Signature: \_\_\_\_\_

*L. Meers*

Date: \_\_\_\_\_

*5/26/2020*

REPRODUCED FROM THE CITY OF WILLOW PARK, TEXAS, OFFICIAL RECORDS. ALL RIGHTS RESERVED. FOR MORE INFORMATION, VISIT WWW.WILLOWPARK.ORG

516 Ranch House Rd. Willow Park, TX 76087 (817) 441-7108 phone – (817) 441-6900 fax  
www.willowpark.org



# City of Willow Park Development Services Department

Applicant: Please complete the following

For Office Use Only

ITEM	INITIAL	SITE PLAN REQUIREMENTS	N/A	COMPLETE	MISSING
1	✓	Site boundary is indicated by a heavy solid line intermittent with 2 dash lines, dimensioned with bearings and distances; indicate and label lot lines, setback lines, and distance to the nearest cross street.	X		
2	✓	Site location/vicinity map clearly showing the location of the subject property with cross streets is provided. Indicate scale or NTS and provide north arrow.		X	
3	✓	A north arrow is provided with drawing oriented such as that north is located to the top or left side of drawing sheet.		X	
4	✓	A written and bar scale is provided. 1"=200' unless previously approved by staff <i>1" = 20'</i>		X	
5	✓	A title block is in the lower right corner that includes large, boldly printed "SITE PLAN", owner and engineer's names, addresses and phone numbers, subdivision name, lot number/s, block number or letter.		X	
6	✓	Tree masses are clouded with accurate canopy widths shown to determine critical root zone where located within close proximity to existing or proposed pavement.		X	
7	✓	Flood plain boundary is shown and indicates F.I.R.M. Community panel number and date, and flow line of drainage ways and creeks, as applicable.		X	
8	✓	Existing topography lines are shown and proposed contours are shown by a medium weight solid line. Topography is shown at minimum five (5) foot contours referenced to sea level city datum. Spot elevations and additional contours may be required in certain areas depending on topography.		X	
9	✓	Accurately located, labeled and dimensioned footprint of proposed structure(s).		X	
10	✓	Accurately located, labeled and dimensioned footprint of existing structure(s) to remain is/are shown by a heavy dashed line.		X	
11	N/A	Accurately located and labeled footprint of structure(s) proposed for demolition is/are shown by a light dashed line. Structures to be demolished are clearly labeled/ identified.	X		
12	✓	Accurately located footprint of nonresidential structure(s) on abutting properties is/are shown by a light, solid line.		X	
13	✓	Adjacent property lines within 200 feet of the subject property lines are shown by a light dashed line.		X	
14	✓	Adjacent zoning and land use (e.g. bank with drive-thru, office building, undeveloped etc.) within 200 feet of the property line is indicated.		X	
15	✓	Adjacent property owner(s), or subdivision name, with lot, block and recording information, is shown.		X	
16	✓	Finished floor elevation of existing and/or proposed structures is referenced to sea level datum.		X	
17	✓	Full width of streets and alley rights-of-way with centerlines and backs of curbs or paving edges within 200 feet of the property line are dimensioned and street name or use is labeled.		X	





# City of Willow Park Development Services Department

	✓	details and column placement as applicable. Plans for masonry walls are to be signed and sealed by a structural engineer and approved by the City Engineer. Channeled or slip-panel/pre-cast walls are prohibited. <b>EXISTING RETAINING WALL</b>		✓	
32	N/A	The location of living screens are shown and labeled. Details of a living screen are provided on the Landscape Plan Indicating plant species/name, height at planting, and spacing.	X		
33	✓	A lighting plan that shows location by fixture type is included. A lighting data chart is used to reference fixture type (i.e. pole or wall pack) and height. No lighting source (i.e. bulb, reflector, etc.) is allowed to be visible from an adjacent property or public street.		X	
34	✓	Existing and proposed water and sanitary sewer lines, storm sewer pipe, with sizes, valves, fire hydrants, manholes, and other utility structures on-site or immediately adjacent to the site are shown and labeled.		X	
35	✓	Boundaries of detention areas are located. Indicate above and/or below ground detention.		X	
36	✓	Details of construction materials and architecture are shown on required Building Elevation/Facade Plan. Color, type and texture to match Zoning requirements.		X	
37	N/A	Communication towers are shown and a fall distance/collapse zone is indicated.	X		
38	N/A	Provide Site Data Table that references distinct numbers for each lot and all building (existing and proposed) that includes, if applicable	X		
39		Explain in detail the proposed use(s) for each structure Addition to an existing facility to be used for an outpatient Eye Clinic Medical Office Building			
40	✓	Total lot area less building footprint (by square feet): Square footage of building: 2313 Building height (stories and feet) 1 story Number of Units per Acre (apartments only):		X	
41	✓	Parking required by use with applicable parking ratios indicated for each use: Parking Provided Indicated: Handicap parking as required per COWP ordinance and TAS/ADA requirements:		X	
42	✓	Provide service verification from all utility providers		X	
43	N/A	List any variance requested for this property, dates, and approving authority	X		
44	✓	Provide storm water and drainage study and design		X	
45	N/A	Proposed domestic water usage (gallons per day, month, and year)	X		
46	N/A	Are any irrigation wells proposed?	X		
47	✓	Applicant has received Landscaping Ordinance and requirements		X	
48	✓	Applicant must submit eight (8) hard copies, 18" x 24", and one (1) digital (.pdf) copy of the Site Plan for Board review		X	
49	✓	Applicant must submit eight (8) hard copies, 18" x 24", and one (1) digital (.pdf) copy of all Annexations, Final Plans and/or other Site Plans for Board review		X	



# City of Willow Park Development Services Department

## Site Plan Engineering Review

### Applicant Questions:

Total gross lot area of the development: 2,313 sq. ft.

Area of lot covered with structures and impervious surfaces: 2,313 sq. ft.

Total number of structures: 1 Total number of habitable structures: 1

Square footage of each building: 2,313 sq. ft. \_\_\_\_\_ sq. ft. \_\_\_\_\_ sq. ft.

### Proposed use for each structure:

Addition to an existing facility to be used for an outpatient Eye Clinic Medical Office Building

Building stories: 1

Building height: \_\_\_\_\_ ft.

Total number of parking spaces: 61

Number of handicap spaces: 3

Does the site include any storm water retention or detention?

Yes

No

Does the project include any engineered alternatives from code requirements? Yes

No

### Staff Review: *(for official use only)*

Does the proposed project pose any engineering concerns?

Yes

No

Approved

Not Approved

Needs More Information or Corrections

Engineering Approval Signature: DEREK TURNER

Date: 06/10/2020



# City of Willow Park Development Services Department

## Site Plan Building Official Review

### Applicant Questions:

Front building setback: 25 ft.                      Rear building setback: 25' ft.  
 Side building setback: 10/25 ft.                      Side building setback: 10/25 ft.

Does the site include any utility/electric/gas/water/sewer easements?       Yes      No  
 Does the site include any drainage easements?                                      Yes                      No  
 Does the site include any roadway/through fare easements?                      Yes                       No

### Staff Review: (for official use only)

Does the site plan include all the required designatons?                                       Yes                      No  
 Are the setbacks for the building sufficient?     Yes                      No  
 Are there any easement conflicts?    Yes                       No  
 Does the proposed project pose any planning concerns?                                      Yes                       No

Approved

Not Approved

Needs More Information or Corrections

Building Official Approval Signature: BETTY L. CHEW      Date: 06/09/2020



# City of Willow Park Development Services Department

## Site Plan Fire Review

### Applicant Questions:

Will the building have a fire alarm?  Yes  No

Will the building have a fire sprinkler/suppression system?  Yes  No

Is the building taller than two-stories? Yes  No

If yes, how many stories? N/A

Will the project require installation of a new fire hydrant? Yes  No

If yes, how many fire hydrants? N/A

What is the size of the proposed fire connections? N/A

### Staff Review: (for official use only)

Does the proposed project include the sufficient fire connections?  Yes  No

Is the proposed project an adequate distance to a fire hydrant?  Yes  No

Does the project have the minimum 24' hard surface?  Yes  No

Is the fire lane appropriate?  Yes  No

Does the site have the proper turning radius?  Yes  No

Does the proposed project pose any safety concerns? Yes  No

Does the proposed project require any additional fire services? Yes  No

Approved      Not Approved      Needs More Information or Corrections

Fire Department Approval Signature: MIKE LENOIR Date: 06/02/2020



# City of Willow Park Development Services Department

## Site Plan Flood Plain Review

### Applicant Questions:

- Is any part of the site plan in the 100-year flood plain? Yes  No
- If yes, what is the base flood elevation for the area? N/A
- Is any built improvement in the 100-year flood plain? Yes  No
- If yes, what is the base flood elevation for the area? N/A
- Is any habitable structure in the 100-year flood plain? Yes  No
- If yes, what is the base flood elevation for the area? N/A
- If yes, what is the finished floor elevation for the habitable structure? N/A
- If yes, please list any wet or dry flood proofing measures being used?

### Staff Review: (for official use only)

- Base flood elevations confirmed? Yes  No
- Will the project require a "post-grade" elevation certificate? Yes  No
- Flood proofing measures approved? Yes  No
- Does the proposed project pose any safety concerns? Yes  No

Approved

Not Approved

Needs More Information or Corrections

Flood Plain Manager Approval Signature:

DEREK TURNER

Date:

10/10/2020



# City of Willow Park Development Services Department

## Site Plan Landscaping Review

### Applicant Questions:

Total gross lot area of the development: 70,846 sq. ft.

Area of lot covered with structures and impervious surfaces: 10,627 sq. ft.

Percentage of lot covered with structures and impervious surfaces: 15 %

Area of green space/landscaped areas: 1,875 sq. ft.

Percentage of green space/landscaped areas: 10 %

Total number of parking spaces: 61

Does the site include any vegetative erosion or storm water control?

Yes

No

### Staff Review: *(for official use only)*

Does the proposed project pose any landscaping concerns?

Yes

No

Approved

Not Approved

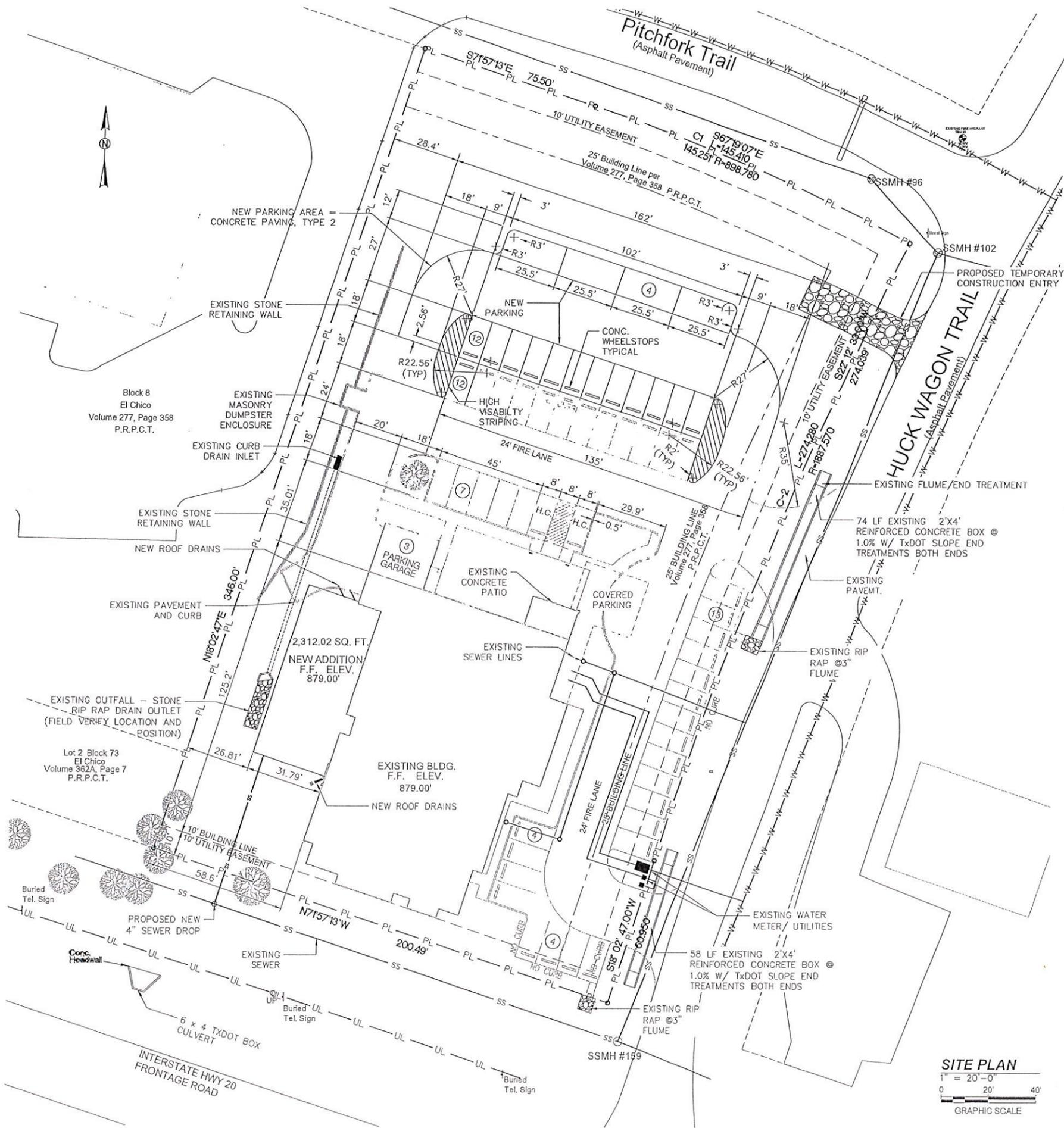
Needs More Information or Corrections

Landscaping Approval Signature:

BETTY L. CHEW

Date: 06/09/2020

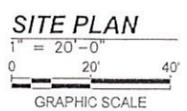




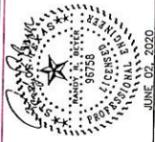
VICINITY MAP

**GENERAL NOTES:**

1. ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS OF THE CITY OF WILLOW PARK.
2. ALL DIMENSIONS ARE TO FACE OF CURB, EDGE OF PAVEMENT OR EDGE OF FOUNDATION, UNLESS SPECIFICALLY SHOWN OTHERWISE. LAYOUT OF BUILDING/FOUNDATION SHALL BE FROM ARCHITECTURAL PLANS (NOT SITE PLANS).
3. FIRE LANES SHALL BE STRIPED ON BOTH SIDES WITH 6" RED PAINT STRIPES AND THE WORDS "FIRE LANE - NO PARKING - TOW AWAY ZONE" EVERY 20'. VERIFY EXACT REQUIREMENTS WITH FIRE MARSHAL. WHERE CURB DOES NOT EXIST, PAINT STRIPE SHALL BE ON PAVEMENT.
4. ALL HANDICAP PARKING SPACES SHALL HAVE THE UNIVERSAL HANDICAPPED SYMBOL PAINTED AT EACH SPACE AND A STANDARD H.C. SIGN ERECTED AT HEAD OF EACH SPACE. ADDITIONAL SIGN DESIGNATING "VAN ACCESSIBLE" SHALL BE PLACED AT DESIGNATED VAN SPACE(S). BOTTOM OF SIGN SHALL BE AT 60" ABOVE FINISHED GRADE. PROVIDE CONCRETE WHEEL STOP AT EACH H.C. SPACE. ALL RAMPS AND FLARED SIDES SHALL HAVE DETECTABLE WARNINGS, CONSISTING OF A SCORED PATTERN OR OTHER APPROVED DETECTABLE WARNINGS INTEGRAL WITH THE CONCRETE. CONFIRM TYPE OF APPROVED DETECTABLE WARNINGS WITH LOCAL AUTHORITIES. PATTERNED SURFACES SHALL ALSO HAVE AN INTEGRAL COLOR - "BRICK RED", BY USE OF A COLOR ADMIXTURE, APPLIED DURING THE FINISHING PROCESS.
5. SLOPES ON HANDICAPPED PARKING SPACES SHALL NOT EXCEED 2.0% (1:50) IN ANY DIRECTION. AFTER COMPLETION OF SUBGRADE, AND BEFORE CONSTRUCTION OF PAVEMENT, CONTRACTOR SHALL CONFIRM GRADES/SLOPES ON HANDICAPPED PARKING SPACES. IF SLOPE IN ANY DIRECTION EXCEEDS 2.0%, THEN THE ELEVATIONS/SLOPES ON SUBGRADE SHALL BE CORRECTED BEFORE FINAL PAVEMENT IS CONSTRUCTED.
6. GUARD RAILS SHALL BE PROVIDED AT ALL RETAINING WALLS WHERE VERTICAL GRADE DIFFERENCE IS 30" OR GREATER. SEE SITE PLAN FOR LOCATIONS OF PROTECTION.
7. PROTECT ALL EXISTING TREES IDENTIFIED TO REMAIN.
8. CONTRACTOR IS RESPONSIBLE FOR DESIGN AND CONSTRUCTION OF ERW PROPRIETARY RETAINING WALL. WALL SHALL BE DESIGNED BY PROFESSIONAL ENGINEER AND CONSTRUCTED BY ERW SHALL BE. CONTRACTOR IS RESPONSIBLE FOR PAYMENT OF ALL COSTS FOR RETAINING WALL.



The seal contained on this drawing was authorized by the State of Texas on 08/02/2020. Attention of a professional engineer is required for any modification to the reproduction of this drawing. The Texas Engineering Act.



ARCHIS design, LLC  
4300 SASSWOOD NEW MARCO 9709  
ALBUQUERQUE, NEW MEXICO 87109  
(985) 998-7717  
www.archisdesign.net

ARCHIS  
ARCHITECTS

ADDITION TO NORTH TEXAS  
RETINA CONSULTANTS  
101 Huck Wagon Trail  
Weatherford, Texas 76087, Texas

**MEERS**  
ENGINEERING INC.

6803 SANGER AVE  
SUITE 202  
WILLOW PARK, TEXAS  
75087  
TEL: 972-440-7275  
FAX: 972-440-7275  
Texas Registered Engineering Firm F-5300

PROJ. NO.: 19-011  
DATE: 01-24-20  
REVISION:  
DESIGNER: RRB  
DRAFTER: LTM

SITE PLAN

SHEET 1 OF 5

DRAWING NO.

**C1.1**

PLANT LIST (Contractor is responsible for verifying quantities)

QUANTITY	PLANT NAME/BOTANICAL NAME	SIZE	NOTES
5	Cedar Elm/Ulmus crassifolia	2"cal.	7'ht. min.
5	Live Oak/Quercus virginiana	2"cal.	7'ht. min.
3	Crope Myrtle/Lagerstroemia indica 'Tuscarora'	15gal.	7'ht. min.
1	Spartan Juniper/Juniperus chinensis	15gal.	
48	Muhly Grass/Mulenbergia copilaris	3-5gal.	
19	Pampas Grass/Cortaderia selloana	5gal.	
4	Yucca/Yucca filamentosa	5gal.	
25	Knock Out Rose/Rosa sp.'Radrozz'	5gal.	
9	Texas Sage/Leucophyllum frutescens compacta	5gal.	
36	Red Yucca/Hesperaloe parviflora	5gal.	
15	Dwarf Nandina/Nandina nana	3gal.	
11	Andora Juniper/Juniperus horizontalis plumosa	3-5gal.	
11	Salvia Gregg/Salvia greggi	3gal.	pink
800	Asian Jasmine/Trachelospermum asiaticum	1gal.	6" runners, full
7	Rosemary/Rosemarinus officinalis	3gal.	
SOD	Hybrid Bermuda Sod		solidly
HYDROMULCH	Common Bermuda Grass		maintain until full coverage established

GROSS PARKING LOT 18,753SF  
 REQUIRED PARKING LOT LANDSCAPE AREA: 10%(18,753) = 1,875SF  
 PROVIDED: 1,940SF  
 REQUIRED: PARKING LOT TREES 1,875 = 5 TREES  
 PROVIDED: 5 TREES

GROSS SITE AREA 70,846SF  
 REQUIRED LANDSCAPE AREA: 15%(70,846) = 10,627SF  
 PROVIDED: 42,616SF  
 ((NON-VEHICULAR OPEN SPACE=42,616  
 (70,846-BLDG. FOOTPRINT AND PARKING AREA)  
 42,616/70,946=60%)  
 42,616/4000=11 TREES  
 PROVIDED 4 EXISTING + 10 NEW TREES=14 TREES

NOTES  
 IRRIGATION: All landscaped areas shall be irrigated with an irrigation system capable of providing the proper amount of water for the particular type of plant material used. Irrigation will be provided by an underground sprinkler system or a subterranean drip system and shall be equipped with rain and freeze sensors and be in accordance with all City Codes.

MAINTENANCE: Required plant materials must be maintained in a healthy growing condition at all times. The property owner is responsible for regular weeding, mowing of grass, irrigating, fertilizing, pruning and other maintenance of all plantings as needed. Any city-required planting that dies must be replaced with another living plant that complies with this plan within 90 days after notification by the City. DRAINAGE: There shall be positive drainage away from all buildings. Final Landscape grade including topdressing mulch, shall be at least 3" below finished floor of adjacent buildings.

BED PREPARATION: Planting areas to receive groundcover, shrubs or ornamental trees shall be prepared as follows:  
 1. Excavate and remove from site existing soil and rock as necessary to allow for the incorporation of 3" of organic compost, 2" hardwood mulch and still allow for the finished grade of beds to be a min. of 3" below the finished floor of adjacent building structure.  
 2. Till compost into existing soil to 6" depth.  
 3. Rake beds smoothly and evenly. Ensure positive drainage away from building and/or toward any surface drains, if present.

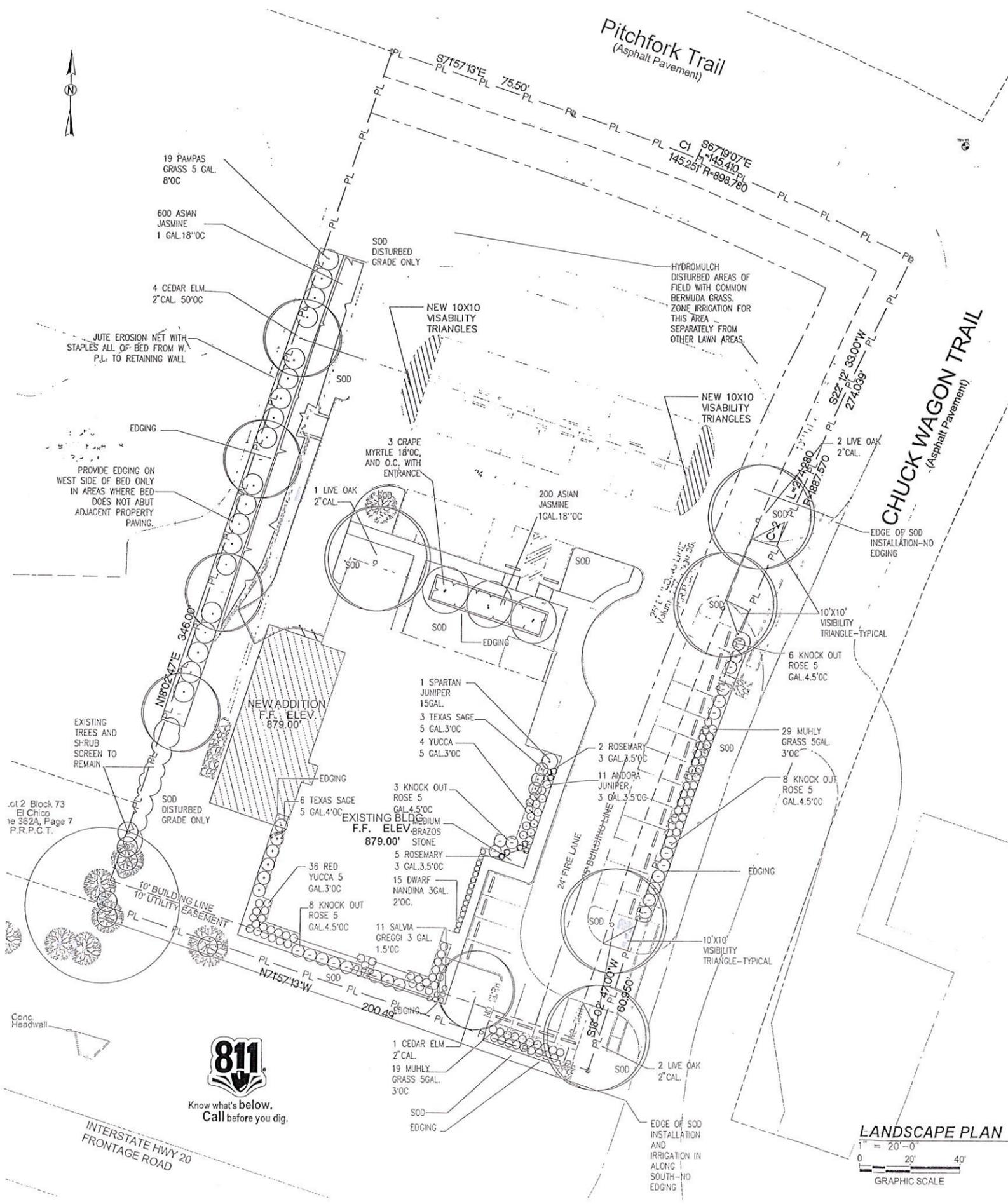
MULCH: All beds shall receive 2" of shredded hardwood mulch and have positive drainage away from all building structures, walks, porches and patios. Provide 6" soil water retention rings 5' diameter around pampas grass. Backfill with 2" of shredded hardwood mulch.

EDGING: All edging shall be 10 gauge 'Ryerson' or approved equal.

BRAZOS STONE: Size to be 3" to 5" diameter stones. Areas to receive stone shall be excavated to a depth of 5" below adjacent sidewalks. Install filter fabric between raked soil and rocks, overlapping seams by 2". Place stone evenly over fabric ensuring the fabric is not visible and so that finished tops of rocks are not more than 1" above grade of adjacent walks.

EROSION NET: Jute fiber, woven netting complete with metal staples installed 4'oc. Cover with 2" of hardwood mulch after installation and planting to conceal net.  
 TREE PLANTING: Tree pits of 15 gallon and larger trees shall be dug 12" greater than the root ball and slightly shallower than root ball height. Backfill in 6" lifts, tamping between lifts, with 1/2 compost 1/2 native soil mix. Provide water retention rings constructed with 6" ht. of soil around all live oaks and cedar elms. Mulch interior of rings with 3" hardwood mulch.

TREE PROTECTION: All trees being preserved will be protected during all development activities by a 6'ht. temporary chain link fence installed to encompass the critical root zone of each protected tree. Development activities will include, grading, installation of utilities and/or construction of structures and site amenities. Protective measures are required at the critical root zone (the critical root zone, CRZ, radius is defined as one foot per inch diameter measured at breast height (to or and 1/2 feet) of the tree. The following activities within the critical root zone are prohibited: No waste, grading, or construction material shall be placed within the limits of the CRZ. No paint, oil, solvents, asphalt, concrete, mortar or similar materials shall be deposited or allowed to flow overland within the CRZ. No signs, wires or other attachments other than those of a protective nature shall be attached to any preserved tree. No parking is allowed under the CRZ. No heavy equipment, including but not limited to trucks, tractors, trailers, bulldozers, bobcat tractors, trenchers, compressors and hoists shall be allowed inside the CRZ or on any construction site without the specific approval of the Owner's representative.



LANDSCAPE PLAN  
 1" = 20'-0"  
 0 20' 40'  
 GRAPHIC SCALE

ARCHIS ARCHITECTS  
 ADDITION TO NORTH TEXAS  
 RETINA CONSULTANTS  
 101 Chuckwagon Trail  
 Weatherford, Texas 76087, Texas

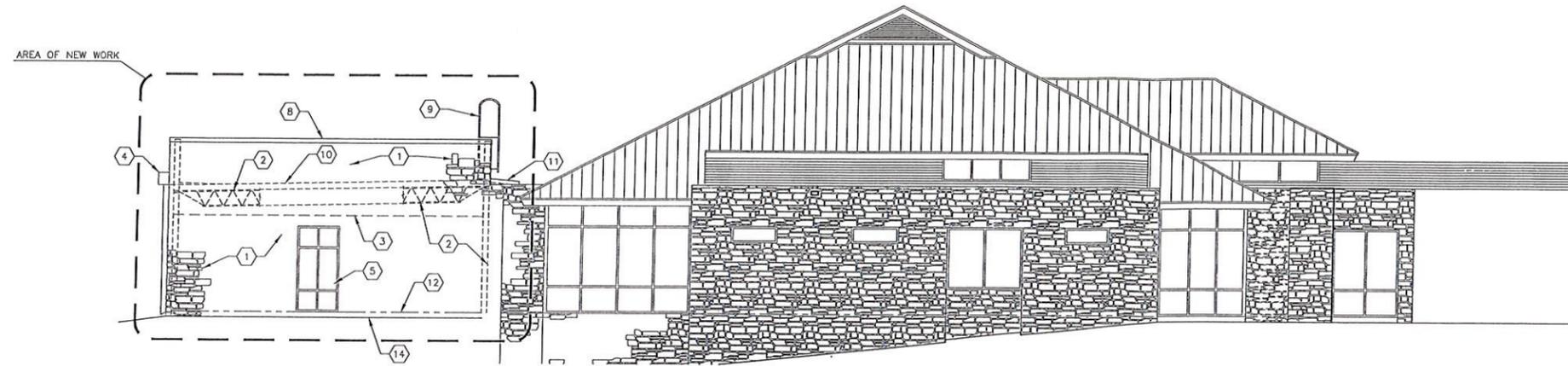
MEERS ENGINEERING INC.  
 3444 N. 1st STREET SUITE 200 ABILENE, TEXAS 79601  
 6801 SANGER AVE SUITE 202 WACO, TEXAS 76798  
 Texas Registered Engineering Firm F-3300

PROJ. NO.: 19-011  
 DATE: 06-08-20  
 REVISION:  
 DESIGNER: RRB  
 DRAFTER: LTM

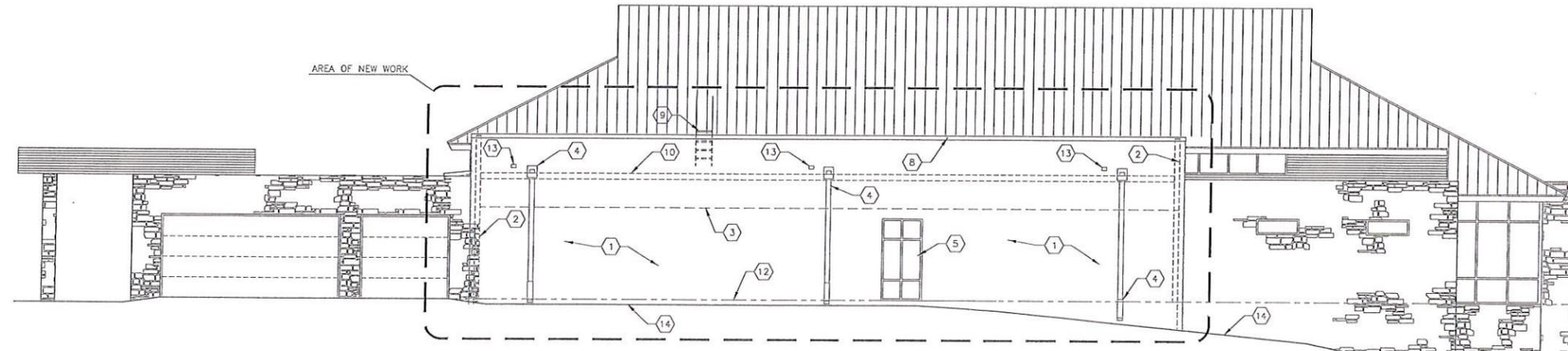
LANDSCAPE PLAN  
 SHEET 1 OF 1  
 DRAWING NO.  
 LS 1.1



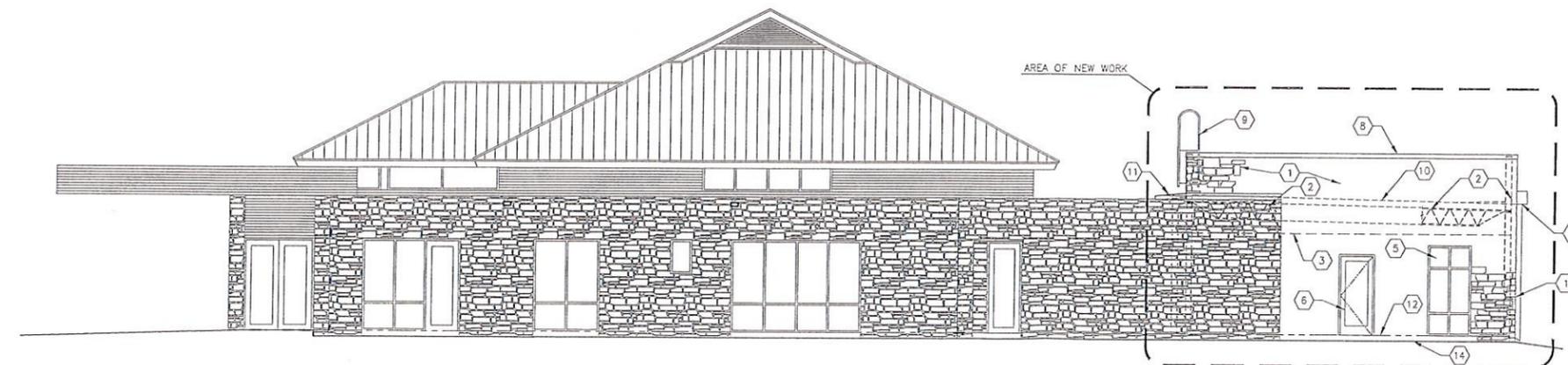
INTERSTATE HWY 20  
 FRONTAGE ROAD



3 SOUTH ELEVATION  
1/4" = 1'-0"



2 WEST ELEVATION  
1/4" = 1'-0"



1 NORTH ELEVATION  
1/4" = 1'-0"

GENERAL NOTES

- A. REFER TO A-101 FOR FLOOR PLAN INFORMATION.
- B. COORDINATE FINAL EXTERIOR MATERIAL SELECTIONS AND COLORS WITH ARCHITECT/OWNER
- C. REFER TO A-502 FOR DOOR AND WINDOW DIMENSIONS, HEIGHTS AND ADDITIONAL INFORMATION
- D. PROVIDE SPLASH BLOCK AT BASE OF DOWNSPOUTS WHERE NOT PIPED TO POND AND AT LANDSCAPE AREAS
- E. PROVIDE CONCRETE DIVERSION CHANNEL WITH GRATE AT SIDEWALKS AT BASE OF DOWNSPOUTS WHERE NOT PIPED TO POND

SHEET KEYNOTES

NOTE: NOT ALL KEYNOTES MAY BE USED THIS SHEET

- 1. STONE VENEER - TO MATCH EXISTING
- 2. DASHED LINES INDICATE FRAMING BEYOND; RE: A-102 FLOOR PLAN AND STRUCTURAL SHEETS
- 3. DASHED LINE INDICATES CEILING BEYOND
- 4. PRE-FINISHED, 22 GA. LEADERHEAD AND DOWNSPOUT SYSTEM TO MATCH EXISTING; RE: ROOF DETAILS SHEET A-50X
- 5. SCHEDULED WINDOW; RE: WINDOW SCHEDULE, SHEET A-602
- 6. SCHEDULED DOOR; RE: DOOR SCHEDULE, SHEET A-602
- 7. LIGHT FIXTURE; RE: ELECTRICAL SHEETS
- 8. PRE-FINISHED 22 GA. METAL COPING; RE: ROOF DETAILS, SHEET A-50X
- 9. ROOF TO ROOF ACCESS LADDER; RE: SHEET A-50X
- 10. DASHED LINE INDICATES TOP OF ROOF BEHIND PARAPET
- 11. OVERFRAME AREA BETWEEN EXISTING BUILDING PARAPET AND NEW BUILDING; PROVIDE COVERBOARD AND MEMBRANE ROOFING
- 12. FINISH FLOOR TO MATCH EXISTING
- 13. OVERFLOW SCUPPER
- 14. FINISH GRADE; RE: CIVIL GRADING PLAN

PRELIMINARY  
 NOT FOR REGULATORY  
 APPROVAL, PERMITTING, OR  
 CONSTRUCTION

ARCHCHIS design, LLC  
 4700 LINCOLN RD NE, SUITE 102 D  
 ALBUQUERQUE, NEW MEXICO 87109  
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 www.archchisdesign.net

**ARCHCHIS**  
 ARCHITECTS

ADDITION TO NORTH TEXAS  
 RETINA CONSULTANTS  
 101 Chuckwagon Trail  
 Weatherford, Texas 76087

**MEERS**  
**ENGINEERING INC.**  
 209 S. DANVILLE  
 SUITE B-200  
 ABILENE, TEXAS  
 (325) 691-1200  
 Texas Registered Engineering Firm F-3300

PROJ. NO.: 19-011  
 DATE: 01/24/20  
 REVISION:  
 DESIGNER: JFO  
 DRAFTER: JFO

EXTERIOR ELEVS

SHEET 8 OF 67

DRAWING NO.

**A-201**



# CITY COUNCIL AGENDA ITEM BRIEFING SHEET

<b>Council Date:</b> July 21,2020	<b>Department:</b> Admin	<b>Presented By:</b> City Manager
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**AGENDA ITEM:**

The City Council may consider, discuss and/or approve a consulting services agreement with the Tommy Morris Agency to solicit sealed proposals for the City's group health, dental, vision and life insurance.

**BACKGROUND:**

The Tommy Morris Agency has been working with the City of Willow Park for the past few years and has assisted the City with procurement of the City's group health, dental, and vision. Staff recommends approving the contract and beginning the procurement process.

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**STAFF/BOARD/COMMISSION RECOMMENDATION:**

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**EXHIBITS:**

<b>ADDITIONAL INFO:</b>	<b>FINANCIAL INFO:</b>	
	<b>Cost</b>	\$
	<b>Source of Funding</b>	\$

## CONSULTING SERVICES AGREEMENT

**THIS CONSULTING SERVICES AGREEMENT** (this “Agreement”) is made and entered into effective as of the 21st day of July, 2020, by and between the City of Willow Park (“City”) and Tommy Morris Agency LLC (“Consultant”).

### W I T N E S S E T H

**WHEREAS**, City is seeking competitive sealed proposals for group health, dental, vision and life insurance (the “City Employee Benefit Program”) for City employees and their dependents;

**WHEREAS**, City desires to have Consultant provide the following professional insurance consulting services (the “Services”) to the City: i) develop proposal specifications to solicit sealed proposals for the City Employee Benefit Program for Fiscal Year 2020-21; ii) solicit proposals for the City Employee Benefit Program; and (iii) analyze proposals received for the City Employee Benefit Program;

**WHEREAS**, Consultant is experienced in the Services and desires to enter into this Agreement with the City.

**NOW, THEREFORE**, in consideration of the premises and of the covenants, promises, conditions and undertakings contained herein, the parties hereby agree as follows:

### TERMS

Section 1. Term of Agreement. This Agreement shall be effective as of July 21, 2020, and shall continue in effect until the completion of the performance of the Services, or until the agreement is terminated by either party upon ten (10) days prior written notice. Upon mutual agreement of the parties, the Agreement may be extended for additional terms of one (1) year.

Section 2. Independent Consultant. Consultant shall perform its duties and obligations hereunder as an independent consultant and nothing contained herein shall be deemed to create a relationship of employer-employee, master-servant, agency, partnership, or joint venture.

Section 3. Description of Services. Consultant shall provide the City with the Services as defined herein.

Section 4. Time to be Devoted to Services. This Agreement commits Consultant to devote sufficient time and attention to the performance of the Services while this Agreement is in effect so as to provide City with the Services contemplated herein.

Section 5. Compensation. In consideration of the Services to be performed by Consultant, City shall pay Consultant the sum of \$100.00 payable upon the signing of the Agreement by both parties. This fee is not refundable. In addition, Consultant may earn commissions from the insurance carrier(s) who are awarded the contract to provide the City Employee Benefits Program by the City.

Section 6. Confidential Information. In the course of the performance of the Services, Consultant may have access to confidential information, records, data, and/or processes owned by or in the possession of City (or any affiliate) and used in the course of City's business, including confidential information related to the Services. Except as needed in the performance of the Services provided herein, Consultant shall not directly or indirectly disclose to any party or parties or use any such confidential information, records, data, and/or processes owned by or in the possession of City (or any affiliate) or related to Services, without the prior written consent of City.

Section 7. No Consequential Damages. In no event shall either party, or its respective officers, Council members, agents and employees, be liable (in contract or in tort, including negligence, strict liability, indemnity and warranty) to the other party for special, indirect, incidental or consequential damages, including but not limited to loss of profits or revenues, loss of goodwill, claims of customers, cost of capital, or similar damages arising from the performance or nonperformance of this Agreement.

Section 8. Amendments. This Agreement may only be amended by a writing signed by all of the parties to this Agreement.

Section 9. Sole and Only Agreement. This Agreement constitutes the sole and only agreement of the parties hereto respecting the subject matter of this Agreement and correctly sets forth the rights, duties and obligations of each to the other in relations thereto as of the date hereof. Any prior agreements, promises, negotiations, or representations concerning its subject matter not expressly set forth in this Agreement shall have no further force or effect.

Section 10. Counterparts. This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which taken together shall constitute one and the same agreement.

Section 11. Waiver. No waiver of any breach of this Agreement shall operate as a waiver of any similar subsequent breach or any breach of any other provision. Any waiver must be in writing signed by an authorized representative of the waiving party.

Section 12. Severability. If any provision of this Agreement is held invalid by a court of competent jurisdiction, it shall be severed herefrom and, to the extent possible, this Agreement shall continue in full force and effect.

Section 13. Governing Law; Venue. This Agreement shall be construed in accordance with the laws of the State of Texas. Venue for any disputes arising out of this Agreement shall be in a State District Court in Parker County, Texas.

Section 14. Assignment. Neither party may assign its interest hereunder without the prior written approval of the other party, such approval to be within the sole discretion of each party. The rights, benefits and remedies herein shall inure to the benefit of permitted successors, assigns, and heirs.

IN WITNESS WHEREOF, the parties have each duly executed this Agreement or caused this Agreement to be duly executed on its behalf to be effective as of the day and year first above written.

CITY OF WILLOW PARK

By: \_\_\_\_\_  
DOYLE MOSS, Mayor

CONSULTANT:  
TOMMY MORRIS AGENCY LLC

By: \_\_\_\_\_  
Nancy Johnson, Chief Executive Officer



# CITY COUNCIL AGENDA ITEM BRIEFING SHEET

<b>Council Date:</b> June 23,2020	<b>Department:</b> Admin	<b>Presented By:</b> City Manager
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**AGENDA ITEM:**  
Fort Worth Water Project

**BACKGROUND:**

Please see the attached letter from Halff and Associates on the progress of the Fort Worth Water Project.

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**STAFF/BOARD/COMMISSION RECOMMENDATION:**

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**EXHIBITS:**

<b>ADDITIONAL INFO:</b>	<b>FINANCIAL INFO:</b>	
	<b>Cost</b>	\$
	<b>Source of Funding</b>	\$



June 16, 2020  
AVO 34094.001

Mr. Bryan Grimes  
City Administrator  
City of Willow Park  
516 Ranch House Road  
Willow Park, Texas 76087

RE: Fort Worth Wholesale Water Project  
Project Status Update

Dear Mr. Grimes:

This letter provides an update on the current status of the project. Below is an update upon the major elements of our design contract. This is followed by an update on the easement acquisitions necessary to construct the project.

**A. Preliminary/Support Tasks**

1. Survey – all topographic survey field work has been completed.
2. Easement documents – documents for 3 permanent easements and 3 temporary construction easements have been prepared. One additional temporary construction easement is in the process of being prepared currently.
3. Environmental review – the required public meeting has been held, and a final report has been submitted. We are awaiting TWDB approval of the report.
4. SUE – all Level B subsurface utility engineering field work has been completed. Level A work is currently underway
5. Geotechnical - all bores have been completed. Final report to be complete in the next few weeks.

**B. Detail Design Tasks** – reported as per each of the three bid packages planned for the overall project

1. Bid Package 1 – 24” pipeline from Fort Worth connection to the El Chico Pump Station – the 60% complete QC has been completed. Design team working towards issuance of 90% complete QC set in mid-July.
2. Bid Package 2 – El Chico Pump Station and Hudson Oaks Meter Station – 30% complete QC package to be issues in next two weeks.
3. Bid Package 3 – 16” pipeline from El Chico Pump Station to Hudson Oaks – the 60% complete QC has been completed. Design team working towards issuance of 90% complete QC set in mid-July.



### C. Easement Acquisitions

Water line easements for the Fort Worth to El Chico Pump Station pipeline are required from the Dean Ranch and Boswell Ranch. The Dean Ranch attorney drafted an easement document that included several conditions that Fort Worth Water Department would not accept. They required a standard easement document without conditions and recommended that any conditions be included in a "pre-annexation" agreement. TOASE attorneys are working with the Dean Ranch attorney to meet the Fort Worth requirements to get the easement dedicated by the Dean Ranch. We have been told that the Boswell Ranch representatives will go along with the same agreements as the Dean Ranch.

As of Friday June 12, 2020, a TOASE attorney provided an update on status indicating that he was working with the Dean Ranch attorney to use a standard form of water line easement and draft the "pre-annexation" agreement to present to Fort Worth. TOASE expects to review the "pre-annexation" agreement on Monday, June 16 and provide minor revisions. No time frame was provided, but it does seem that they are getting close to having a document to present to Fort Worth after the original easement was rejected.

The easement dedication by the ranches is predicated on the Fort Worth pipeline being oversized to provide them capacity for future development. If the dedication cannot be worked out by Fort Worth and the Ranches, easements will need to be acquired by other means and the impact on the project schedule will be significant.

Sincerely,

HALFF ASSOCIATES, INC.

A handwritten signature in blue ink, appearing to read "Preston C. Dillard".

Preston C. Dillard, PE  
Senior Project Manager

C: Frank Crumb, PE  
Derek Turner, PE



# CITY COUNCIL AGENDA ITEM BRIEFING SHEET

<b>Council Date:</b> July 21, 2020	<b>Department:</b> Administrative	<b>Presented By:</b> B. Grimes
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## AGENDA ITEM: 2020-2021 Budget Calendar

### BACKGROUND:

Staff will present a budget calendar.

### 2020-2021 Budget Calendar

August 7, 2020	Proposed Budget filed with the City Secretary's office.
August 25, 2020	1 <sup>st</sup> Budget Hearing
September 1, 2020	2 <sup>nd</sup> Budget Hearing
September 8, 2020	Adopt 2020-2021 Budget and Tax Rate

\*\*Budget workshops can be held at any time between August 7 until August 25

### STAFF/BOARD/COMMISSION RECOMMENDATION:

### EXHIBITS:

Budget Calendar

<b>ADDITIONAL INFO:</b>	<b>FINANCIAL INFO:</b>	
	<b>Cost</b>	
	<b>Source of Funding</b>	TBD



# CITY COUNCIL AGENDA ITEM BRIEFING SHEET

<b>Council Date:</b> July 21	<b>Department:</b> Admin	<b>Presented By:</b> City Manager
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**AGENDA ITEM:**

Discussion Only: Review of the TWDB Application Process and Timing

**BACKGROUND:**

Derek Turner will explain the TWDB Application Process to Council. Please see attachment

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**STAFF/BOARD/COMMISSION RECOMMENDATION:**

---

**EXHIBITS:**

TWDB Process Brief.

<b>ADDITIONAL INFO:</b>	<b>FINANCIAL INFO:</b>	
	<b>Cost</b>	\$
	<b>Source of Funding</b>	\$

The TWDB process is very specific as it relates to the timing of different phases of a project. Here are the steps that are required and the order in which the TWDB mandates they be completed.

1. A project information form (PIF) must be filed in order for the TWDB to consider placing the project on their intended use plan (IUP).
2. If the project is included on a fiscal year's IUP, the TWDB will send out an invitation for the City to submit an application for financial assistance.
3. The City must adopt a resolution authorizing the filing of an application – **application phase**
4. An application for financial assistance must be submitted which includes the following elements:
  - a. Engineering information including a preliminary engineering report, water conservation plan, project description, existing facility and permit details, and other items.
  - b. Financial information including historical financial statements, budgets, customer demands and income, tax revenue, and a proposed proforma (debt schedule)
  - c. Legal information including authorizing resolution, service area documentation, and other items
  - d. Procurement documents (procurement of professional services can be performed before or after the application, but if done, documentation of compliance with federal procurement practices would be included), agreements for professional services
5. If the application is approved, a bond ordinance must be adopted by the City and approved by the secretary of state and the TWDB.
6. Once the bond ordinance is approved the loan will be closed and funds will be available for distribution for the **planning phase**.
7. Once the closing occurs, the planning phase begins. During this phase, an environmental assessment, right-of-way acquisition, a final engineering report, and permitting, would be completed, not necessarily in that order.
8. Once the final engineering report is approved by the TWDB, funds would be released for the **design phase**.
9. Plans & Specs would be developed which the City would have to approve prior to submitting to the TWDB for review.
10. Once the TWDB approves the design documents, funds would be released for the **construction phase** and the project can be put out for bid.
11. After the bids are awarded, the TWDB must approve the executed contracts prior to start of construction.

The City and the TWDB must review and approve all funds before they are distributed and TWDB will only allow distribution of funds for the phase that they have released (phases in bold above).

It is unlikely that the TWDB closing could occur until early next year and council would have to evaluate and approve the wastewater disposal method, siting, and project scope, on at least three different occasions before that occurs.



# CITY COUNCIL AGENDA ITEM BRIEFING SHEET

<b>Council Date:</b> July 21, 2020	<b>Department:</b> Admin	<b>Presented By:</b> City Manager
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**AGENDA ITEM:**

Discussion Only: Wastewater Treatment options, Derek Turner

**BACKGROUND:**

As requested by Council, Derek Turner will present site evaluations and options for a wastewater treatment site.

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**STAFF/BOARD/COMMISSION RECOMMENDATION:**

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**EXHIBITS:**

Derek Turner Presentation

<b>ADDITIONAL INFO:</b>	<b>FINANCIAL INFO:</b>	
	<b>Cost</b>	\$
	<b>Source of Funding</b>	\$

# CITY OF WILLOW PARK

## WASTEWATER OPTIONS

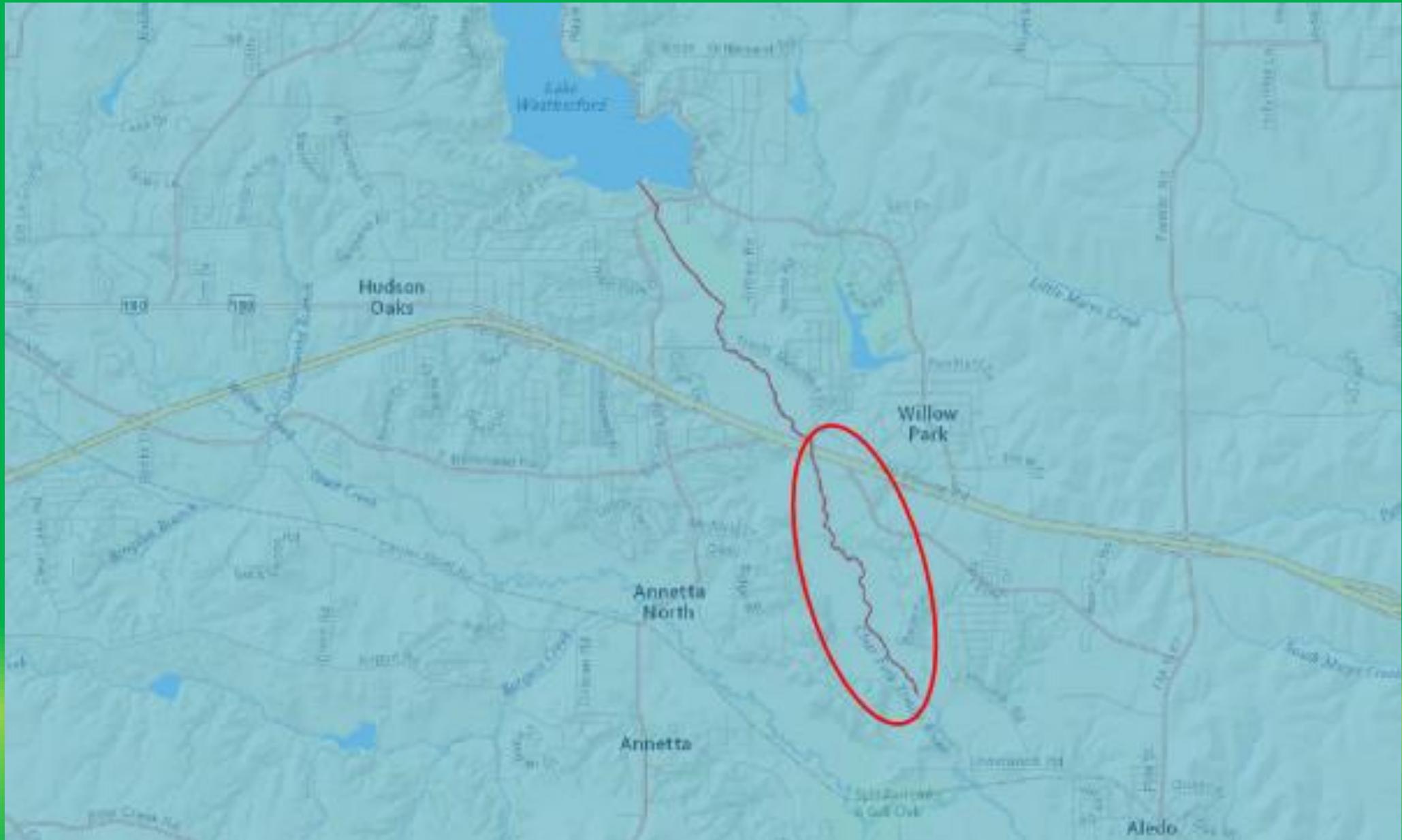
JACOB & MARTIN, LLC

DEREK TURNER, P.E.

# Factors to Consider

- Discharge Location
  - The section of the Clear Fork from IH20 to approximately 2 miles south of IH20 is on the EPA's 303d Impaired Stream List
  - The TCEQ has confirmed that they will not allow additional discharges into or upstream of that section, but that existing discharges could be maintained
- Available Property and Surrounding Conditions
- Timing
- Capacity and Projections

# EPA IMPAIRED STREAM DESIGNATION



# Wastewater Disposal Options

- Construct a New Plant (Site Options)
- Fort Worth Contract
- Weatherford Contract
- Aledo Contract



# Cost of Options

Based on 1.0 MGD and No Irrigation Component

- Contract with Aledo for Treatment \$15.784 M
- Contract with Fort Worth for Treatment \$21.584 M
- Contract with Weatherford for Treatment \$24.942 M
  
- Existing Site \$14.676 M
- TRZ Site \$16.14 M
- Kings Gate Site \$14.158 M
- South of IH20 Site \$14.13 M

	Wholesale	Wholesale	Existing	TRZ	Kingsgate	South of IH20
	Weatherford	Fort Worth	Site	Site	Site	Site
Estimated Construction/ Buy-in Cost	\$ 24,817,000	\$ 21,334,000	\$ 14,676,000	\$ 16,140,000	\$ 14,157,500	\$ 13,707,500
Cost of Land Required	\$ 125,000	\$ 250,000		\$ 1,800,000		\$ 450,000
Other Costs (irrigation equipment and piping)			\$ 700,000	\$ 560,000	\$ 605,000	\$ 600,000
Estimated Total Cost	\$ 24,942,000	\$ 21,584,000	\$ 15,376,000	\$ 18,500,000	\$ 14,762,500	\$ 14,757,500
Ability to Discharge Up to 1.0 MGD	Part of Agreement	Part of Agreement	Limited to 0.5 MGD at the Site	Must pipe 100% of Discharge Some Distance	Limited to 0.5 MGD at the Site	Limited to 0.5 MGD at the Site
Cost/Ability to Use Irrigation			Not Enough Nearby Property	Would Require Land from the Bluffs	Not Enough Nearby Property	Could Irrigate Approx. 45 Acres
Cost/Ability to Sell Discharge to a 2nd Party			Limited Would Have to Pipe it (See Cost Above)	Limited Would Have to Pipe it (See Cost Above)	Limited Would Have to Pipe it (See Cost Above)	Onsite Improvements it (See Cost Above)
Cost to Discharge Out of Impaired Stream			\$ 2,676,000	\$ 2,590,000	\$ 2,000,000	\$ 1,871,500
Timing to Get Agreement/ Construction	Negotiation for Contract + Constr	6+ Years	2 Years	2 Years	2 Years	2 Years
Ability to Expand Beyond 1 MGD in the Future	Would have to be Negotiated and Would Include Additional Buy-in	Would have to be Negotiated and Would Include Additional Buy-in	Limited	Room for Expansion	No Room for Expansion	Room for Expansion
Other Advantages	No Operational Expenses and No Plant in City	No Operational Expenses and No Plant in City	Already a Permitted Discharge of 0.5 MGD	Already Zoned for WWTP	Near the Main Lift Station	Allows Service to More Areas w/o Pumping Could Eliminate Kings Gate Lift Station More Isolated
Other Disadvantages	Not in Control of Rates Longterm Additional Costs not Yet Known	Not in Control of Rates Longterm	Future Discharge Increase Could Require Additional Cost	Future Discharge Increase Could Require Additional Cost	Future Discharge Increase Could Require Additional Cost	Farther to Go to Golf Course if Irrigation is Considered There

# Recommended Option

- New Plant
  - Cost = \$17.0 M
  - Includes refinance of existing sewer note (\$2.9 M)
  - Based on Recommendation of IH20 South Site
  - Permitting can start as soon as site is finalized

# Projected Income

- Current Rates

Base Charge = \$20.00

Volumetric Charge = \$5.15 per 1,000 Gallons Water Used

- Average Daily Use = 7,660 Gallons per Connection per Day

- 2019 Annual Direct Revenue = \$570,930

- Projected Additional Revenue = \$418,000\*

\*Assumes no rate increase and only currently permitted development.

# User Costs

	Debt Service	Average Projected Monthly User Cost	% Increase from Initial User Cost
CWSRF \$17 Million Projected <sup>1</sup>	\$ 487,000.00	\$ 17.56 <sup>2</sup>	
Additional \$0.5 Million	\$ 17,200.00	\$ 1.00	5.7%
Additional \$1.0 Million	\$ 34,400.00	\$ 1.99	11.4%
Additional \$5.0 Million	\$ 172,000.00	\$ 9.97	56.8%
Additional \$10.0 Million	\$ 344,000.00	\$ 19.94	113.5%

1. Does not include reduction for refinance of \$2.9 million wastewater loan.

2. Adjusted for additional customer base charges and increased O&M.

**PRELIMINARY  
ENGINEERING FEASIBILITY REPORT**

**CITY OF WILLOW PARK  
WASTEWATER TREATMENT  
IMPROVEMENTS**

**June 2020**

**Funded by: Texas Water Development Board**

**Clean Water State Revolving Fund Project No. 62850**

*Prepared by:*



Firm# F-2448

**Weatherford Office Address:**

1508 Santa Fe Drive, Suite 203

Weatherford, Texas 76086

(817) 594-9880

[www.jacobmartin.com](http://www.jacobmartin.com)



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**CITY OF WILLOW PARK**

**PRELIMINARY ENGINEERING FEASIBILITY REPORT**

**May 2020**

**I. GENERAL**

In February 2020, the City of Willow Park (City) authorized Jacob & Martin, LLC to perform an engineering report and to assist with completion of the financial application for a Wastewater Treatment Improvements Project through the Texas Water Development Board (TWDB) Clean Water State Revolving Fund (CWSRF). The City currently owns a wastewater collection and treatment system that is located approximately twenty miles west of the City of Fort Worth, Texas.

**II. POPULATION AND WATER USE PROJECTIONS**

The City currently serves the area in and around the City of Willow Park in Parker County. Table IIA below shows the projected growth of the City. This projection was made using Census Data, previous City population studies, and the TWDB population projections through 2060.

Table IIA: Population Projections

Year	2010	2015	2020	2030	2040	2050	2060
Population	3,779	4,805	6,323	7,954	10,771	14,587	15,170

Table IIA shows a projected population increase of approximately 4.35% per year between 2020 and 2050. Future annexation is assumed in this projection and it therefore shows a true population projection of the City’s actual service area. Historical meter data was also obtained, and projections were made based on the historical growth of meters within the City’s service area. These projections can be seen below in Table IIB.

**Table IIB: Historical and Projected Meter Growth**

	Historical Data		Projected Meters				
Year	2010	2015	2020	2030	2040	2050	2060
Meter Count	480	720	800	2156	3333	6351	6351

Table IIB shows a comparable historical meter growth as the population data. The City currently experiences a usage of approximately 277 gallons per connection per day. Table IIC shows the projected water usage by the City for the next 42 years based on the historical usage per connection and the projected meter count from Table IIB.

**Table IIC: Historical and Projected Wastewater Flows**

	Historical Usage				Projected Usage			
Year	2016	2017	2018	2019	2020	2030	2040	2050
Average Day Flow (MGD)	0.212	0.157	0.236	0.244	0.288	0.647	1.00	1.25

**III. EXISTING WASTEWATER INFRASTRUCTURE**

The City currently operates approximately 13.5 miles of 2-inch through 10-inch gravity line and force main, three lift stations, and a wastewater treatment plant. The City's wastewater treatment plant is a conventional activated sludge plant with an average day capacity of 0.5 MGD. The plant was constructed in 2018.

The wastewater collection system serves a portion of the City's population (approximately 1/3) with the older, remaining part of the City being served by on-site septic systems. The City collects wastewater from the southeast portion of the service area and pumps it from the Willow Park Village Lift Station to a gravity line near the intersection of Willow Bend and Willow Crossing Drive. The sewer system then gravity feeds to Beavers Creek on the north side of Interstate 20 in the central part of the system and is pumped into a gravity line near Chuckwagon Trail. The system then gravity flows to the main lift station at the intersection of Kings Gate Road and the Clear Fork of the Trinity River. All the sewer is then pumped to the existing wastewater treatment plant which is located at the southeast intersection of Crown Road and Crown Pointe Boulevard. The discharge of the plant is sent into the Clear Fork of the Trinity River, just to the east of the plant.

The current effluent limits for the wastewater treatment plant are BOD = 5 mg/l, TSS = 5 mg/l, Ammonia Nitrogen = 1.8 mg/l, and Phosphorus = 1 mg/l.

The City is expecting to see significant growth in their system over the next 10 to 20 years, as evidenced by the projections in Section II. The capacity of the current plant is expected to be exceeded by the year 2024. Additionally, the stream segment that the plant currently discharges to is listed as impaired on the EPA's 303(d) list of impaired streams. This will likely require relocating future, additional discharges, implementing tertiary treatment, and/or utilizing alternate methods of disposal.

IV. ALTERNATIVES

Various alternatives have been evaluated related to potential sites for a new wastewater treatment plant and options for a wholesale agreement with another entity have been considered as well.

**Wholesale Agreement Option:** The City has investigated the possibility of entering into a wholesale sewer treatment agreement with a neighboring community and eliminate the treatment plant entirely. There are three entities that currently treat (or will treat) wastewater in the vicinity of Willow Park and with the capability to potentially take on the additional volume. Aledo and Weatherford each have existing wastewater plants within five miles of Willow Park's main lift station. Fort Worth is planning to build a new plant at Mary's Creek which is approximately nine miles from Willow Park's main lift station. Willow Park personnel have contacted each entity and discussed the possibility of a wholesale arrangement.

The City of Aledo maintains a wastewater treatment facility at the end of Barnwell Road near the Clear Fork of the Trinity River. The plant is currently permitted for 0.6 MGD (average day flow). Aledo has indicated that, in order to satisfy its own growth projections, the City has plans to upgrade the plant in the near future. Preliminary estimates of the cost of that upgrade are on the order of \$10 million for an additional capacity of no more than 1.0 MGD. While Aledo has not offered to include Willow Park in their future expansion, preliminary discussions have taken place. An estimate has been prepared for the transmission of Willow Park's wastewater to Aledo which is contained in Appendix B. The total cost for the Aledo option, including a ten million dollar buy-in is estimated to be \$15.784 million. The timing of Aledo's planned expansion is not yet known, but would be beyond the 2024 timeframe in which Willow Park expects to need additional capacity.

The City of Fort Worth is planning to build a new wastewater plant on Mary's Creek off Chapin Road in West Fort Worth. Fort Worth staff have indicated that the plant is

expected to include a permitted capacity of 10 MGD and the projected cost of the plant is \$130 million. Fort Worth has demonstrated a willingness to discuss a wholesale agreement with Willow Park, at least at the staff level, however, significant obstacles may exist for this option. Fort Worth would have to increase their planned capacity late in their permitting process, and with the location of their discharge, permitting is already proven to be a challenge. Fort Worth is hesitant to add additional layers to an already difficult process. More importantly, however, is the fact that Fort Worth does not expect to start construction on their proposed improvements until at least 2026, well beyond Willow Park's threshold. The estimated cost for transmission of Willow Park's wastewater to the Mary's Creek location is \$6.144 million (see Appendix B) and the total cost with the anticipated buy-in of \$13 million would be \$21.584 million.

The City of Weatherford maintains a wastewater treatment facility on Eureka Street near Town Creek. The permitted, average day flow for this plan is currently 4.5 MGD. Weatherford has indicated a willingness to contract with Willow Park and commissioned a study to determine the impact and cost associated with a wholesale agreement with Willow Park (Freese and Nichols Technical Memorandum January, 2019). That study (included in Appendix C) determined that an upgrade cost share of \$18.97 million would be necessary within a ten year planning period in order to bring Willow Park on as a wholesale customer. Weatherford staff have also indicated that some level of buy-in to existing facilities may be necessary as well as upfront impact fees. These costs are not known at this time. The projected transmission costs from Willow Park's main lift station to the connection point to Weatherford are estimated to be \$4.092 million. Therefore, the total known costs for a Weatherford agreement would be \$24.942 million.

**Treatment Plant Option:** Willow Park personnel have investigated a number of sites for the construction of a new wastewater treatment facility to meet their projected needs. These sites include the existing wastewater treatment facility (Existing Site), a site near their existing main lift station on Kings Gate Boulevard (Kings Gate), a location on the west side of the City in what has been designated as a Tax Reinvestment Zone (TRZ), a location immediately downstream of the Squaw Creek Golf Course Lake dam (Squaw

Creek), and a location south of IH20 on the Clear Fork of the Trinity River (I20 South). In addition to cost, each site should be evaluated with respect to size, piping and pumping requirements, permitting, floodplain/floodway encroachment, constructability, and other factors. Each site has been evaluated based on the construction of a new 1.0 MGD wastewater plant, of similar construction for each scenario.

The Squaw Creek location was evaluated five years ago and was determined to be the least desirable location due to potential permitting issues as it was in closest proximity to residential development, floodway encroachment, and the fact that it would have the highest transmission costs both from the influent sewer and the discharge location.

The Existing Site would be well suited as it already functions as a wastewater treatment plant site and the current 0.5 MGD discharge could be maintained at this location. However, the site is located on the impaired section of the Clear Fork of the Trinity River and any new discharge would have to be piped some three miles to the south. Additionally, there is no available property on or near the plant site that could be used for irrigation of effluent and most of the new facilities would have to be raised above the 100-year floodplain elevation. The vast majority of the collection system currently pumps to this site and this would have to be increased for future flows. An additional drawback to this location is that it would be limited for future expansion. The site is approximately 7 ½ acres and buffer requirements will limit any future increase in footprint. The property is surrounded on three sides by new commercial development. The anticipated cost of utilizing this site is \$14.676 million.

The TRZ location is part of a larger residential and commercial development and borders a property anticipated to be developed in the near future. It is the only site option that is not located substantially in a floodplain, but being of higher elevation would require additional pumping costs now and in the future. This site is slightly larger than the existing location, at 8.0 acres, but would still be limited for future expansion. The initial 0.5 MGD discharge would have to be piped approximately 1,000 linear feet to the river

and the remainder would have to be piped below the impaired section. The estimated cost to utilize this site is \$14.54 million.

The Kings Gate site is located immediately adjacent to the existing main lift station. This would eliminate, or at least minimize, the need for future influent transmission upgrades. Even though this location is within the impaired stream section, the initial 0.5 MGD discharge could be moved from the current location since it would be a transfer of an equivalent flow. Additionally, the distance required to transfer an additional 0.5 MGD out of the impaired stream segment would be less. The facility is the smallest of the options discussed, and future expansion would be very limited. The site is almost entirely within the floodplain so the facilities would have to be raised as well. This location is surrounded by residential and commercial development and would likely be more problematic from a permitting perspective for that reason. The total cost of this location is estimated to be \$14.158 million.

The I20 South location is the farthest downstream allowing for future gravity flow to the site and eliminating potential pumping costs. In fact, the existing lift station may be eliminated by utilizing this site. The site includes 56 acres, so that future expansion and potential irrigation of effluent would be feasible. This site is closest to the end of the impaired segment and borders the river so that the cost of transmission of effluent would be least. This location does contain a significant amount of floodway, however there is still over 20 acres of property usable for treatment equipment siting. In order to utilize this property, an all-weather road would have to be built increasing the overall cost. The estimated cost for this site would be \$14.13 million.

Constructing a new plant at the I20 South location would be the least costly out of all of the available alternatives. This option is favorable based on most of the other evaluation criteria as well. In particular, the relatively secluded location and the close proximity to the discharge point could reduce potential permitting issues that might otherwise delay the project.

V. **PROPOSED IMPROVEMENTS**

The recommended infrastructure would include a constructing a new 1.0 MGD wastewater treatment plant on the 56-acre site south of Interstate 20. This new plant would utilize much of the equipment from the existing plant and include the expanded capacity. Approximately 4,300 linear feet of gravity sewer line would be required to convey the sewer from the existing main lift station to the new plant site. An additional approximate 6,400 linear feet of gravity sewer line would be required to reach the new discharge point on the Clear Fork of the Trinity River. Irrigation facilities are proposed to be installed at the plant site as well as grading improvement to allow land application for some of the effluent. The expected annual operations and maintenance cost for the proposed system would be approximately \$400,000.

VI. **PROJECT COST AND SCHEDULE**

The following Estimated Project Costs should be valid for at least twelve months provided there is a small rate of inflation. Table VIA below is a cost estimate for the proposed improvements.

A. Estimated Project Cost

Table VIA. Proposed Project Cost Estimate

<b><u>CONSTRUCTION COSTS</u></b>	
Wastewater Treatment Plant	\$8,978,420
Wastewater Transmission Lines	\$1,301,580
Contingencies	\$950,478
<b>Subtotal – Total Construction Costs</b>	<b>\$11,230,478</b>

<b><u>NON-CONSTRUCTION COSTS</u></b>	
Legal Assistance and Financial Advisor Fees	\$429,253
Preliminary Engineering & TWDB Application	\$55,000
Basic Engineering	\$670,000
Environmental Assessment	\$75,000
Surveying, Testing & Inspection	\$370,000
Right-of-Way Acquisition	\$1,400,000
Refinance Existing Debt	\$2,870,000
<b>Subtotal – Total Non-Construction Costs</b>	<b>\$5,769,522</b>
<b>TOTAL PROJECT COST</b>	<b><u>\$16,800,000</u></b>

- B. Wastewater Rates: The average sewer bill per month for the City is estimated to be \$47.00. Below are the City’s wastewater service rates:

**Wastewater Base Charge                    \$18.43**

**Wastewater Volumetric Charges    \$4.75 per 1,000 gallon water usage**

The City currently has 482 permitted connections for developments that have not been completed as yet, but that are expected to be online within the next three years. Based on the current rate structure, the estimated additional revenue that would be generated from the additional customers would be \$418,000.

C. Schedule: The proposed schedule for this project is as follows:

Table VIB. Proposed Project Schedule

Item	Completion Date
Commitment Date	08/12/2020
Closing Date	11/10/2020
Acquisition Complete	1/15/2021
Environmental Determination	04/30/2021
Engineering Report Approval	04/30/2021
Planning & Design Complete	08/31/2021
Construction Start	11/29/2021
Construction Completion	11/30/2022

**VII. CONCLUSION AND RECOMMENDATIONS**

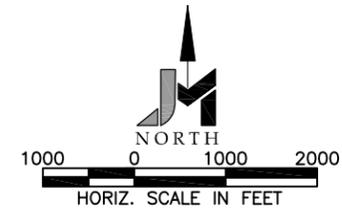
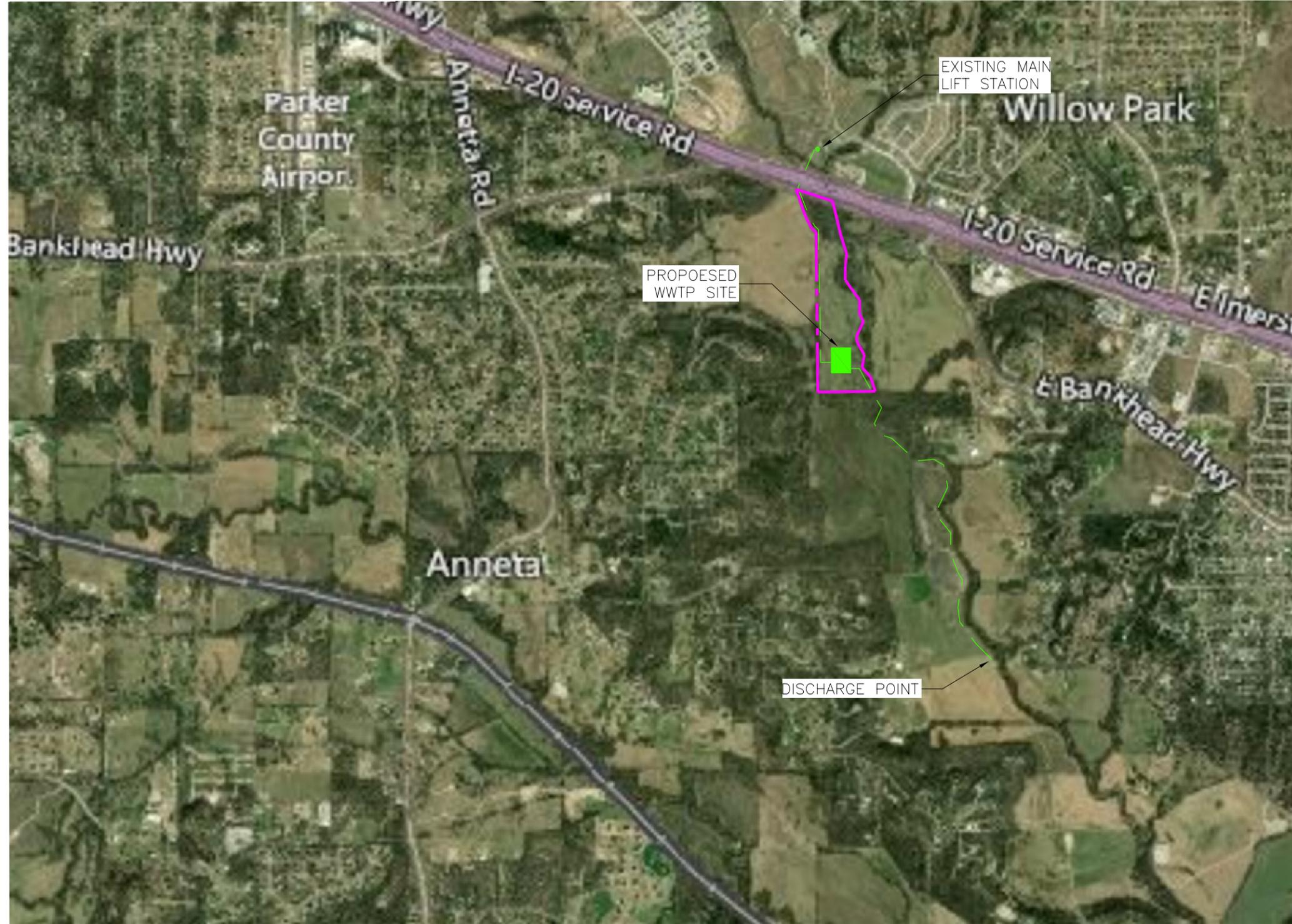
The City of Willow Park is in need of additional wastewater treatment capacity to meet projected demands over the next five years and beyond. The need for enhanced effluent quality and/or alternate disposal methods limit the available options for achieving this increase. The City has investigated multiple options for the disposal of wastewater and, based on the data collected, it appears that the construction of a new wastewater plant in a new location is the best alternative. It is recommended that the City pursue funding from the Texas Water Development Board Clean Water State Revolving Fund to finance a new wastewater treatment facility and associated improvements.

Respectfully Submitted:

Derek Turner, P.E.

**APPENDIX A: PROJECT MAP**

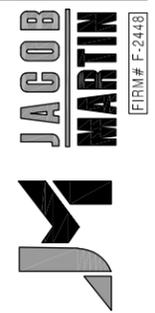
PLOTTED ON: 6/24/2020 11:39 AM PRINTED BY: DEREK TURNER  
 X:\CI-WILLOW\_PARK\15013 - WASTEWATER TREATMENT PLANT IMPROVEMENTS\DRAWING\PLANS\CIVIL\PRELIM\2020-05-06\15013-WWTP-CWSRF PROJECT MAP.DWG



UNLESS OTHERWISE NOTED, THIS SHEET IS INTENDED TO BE:  
 XX SCALE When Plotted 22"x34" True Fullsize  
 XX SCALE When Plotted 11"x17" True Halfsize  
 (Using "Fit to Paper" when plotting may distort the scale.)

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 LUBBOCK, TX, 79606  
 806-868-1070  
 1508 SANTA FE DR, STE 204  
 WEATHERFORD, TX 76086  
 817-594-9880  
 1014 BROADWAY STREET  
 LUBBOCK, TX 79401  
 806-366-6375



WILLOW PARK, TEXAS  
**WASTEWATER TREATMENT PLANT IMPROVEMENTS**  
 EXHIBIT  
**CWSRF AERIAL MAP**

NO.	REVISION	DATE	SCALE	1"=1000'
			PROJECT #	15013
			DESIGNED	A.D.T.
			DRAWN	L.S.J.
			CHECKED	A.D.T.

BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING.  
 CHECK SCALE & ADJUST ACCORDINGLY.

SHEET 01  
 SEQ. 01 OF 01

**APPENDIX B: ALTERNATIVE COST ETIMATES**

**CITY OF WILLOW PARK  
IH20 SOUTH SITE  
PRELIMINARY COST ESTIMATE  
JUNE 2020**

**CONSTRUCTION COSTS**

1	12" PVC Gravity Main	4,300 LF @ \$65.00/LF	\$	279,500
2	10" PVC Gravity Main	6,368 LF @ \$60.00/LF	\$	382,080
3	Bore & Encasement	500 LF @ \$300.00/LF	\$	350,000
4	Directional Bore	300 LF @ \$300.00/LF	\$	90,000
5	Manholes	Lump Sum	\$	100,000
6	Project Contingencies		\$	100,000
				<b><u>\$ 1,301,580</u></b>

**NON-CONSTRUCTION COSTS**

Environmental Assessment	\$	25,000
Basic Engineering	\$	105,000
Surveying	\$	85,000
Inspection	\$	40,000
Testing	\$	15,000
ROW Acquisition	\$	300,000
New 1.0 MGD WWTP (All Costs)	\$	12,258,420
		<b><u>\$ 12,828,420</u></b>

**TOTAL PROJECT COST** **\$ 14,130,000**

**CITY OF WILLOW PARK  
KINGS GATE SITE  
PRELIMINARY COST ESTIMATE  
JUNE 2020**

**CONSTRUCTION COSTS**

1	10" PVC Gravity Main	10,668 LF @ \$60.00/LF	\$	640,080
2	Bore & Encasement	500 LF @ \$290.00/LF	\$	350,000
3	Directional Bore	300 LF @ \$290.00/LF	\$	87,000
5	Manholes	Lump Sum	\$	100,000
8	Project Contingencies		\$	110,000

**\$ 1,287,080**

**NON-CONSTRUCTION COSTS**

Environmental Assessment	\$	25,000
Basic Engineering	\$	100,000
Surveying	\$	85,000
Inspection	\$	40,000
Testing	\$	12,000
ROW Acquisition	\$	450,000
New 1.0 MGD WWTP (All Costs)	\$	12,158,420

**\$ 12,870,420**

**TOTAL PROJECT COST**

**\$ 14,157,500**

**CITY OF WILLOW PARK  
TRZ SITE  
PRELIMINARY COST ESTIMATE  
JUNE 2020**

**CONSTRUCTION COSTS**

1	10" PVC Gravity Main	16,150 LF @ \$60.00/LF	\$ 969,000
2	Bore & Encasement	1,000 LF @ \$300.00/LF	\$ 350,000
3	Directional Bore	300 LF @ \$300.00/LF	\$ 90,000
4	Manholes	Lump Sum	\$ 150,000
5	Lift Station Improvements	1 EACH @ \$75,000	\$ 75,000
6	Project Contingencies		\$ 131,000
			<b><u>\$ 1,765,000</u></b>

**NON-CONSTRUCTION COSTS**

Environmental Assessment	\$ 25,000
Basic Engineering	\$ 135,000
Surveying	\$ 100,000
Inspection	\$ 50,000
Testing	\$ 15,000
ROW Acquisition	\$ 500,000
New 1.0 MGD WWTP (All Costs)	\$ 11,950,000
	<b><u>\$ 12,775,000</u></b>

**TOTAL PROJECT COST** **\$ 14,540,000**

**CITY OF WILLOW PARK  
EXISTING SITE  
PRELIMINARY COST ESTIMATE  
JUNE 2020**

**CONSTRUCTION COSTS**

1	10" PVC Gravity Main	16,000 LF @ \$60.00/LF	\$	960,000
2	Bore & Encasement	1,000 LF @ \$290.00/LF	\$	350,000
3	Directional Bore	600 LF @ \$290.00/LF	\$	174,000
4	Manholes	Lump Sum	\$	150,000
5	Lift Station Improvements	1 EACH @ \$75,000	\$	75,000
6	Project Contingencies		\$	137,000
			<b>\$</b>	<b><u>1,846,000</u></b>

**NON-CONSTRUCTION COSTS**

Environmental Assessment	\$	25,000
Basic Engineering	\$	145,000
Surveying	\$	95,000
Inspection	\$	50,000
Testing	\$	15,000
ROW Acquisition	\$	500,000
New 1.0 MGD WWTP (All Costs)	\$	12,000,000
	<b>\$</b>	<b><u>12,830,000</u></b>

**TOTAL PROJECT COST** **\$ 14,676,000**

**CITY OF WILLOW PARK  
SEWER TO ALEDO  
PROJECT COST ESTIMATE  
JUNE 2020**

**CONSTRUCTION COSTS**

1	16" PVC Force Main	27,000 LF @ \$90.00/LF	\$	2,430,000
2	Bore & Encasement	1,000 LF @ \$325.00/LF	\$	350,000
3	Directional Bore	1,000 LF @ \$325.00/LF	\$	325,000
4	Valves	Lump Sum	\$	40,000
5	Meter and Vault	Lump Sum	\$	35,000
6	Manholes	4 EACH @ \$4,500	\$	18,000
7	New Lift Station	1 EACH @ \$275,000	\$	275,000
8	Lift Station Improvements	1 EACH @ \$100,000	\$	100,000
9	SCADA	Lump Sum	\$	30,000
10	Project Contingencies		\$	286,000

**\$ 3,889,000**

**NON-CONSTRUCTION COSTS**

Legal, Financial & Filing Fees	\$	200,000
Preliminary Engineering	\$	50,000
Environmental Assessment	\$	75,000
Basic Engineering	\$	300,000
Surveying	\$	150,000
Inspection	\$	250,000
Testing	\$	60,000
Permitting	\$	60,000
1.0 MGD WWTP Expansion Buyin	\$	10,000,000
ROW Acquisition	\$	750,000

**\$ 11,895,000**

**TOTAL PROJECT COST**

**\$ 15,784,000**

**CITY OF WILLOW PARK  
SEWER TO FORT WORTH  
PRELIMINARY COST ESTIMATE  
MARCH 2020**

**CONSTRUCTION COSTS**

1	16" PVC Force Main	47,000 LF @ \$90.00/LF	\$	4,230,000
2	Bore & Encasement	1,500 LF @ \$325.00/LF	\$	350,000
3	Directional Bore	1,000 LF @ \$325.00/LF	\$	325,000
4	Valves	Lump Sum	\$	50,000
5	Meter and Vault	Lump Sum	\$	35,000
6	Manholes	4 EACH @ \$4,500	\$	18,000
7	New Lift Station	2 EACH @ \$275,000	\$	550,000
8	Lift Station Improvements	1 EACH @ \$100,000	\$	100,000
9	SCADA	Lump Sum	\$	30,000
10	Project Contingencies		\$	456,000
			<b>\$</b>	<b><u>6,144,000</u></b>

**NON-CONSTRUCTION COSTS**

Legal, Financial & Filing Fees	\$	275,000
Preliminary Engineering	\$	50,000
Environmental Assessment	\$	75,000
Basic Engineering	\$	465,000
Surveying	\$	175,000
Inspection	\$	275,000
Testing	\$	65,000
Permitting	\$	60,000
1.0 MGD WWTP Expansion Buyin	\$	13,000,000
ROW Acquisition	\$	1,000,000
	<b>\$</b>	<b><u>15,440,000</u></b>

**TOTAL PROJECT COST** **\$ 21,584,000**

**CITY OF WILLOW PARK  
SEWER TO WEATHERFORD  
PRELIMINARY COST ESTIMATE  
DECEMBER 2017**

**CONSTRUCTION COSTS**

1	16" PVC Force Main	26,000 LF @ \$90.00/LF	\$ 2,340,000
2	Bore & Encasement	1,500 LF @ \$325.00/LF	\$ 350,000
3	Directional Bore	1,000 LF @ \$325.00/LF	\$ 325,000
4	Valves	Lump Sum	\$ 40,000
5	Meter and Vault	Lump Sum	\$ 35,000
6	Manholes	Lump Sum	\$ 18,000
7	New Lift Station	2 EACH @ \$275,000	\$ 550,000
8	Lift Station Improvements	1 EACH @ \$100,000	\$ 100,000
9	SCADA	Lump Sum	\$ 30,000
10	Project Contingencies		\$ 304,000
			<b><u>\$ 4,092,000</u></b>

**NON-CONSTRUCTION COSTS**

Legal, Financial & Filing Fees	\$ 210,000
Preliminary Engineering	\$ 50,000
Environmental Assessment	\$ 75,000
Basic Engineering	\$ 310,000
Surveying	\$ 115,000
Inspection	\$ 250,000
Testing	\$ 60,000
Permitting	\$ 60,000
1.0 MGD WWTP Expansion Buyin	\$ 18,970,000
ROW Acquisition	\$ 750,000
	<b><u>\$ 20,850,000</u></b>

**TOTAL PROJECT COST \$ 24,942,000**

**APPENDIX C: WILLOW PARK WASTEWATER SERVICE ANALYSIS**

# TECHNICAL MEMORANDUM



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**TO:** Rick Shaffer, P.E., City of Weatherford  
**CC:** Bill Smith, P.E., City of Weatherford  
**FROM:** Cullen Carlson, P.E., Freese and Nichols, Inc.  
**SUBJECT:** Willow Park Wastewater Service Analysis  
**DATE:** January 25, 2019



## 1.0 Introduction

The City of Weatherford (City) retained Freese and Nichols, Inc. (FNI) in 2018 to evaluate the Weatherford wastewater collection system for the potential to provide wholesale wastewater service to the City of Willow Park. The City of Willow Park currently owns and operates a Wastewater Treatment Plant (WWTP) that has reached the end of its useful life, so Willow Park entered discussions with the City of Weatherford to determine the feasibility of conveying wastewater flow through the Weatherford wastewater collection system to the Weatherford WWTP. The purpose of this study is to examine the impact the additional wastewater flow from the City of Willow Park will have on the City of Weatherford's wastewater collection system and WWTP for the 10-year and buildout planning periods.

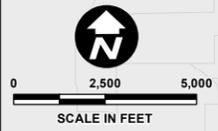
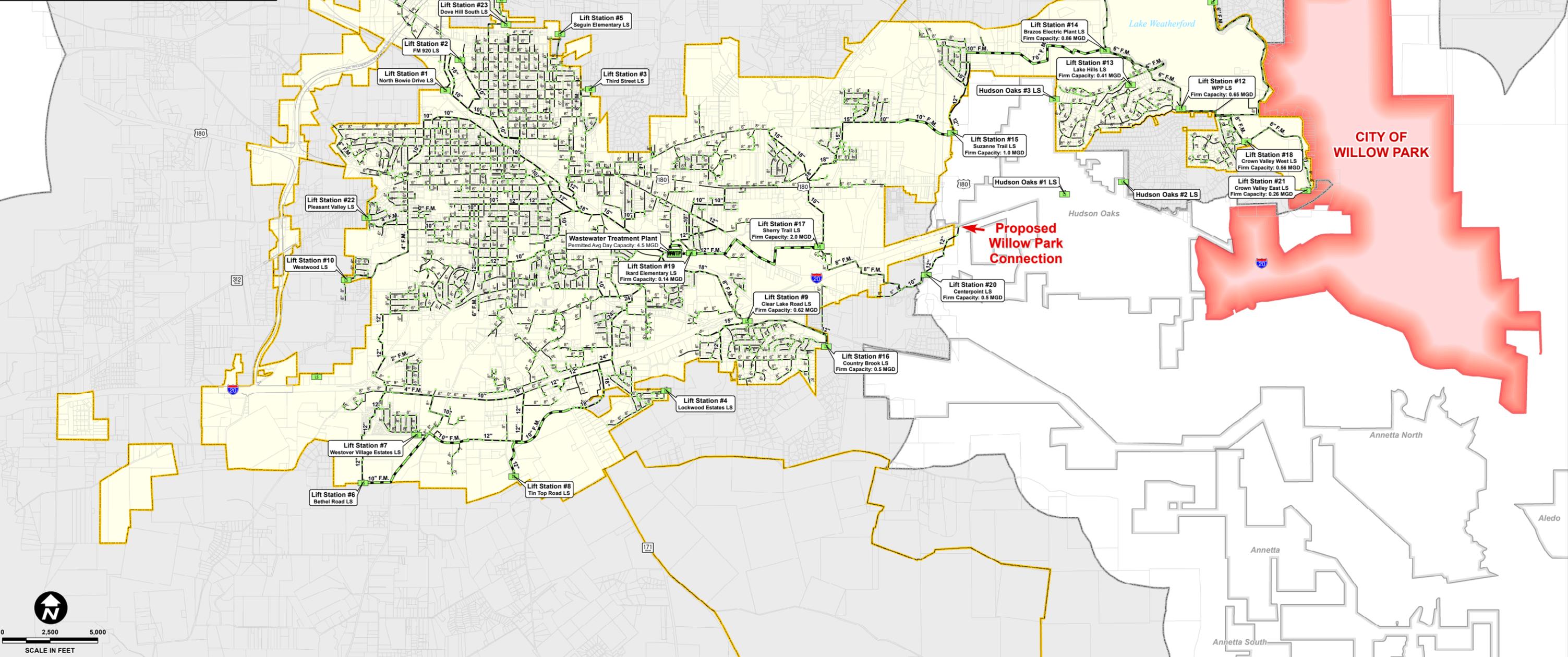
## 2.0 Wastewater Collection System

The City of Weatherford's wastewater collection system consists of 25 lift stations, a wastewater treatment plant and 204 miles of gravity mains and force mains ranging in size from 4-inches to 30-inches. The wastewater treatment plant has an average day wastewater permitted capacity of 4.5 million gallons per day (MGD). The City of Willow Park is proposed to connect to the Weatherford collection system at the most upstream manhole on the 12-inch wastewater line that currently serves the City of Hudson Oaks. The proposed manhole is located along I-20 just outside of the City of Weatherford City Limits. **Figure 1** shows the proposed location where Willow Park will convey flow to the Weatherford wastewater collection system.

**FIGURE 1**  
**CITY OF WEATHERFORD**  
**WASTEWATER SYSTEM**  
**PROPOSED WILLOW PARK**  
**CONNECTION**

**LEGEND**

- Willow Park City Limit
- Manhole
- Lift Station
- Wastewater Treatment Plant
- 8" and Smaller Wastewater Line
- 10" and Larger Wastewater Line
- 8" and Smaller Force Main
- 10" and Larger Force Main
- Highway
- Road
- Railroad
- Stream
- Lake
- Parcel
- Weatherford City Limit
- Weatherford ETJ Boundary
- Other City Limit



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 User Name: CJC



Wastewater generated by the City of Willow Park will flow by gravity through the 12-inch wastewater line that currently serves the City of Hudson Oaks. The 12-inch wastewater line conveys flow to Lift Station #20, which is located along Center Point Road. Lift Station #20 is a duplex lift station with a firm capacity of 0.5 MGD. Lift Station #20 pumps wastewater through an 8-inch force main to a discharge manhole located at the intersection of the I-20 frontage road and Atwood Court. The discharge of the force main flows through an 8-inch gravity main to a 12-inch gravity main that discharges into Lift Station #17. Lift Station #17 is a triplex station that is located at the end of Sherry Trail. The station has slots for three pumps, but currently only two pumps are installed. The firm capacity of Lift Station #17 is 2.02 MGD with only two pumps installed. Lift Station #17 pumps wastewater through a 12-inch force main to the 30-inch influent pipe into the wastewater treatment plant. **Figure 2** highlights the Weatherford collection system infrastructure that will convey Willow Park wastewater flow to the WWTP.

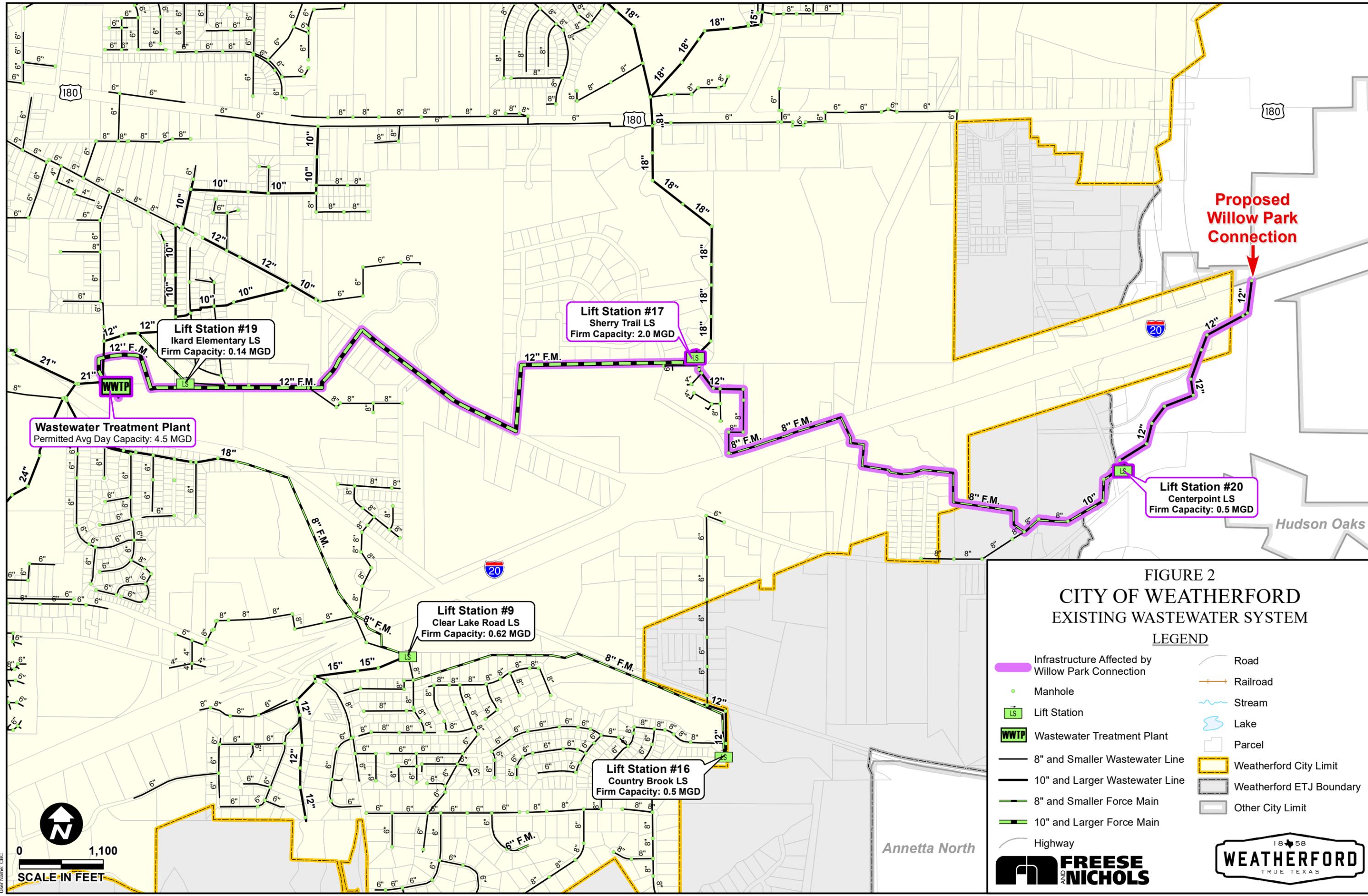


FIGURE 2  
CITY OF WEATHERFORD  
EXISTING WASTEWATER SYSTEM

LEGEND

- Infrastructure Affected by Willow Park Connection
- Manhole
- Lift Station
- Wastewater Treatment Plant
- 8" and Smaller Wastewater Line
- 10" and Larger Wastewater Line
- 8" and Smaller Force Main
- 10" and Larger Force Main
- Highway
- Road
- Railroad
- Stream
- Lake
- Parcel
- Weatherford City Limit
- Weatherford ETJ Boundary
- Other City Limit

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 Job No.: WEA18376  
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### 3.0 Service Area Population and Flow Projections

As part of the 2015 Wastewater Master Plan, FNI and the City developed population and wastewater flow projections for the 2015, 2020, 2025, and Buildout planning periods. It was determined that the 2020 planning period will serve as the base year for the Willow Park wastewater analysis. **Table 1** presents the projected 2020, 2030, and buildout planning period population and non-residential acreage projections for the City of Weatherford and City of Hudson Oaks. The population projections for the City of Hudson Oaks were provided by the Texas Water Development Board (TWDB) as part of the Regional Water Plan and are consistent with the 2015 Wastewater Master Plan projections. However, only a portion of the population within the City of Hudson Oaks is served by the City of Weatherford wastewater collection system since many residents are served by private septic systems. The current wholesale wastewater service contract between Weatherford and Hudson Oaks stipulates an average day flow of 0.1 MGD and a peak flow of 0.45 MGD to be reserved for Hudson Oaks.

**Table 1: Projected Population and Non-Residential Acreage**

Year	Weatherford Population Served	Weatherford Non-Residential Acreage (Acres)	Hudson Oaks Population <sup>1</sup>
2020	29,834	1,782	2,673
2030	38,190	2,281	3,684
Buildout	143,927	6,435	4,808

<sup>1</sup> Population for the entire City of Hudson Oaks. A portion of the City of Hudson Oaks is served by septic systems and does not convey flow to the Weatherford wastewater collection system.

The wastewater master plan utilized historical wastewater treatment plant flow data along with data from flow meters installed in the collection system to determine the design per capita flow rate (gpcd) and the non-residential per acre flow rates (gpac). The per capita flow rate and non-residential per acre flow rate used for all existing customers were 55 gpcd and 550 gpac, respectively. All future growth was assigned a per capita flow rate of 65 gpcd or a per acre flow rate of 550 gpac. **Table 2** presents the projected wastewater flow for the 2020, 2030, and buildout planning period for the City of Weatherford.

**Table 2: Weatherford Wastewater Flow Projections**

Year	Hudson Oaks		Weatherford		Service Area Total	
	Average Flow (MGD)	Peak Wet Weather Flow (MGD)	Average Flow (MGD)	Peak Wet Weather Flow (MGD)	Average Flow (MGD)	Peak Wet Weather Flow (MGD)
2020	0.07	0.32	2.67	13.35	2.74	13.67
2030	0.10	0.45	3.42	15.38	3.52	15.83
2070	0.22	0.99	12.64	50.56	12.86	51.55



The City of Willow Park provided wastewater flow data that included historical wastewater flows from 2010 through 2016 as well as projections for 2017 through 2050. **Table 3** is a summary of the historical and projected average daily and peak wet weather flows from the City of Willow Park. The City of Willow Park utilized a flow rate of 300 gallons per connection per day flow rate for projecting average daily flows. The flow per connection methodology used by Willow Park is different than the per capita and per acre methodology used by Weatherford, but the resulting flow projections are similar in magnitude to the expected values using the per capita methodology. The highest flow rate measured in the historical data in **Table 3** was 347 gallons per connection per day in 2015. However, the 2015 rainfall total was the highest on record dating back to 1899 for the North Texas area and is significantly greater than the next highest total of 313 gallons per connection per day. Therefore, FNI utilized the 2014 observed gallons per connection per day flow rate of 313 to project the future average day wastewater flow. The peak wet weather flow for the City of Willow Park was determined by applying a 4.5 peaking factor. This is consistent with what was used for the City of Hudson Oaks and is stated in the wholesale contract.

**Table 3: Willow Park Historical and Projected Wastewater Flow**

Year	Connections	Total Annual Flow (MG/Yr)	Average flow per Connection (gpd/conn)	Average Flow (MGD)	Peak Wet Weather Flow (MGD)
2010	480	44.90	256	0.12	-
2011	504	33.58	183	0.09	-
2012	555	51.83	256	0.14	-
2013	615	57.47	256	0.16	-
2014	675	77.20	313	0.21	-
2015	720	91.08	347	0.25	-
2016	897	77.20	236	0.21	-
2017	996	-	313	0.31	1.40
2018	1,045	-	313	0.33	1.49
2019	1,219	-	313	0.38	1.71
<b>2020</b>	<b>1,404</b>	-	<b>313</b>	<b>0.44</b>	<b>1.98</b>
2025	1,918	-	313	0.60	2.70
<b>2030</b>	<b>2,156</b>	-	<b>313</b>	<b>0.68</b>	<b>3.06</b>
2035	2,744	-	313	0.86	3.87
2040	3,333	-	313	1.04	4.68
2045	4,147	-	313	1.30	5.85
2050	5,161	-	313	1.62	7.29
<b>2070</b>	<b>6,351</b>	-	<b>313</b>	<b>1.99</b>	<b>8.96</b>



## 4.0 Hydraulic Analysis

To plan for future growth, it is important to know how the system performs under existing peak wet weather flow conditions. FNI utilized the hydraulic wastewater model that was developed for the 2015 Weatherford Wastewater Master Plan using the H2OMap Sewer software by Innovyze. FNI updated the hydraulic model to include current facility information for the lift stations based on the lift station information provided by the City on June 4, 2018. FNI performed the existing system analysis using the 2020 planning period flows on the existing wastewater system. The model was first analyzed without the Willow Park flow through the Weatherford collection system to determine the baseline flows. Then the 2020 Willow Park wastewater flow was allocated to the manhole along I-20, shown on **Figure 2**, to determine capacity deficiencies due to the increase in flow. Similar analyses were performed for the 2030 planning period with and without the Willow Park wastewater flow. The following sections summarize the system analyses as well as necessary improvements for each planning period. The analyses focus only on the infrastructure impacted by flow from the City of Willow Park. The 2015 Wastewater Master Plan provides an analysis of the entire Weatherford collection system.

### 4.1 Existing System Analysis

FNI utilized the 2020 master plan model scenario as the baseline for the Willow Park customer service analysis. The infrastructure was analyzed without the additional flow from the City of Willow Park to determine if any existing capacity deficiencies are present. **Figure 3** displays a color-coded map that illustrates the surcharge state of modeled lines and manholes under the projected peak wet weather conditions for the 2020 planning period. The red wastewater lines indicate surcharging due to insufficient capacity. Green lines indicate lines with sufficient capacity to convey flow without surcharging. Modeled overflow locations as a result of projected peak wet weather flows are shown as red circles on the map. The yellow circles represent locations where the hydraulic grade line (HGL) is within 3 feet of the given manhole rim. **Table 4** summarizes the existing system average day and peak wet weather flows to Lift Station #20 and Lift Station #17 without flow from Willow Park. No capacity restrictions were identified in the wastewater lines during the existing system analysis without the Willow Park wastewater flow. However, the peak flow at Lift Station #17 is greater than the firm pumping capacity. The lift station was designed as a triplex pump station, but currently only contains two pumps. The addition of a third pump will increase the firm pumping capacity to convey the existing peak wet weather flow.



**Table 4: Existing System Lift Station Flows**

Year	Lift Station #20			Lift Station #17		
	Firm Capacity (MGD)	Average Day (MGD)	Peak Wet Weather (MGD)	Firm Capacity (MGD)	Average Day (MGD)	Peak Wet Weather (MGD)
2020	0.50	0.10*	0.45*	2.00	0.59*	<b>2.91*</b>

\* The 2020 Hudson Oaks flow is based on the contracted average day flow of 0.10 MGD and peak wet weather flow of 0.45 MGD.

#### 4.2 Existing System Analysis with Willow Park Flow

Consistent with the baseline analysis, the 2020 model scenario was used to evaluate the existing system with the additional projected peak wet weather flow from the City of Willow Park. **Figure 4** presents the results of the existing system analysis with the additional Willow Park flow. **Table 5** summarizes the existing system average day and peak wet weather flows to Lift Station #20 and Lift Station #17 with flow from Willow Park. The results indicate that Lift Station #20 no longer has sufficient pumping capacity to convey the peak flow from Hudson Oaks and Willow Park. The firm capacity of Lift Station #20 is 0.5 MGD, but the total peak wet weather flow projection from the City of Willow Park and Hudson Oaks is 2.31 MGD. If Hudson Oaks' contracted wastewater flow amount is taken into consideration, the total flow is 2.43 MGD. Given that Lift Station #20 has a firm capacity of only 0.5 MGD, the flow rate through the 8-inch force main will be limited to 0.5 MGD. However, for this analysis the system was assumed to convey the total peak flow through the impacted infrastructure to determine the impact on the system if there were no pumping capacity deficiencies in Lift Station #17 and Lift Station #20. Therefore, if Lift Station #20 is able to convey the 2.31 MGD/2.43 MGD peak wet weather flow from Willow Park and Hudson Oaks, the 8-inch force main will be subjected to velocities greater than 10 feet per second as well as high pressures along the pipe. The additional flow from Willow Park in the gravity main downstream of Lift Station #20 will exceed the capacity of the line. The projected peak flow will also exceed the 2.0 MGD firm pumping capacity of Lift Station #20, as well as the discharge force main. To serve flow from Willow Park immediately upon connection to the Weatherford collection system, a lift station expansion is required at Lift Station #20 that necessitates expansion of all infrastructure downstream including the 8-inch force main, the gravity main between I-20 and Lift Station #17, and Lift Station #17 and the corresponding 12-inch force main. The overflow upstream of Lift Station #20 in Figure 4 is due to the capacity of the lift station and its inability to convey the additional peak flow from the City of Willow Park. The upstream 12-inch gravity line has capacity to convey the additional flow.



**Table 5: Existing System Lift Station Flows with Willow Park**

Year	Lift Station #20			Lift Station #17		
	Firm Capacity (MGD)	Average Day (MGD)	Peak Wet Weather (MGD)	Firm Capacity (MGD)	Average Day (MGD)	Peak Wet Weather (MGD)
2020	0.50	0.54*	2.43*	2.00	1.03*	4.89*

\* The 2020 Hudson Oaks flow is based on the contracted average day flow of 0.10 MGD and peak wet weather flow of 0.45 MGD.

### 4.3 2030 Future System Analysis

The 2030 planning period wastewater flow projections for Weatherford and Hudson Oaks were applied to the existing wastewater model to identify potential capacity deficiencies in the Weatherford system. FNI utilized 2030 flows consistent with the projected flows in **Table 2** for the analysis without flow from the City of Willow Park. **Table 6** summarizes the 2030 average day and peak wet weather flows to Lift Station #20 and Lift Station #17 without flow from Willow Park. Model results indicate that Lift Station #17 does not have sufficient pumping capacity to convey the flow to the WWTP. The lift station was designed as a triplex pump station, but currently only contains two pumps. The addition of a third pump will increase the firm pumping capacity to convey the projected 2030 peak wet weather flow. **Figure 5** presents the results of the 2030 wastewater system analysis without Willow Park.

**Table 6: 2030 Lift Station Flows**

Year	Lift Station #20			Lift Station #17		
	Firm Capacity (MGD)	Average Day (MGD)	Peak Wet Weather (MGD)	Firm Capacity (MGD)	Average Day (MGD)	Peak Wet Weather (MGD)
2030	0.50	0.10	0.45	2.00	0.80	3.59

### 4.4 2030 Future System Analysis with Willow Park Flow

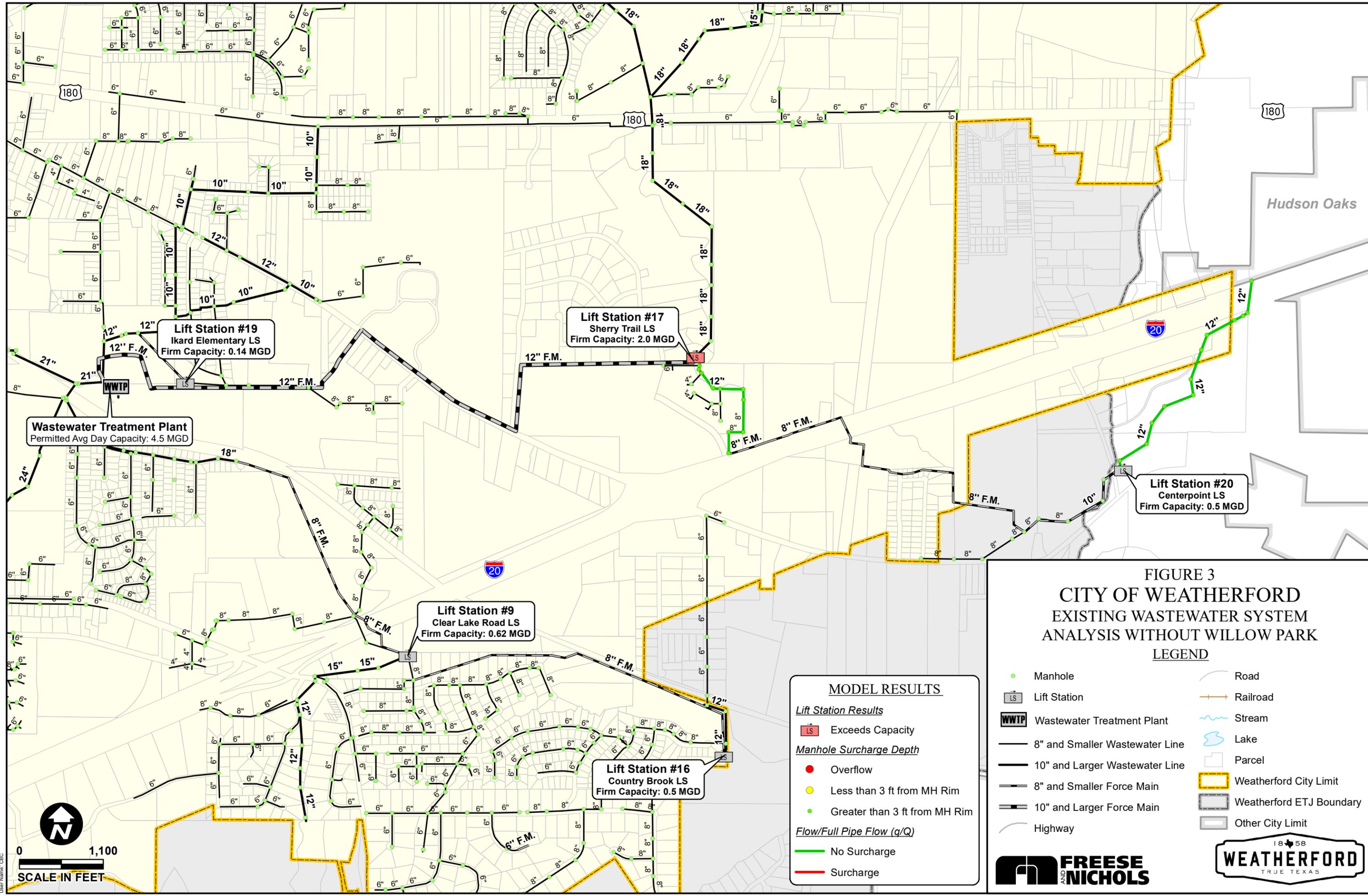
The peak wet weather flow for the City of Willow Park was then applied in addition to the flow from the 2030 Future System Analysis. FNI utilized the Willow Park 2030 peak wet weather flow of 3.04 MGD from **Table 3**. The analysis produced similar results to the existing system analysis with Willow Park flow. All flow was assumed to be conveyed through the wastewater collection infrastructure, regardless of the firm pumping capacity at Lift Station #17 and #20, to determine the impact of the projected peak wet weather flow. **Table 7** summarizes the 2030 average day and peak wet weather flows to Lift Station #20 and Lift Station #17 with flow from Willow Park. In addition to capacity



deficiencies from the existing system analysis, the 12-inch wastewater line that conveys flow from the Hudson Oaks connection point to Lift Station #17 was identified to be under capacity due to the additional flow from Willow Park in the 2030 planning period. **Figure 6** presents the results of the 2030 wastewater system analysis.

**Table 7: 2030 Lift Station Flows with Willow Park**

Year	Lift Station #20			Lift Station #17		
	Firm Capacity (MGD)	Average Day (MGD)	Peak Wet Weather (MGD)	Firm Capacity (MGD)	Average Day (MGD)	Peak Wet Weather (MGD)
2030	0.50	<b>0.78</b>	<b>3.49</b>	2.00	1.48	<b>6.63</b>



**Wastewater Treatment Plant**  
Permitted Avg Day Capacity: 4.5 MGD

**Lift Station #19**  
Ikard Elementary LS  
Firm Capacity: 0.14 MGD

**Lift Station #17**  
Sherry Trail LS  
Firm Capacity: 2.0 MGD

**Lift Station #20**  
Centerpoint LS  
Firm Capacity: 0.5 MGD

**Lift Station #9**  
Clear Lake Road LS  
Firm Capacity: 0.62 MGD

**Lift Station #16**  
Country Brook LS  
Firm Capacity: 0.5 MGD

**FIGURE 3**  
**CITY OF WEATHERFORD**  
**EXISTING WASTEWATER SYSTEM**  
**ANALYSIS WITHOUT WILLOW PARK**  
**LEGEND**

**MODEL RESULTS**

*Lift Station Results*

- LS Exceeds Capacity

*Manhole Surcharge Depth*

- Overflow
- Less than 3 ft from MH Rim
- Greater than 3 ft from MH Rim

*Flow/Full Pipe Flow (q/Q)*

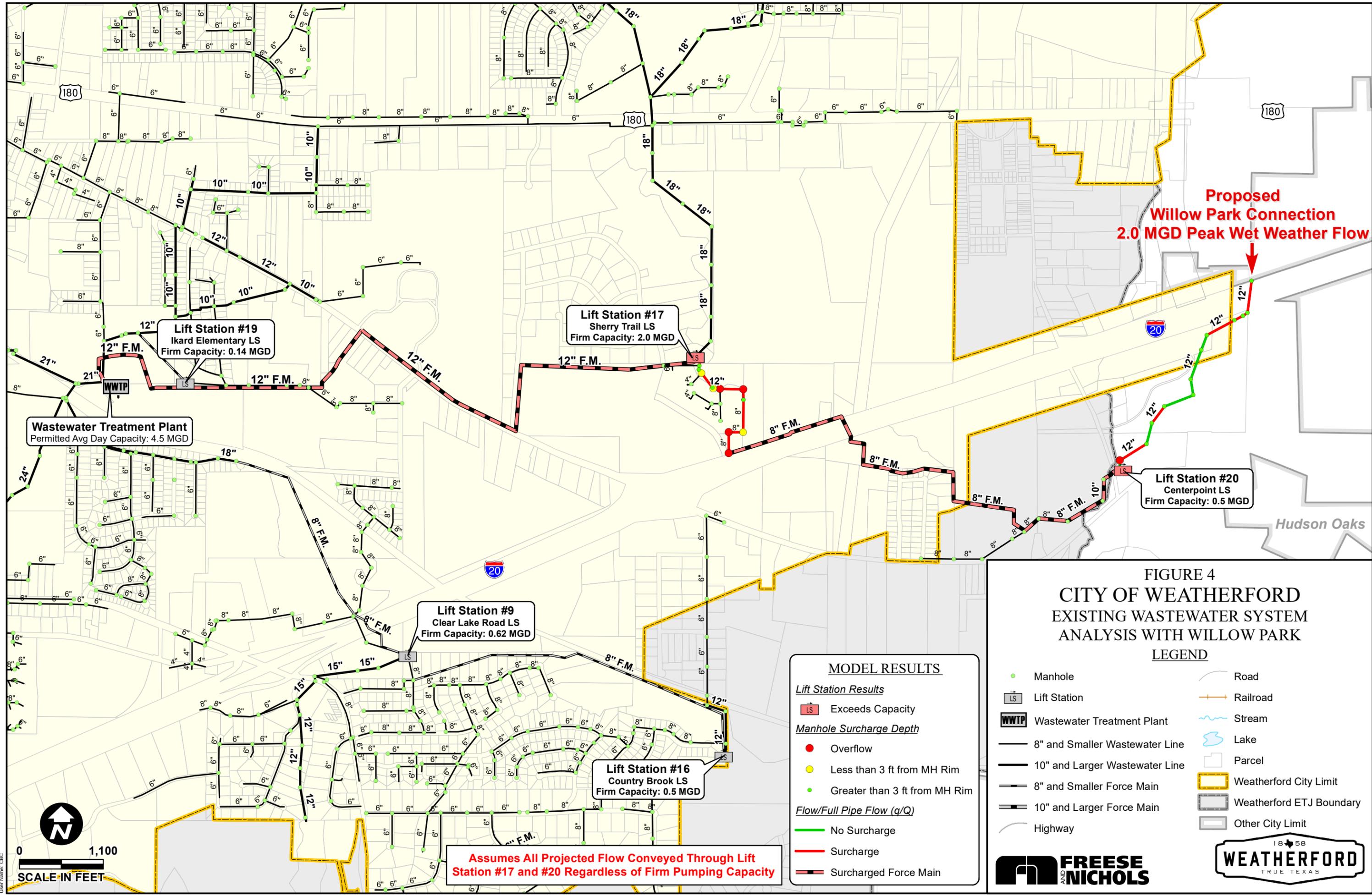
- No Surcharge
- Surcharge

- Manhole
- LS Lift Station
- WWTP Wastewater Treatment Plant
- 8" and Smaller Wastewater Line
- 10" and Larger Wastewater Line
- 8" and Smaller Force Main
- 10" and Larger Force Main
- Highway
- Road
- Railroad
- Stream
- Lake
- Parcel
- Weatherford City Limit
- Weatherford ETJ Boundary
- Other City Limit

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**Proposed Willow Park Connection  
2.0 MGD Peak Wet Weather Flow**

**Lift Station #17  
Sherry Trail LS  
Firm Capacity: 2.0 MGD**

**Lift Station #19  
Ikard Elementary LS  
Firm Capacity: 0.14 MGD**

**Wastewater Treatment Plant  
Permitted Avg Day Capacity: 4.5 MGD**

**Lift Station #20  
Centerpoint LS  
Firm Capacity: 0.5 MGD**

**Lift Station #9  
Clear Lake Road LS  
Firm Capacity: 0.62 MGD**

**Lift Station #16  
Country Brook LS  
Firm Capacity: 0.5 MGD**

**FIGURE 4  
CITY OF WEATHERFORD  
EXISTING WASTEWATER SYSTEM  
ANALYSIS WITH WILLOW PARK  
LEGEND**

**MODEL RESULTS**

*Lift Station Results*

- LS Exceeds Capacity

*Manhole Surcharge Depth*

- Overflow
- Less than 3 ft from MH Rim
- Greater than 3 ft from MH Rim

*Flow/Full Pipe Flow (q/Q)*

- No Surcharge
- Surcharge
- Surcharged Force Main

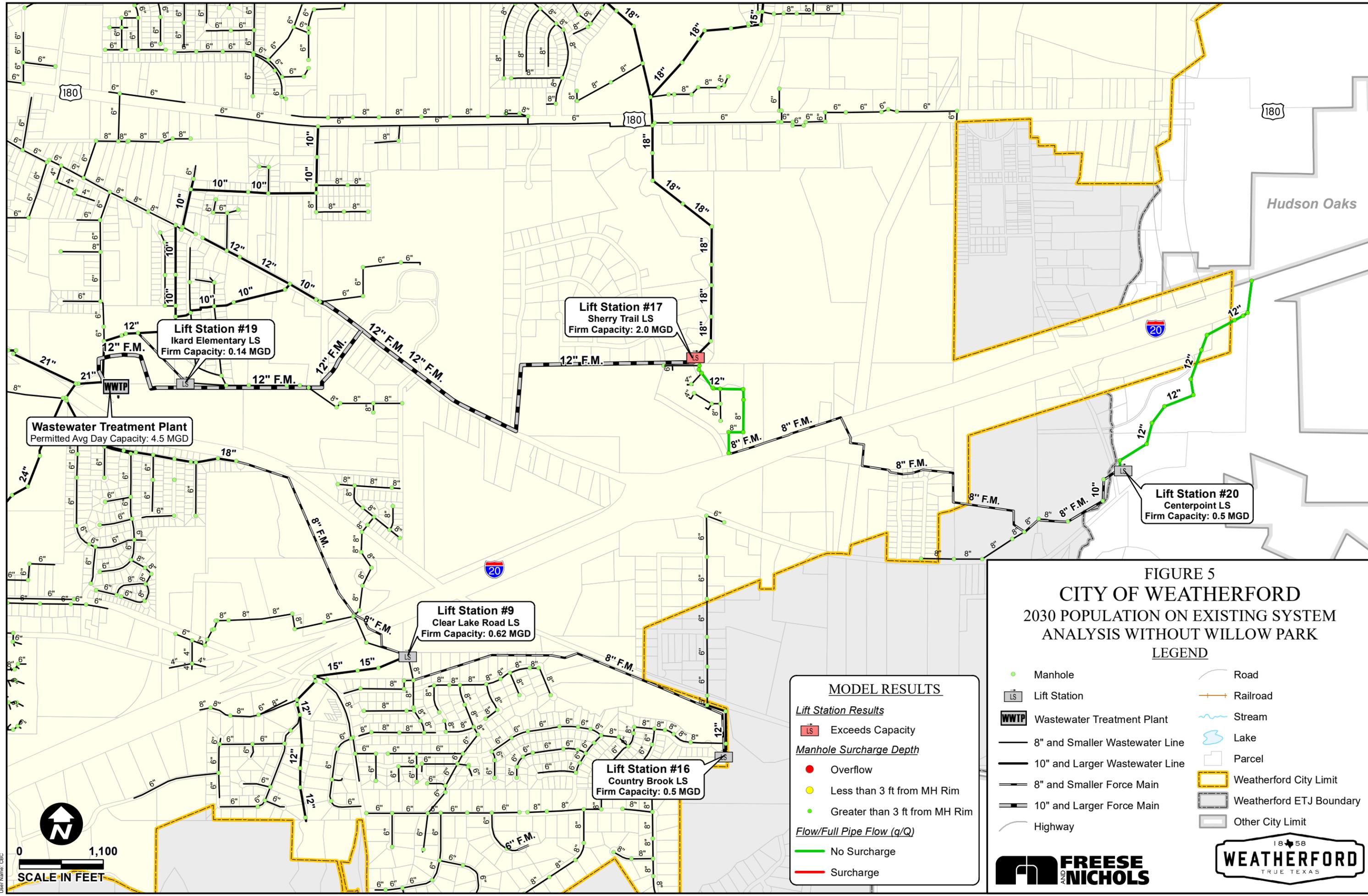
- Manhole
- LS Lift Station
- WWTP Wastewater Treatment Plant
- 8" and Smaller Wastewater Line
- 10" and Larger Wastewater Line
- 8" and Smaller Force Main
- 10" and Larger Force Main
- Highway
- Road
- Railroad
- Stream
- Lake
- Parcel
- Weatherford City Limit
- Weatherford ETJ Boundary
- Other City Limit

**Assumes All Projected Flow Conveyed Through Lift Station #17 and #20 Regardless of Firm Pumping Capacity**

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**FIGURE 5**  
**CITY OF WEATHERFORD**  
 2030 POPULATION ON EXISTING SYSTEM  
 ANALYSIS WITHOUT WILLOW PARK

**LEGEND**

- Manhole
- LS Lift Station
- WWTP Wastewater Treatment Plant
- 8" and Smaller Wastewater Line
- 10" and Larger Wastewater Line
- 8" and Smaller Force Main
- 10" and Larger Force Main
- Highway
- Road
- Railroad
- Stream
- Lake
- Parcel
- Weatherford City Limit
- Weatherford ETJ Boundary
- Other City Limit

**MODEL RESULTS**

*Lift Station Results*

- LS Exceeds Capacity

*Manhole Surcharge Depth*

- Overflow
- Less than 3 ft from MH Rim
- Greater than 3 ft from MH Rim

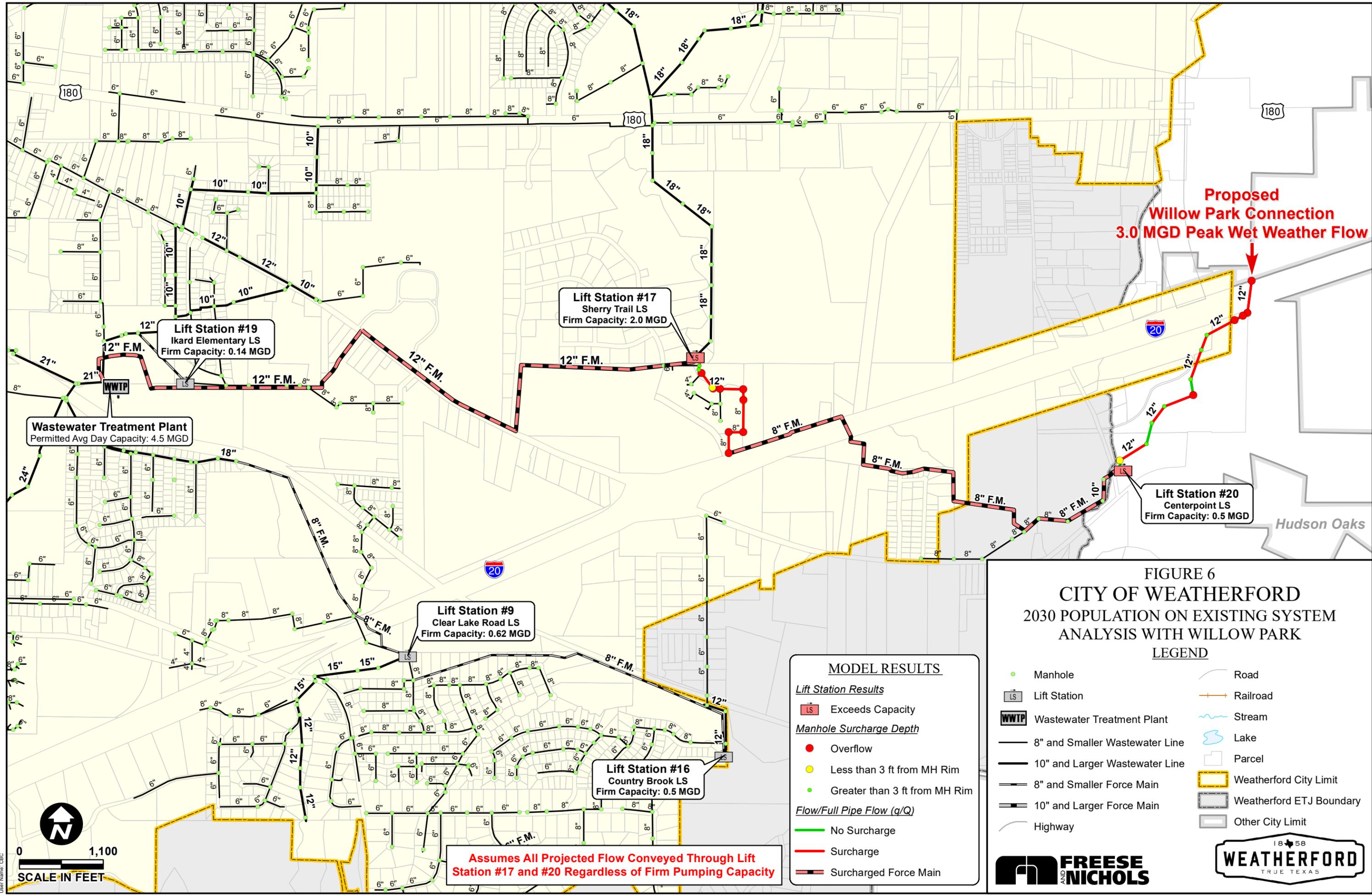
*Flow/Full Pipe Flow (q/Q)*

- No Surcharge
- Surcharge

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**Proposed Willow Park Connection  
3.0 MGD Peak Wet Weather Flow**

**Lift Station #17  
Sherry Trail LS  
Firm Capacity: 2.0 MGD**

**Lift Station #19  
Ikard Elementary LS  
Firm Capacity: 0.14 MGD**

**Wastewater Treatment Plant  
Permitted Avg Day Capacity: 4.5 MGD**

**Lift Station #20  
Centerpoint LS  
Firm Capacity: 0.5 MGD**

**Lift Station #9  
Clear Lake Road LS  
Firm Capacity: 0.62 MGD**

**Lift Station #16  
Country Brook LS  
Firm Capacity: 0.5 MGD**

**Assumes All Projected Flow Conveyed Through Lift Station #17 and #20 Regardless of Firm Pumping Capacity**

**FIGURE 6  
CITY OF WEATHERFORD  
2030 POPULATION ON EXISTING SYSTEM  
ANALYSIS WITH WILLOW PARK**

**LEGEND**

Manhole	Road
Lift Station	Railroad
Wastewater Treatment Plant	Stream
8" and Smaller Wastewater Line	Lake
10" and Larger Wastewater Line	Parcel
8" and Smaller Force Main	Weatherford City Limit
10" and Larger Force Main	Weatherford ETJ Boundary
Overflow	Other City Limit
Less than 3 ft from MH Rim	
Greater than 3 ft from MH Rim	
No Surge	
Surge	
Surcharged Force Main	
Surcharged Force Main	

**MODEL RESULTS**

*Lift Station Results*

Exceeds Capacity

*Manhole Surge Depth*

Overflow

Less than 3 ft from MH Rim

Greater than 3 ft from MH Rim

*Flow/Full Pipe Flow (q/Q)*

No Surge

Surge

Surcharged Force Main



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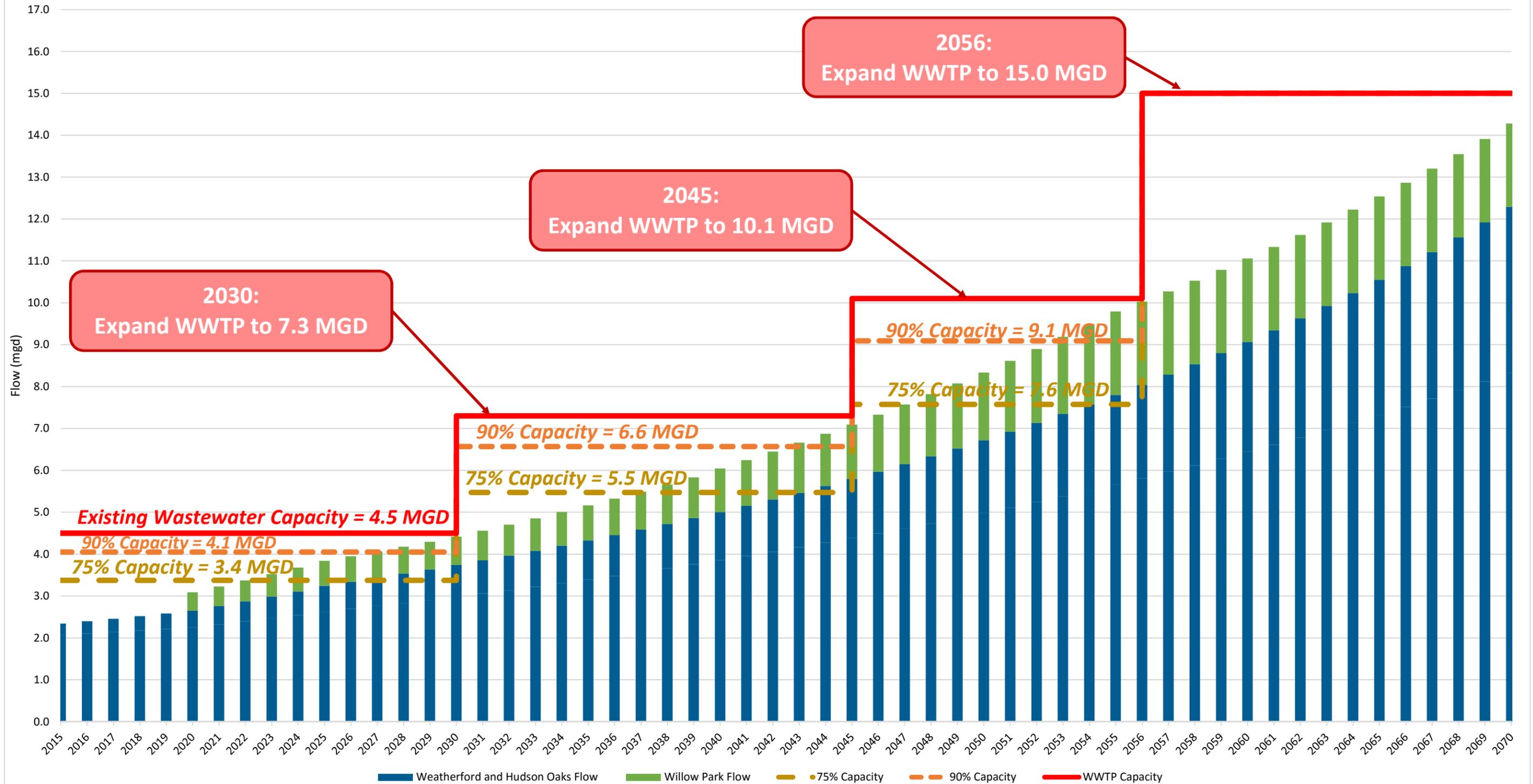


## 5.0 Wastewater Treatment Plant Capacity Analysis

Based on the population and flow projections, the 2015 Wastewater Master Plan identified that additional treatment capacity is needed in the future without the addition of flow from Willow Park. The existing WWTP capacity is 4.5 MGD. Based on the current permitted capacity, no additional equipment or capacity is necessary at the WWTP to treat the projected flow from the City of Willow Park. However, the additional flow from the City of Willow Park results in a required expansion by the 2030 planning period; 2 years before the first WWTP expansion identified in the 2015 Master Plan. **Figure 7** shows the current permitted AADF, along with 75% and 90% of permitted AADF capacity. **Figure 7** also shows the projected dates for triggers of the TCEQ “75/90 rule” (Title 30, TAC 305.126(a)). The 75/90 rule states that when a plant exceeds 75% of its permitted annual average flow (3.4 MGD for Weatherford) for three consecutive months, the facility must begin planning for its next WWTP expansion. In addition, the rule states that when a facility exceeds 90% of its permitted annual average flow (4.1 MGD), the facility must be in construction of its next expansion.



Figure 7  
Wastewater Treatment Plant Expansion Planning



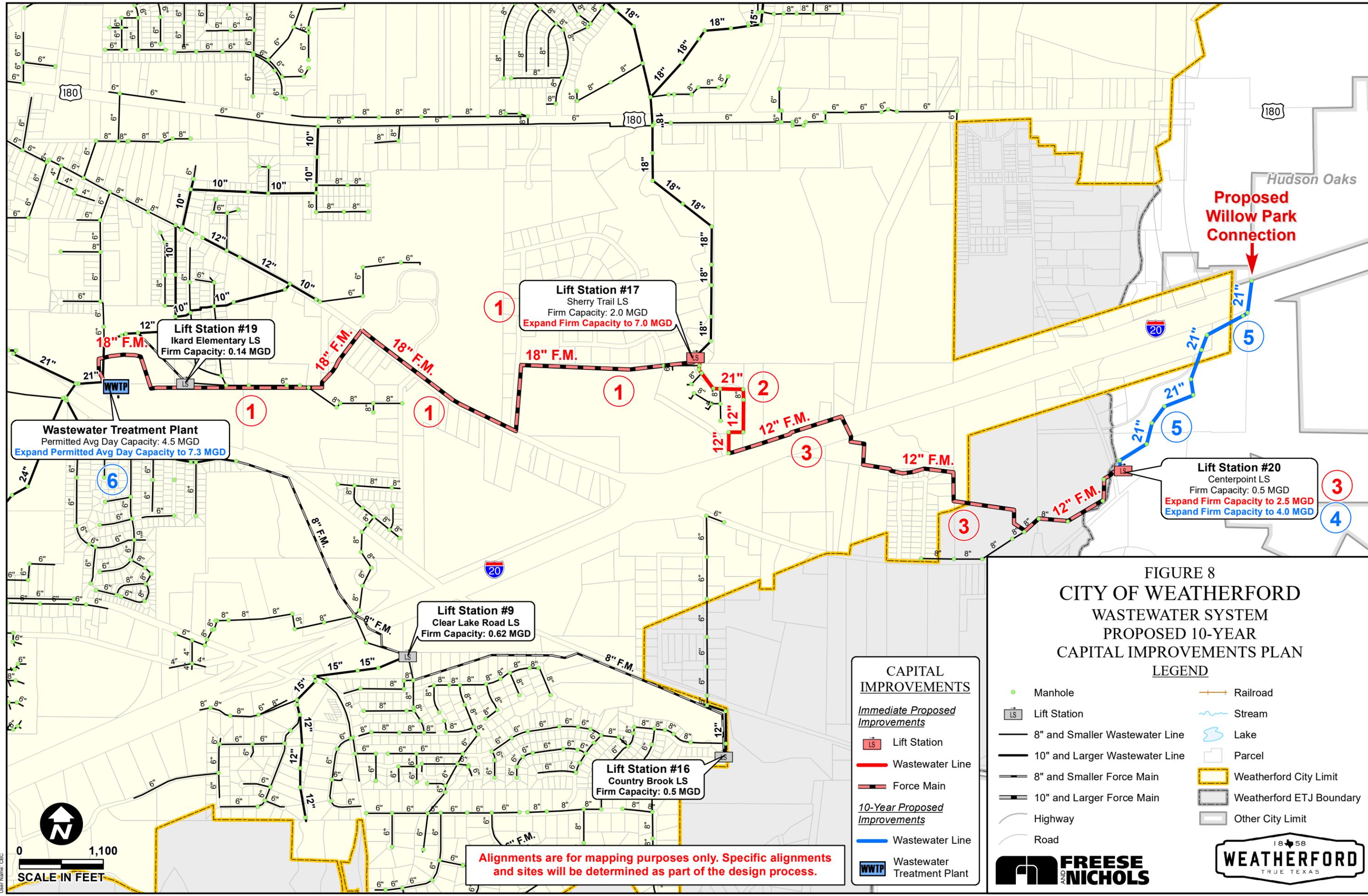


## 6.0 Capital Improvement Plan

The following section outlines the improvements required to serve the City of Willow Park immediately upon connection in 2020 and through the 2030 planning period, as well as the differences between improvements necessary for each planning period with and without Willow Park flows. Specific alignments and sites will be determined as part of the design process. Locations shown for recommended improvements were investigated for feasibility but generalized for hydraulic analyses. It is recommended that these projects be constructed generally in the order listed; however, the actual timing of the Willow Park connection may make it necessary to construct some projects sooner or later than anticipated. Capital costs for each planning period were calculated for the major wastewater facilities and lines and do not include individual service connections or subdivision lines. The costs are provided as estimates based on previous similar engineering experience in 2018 dollars and include an allowance for engineering, surveying, and contingencies. Detailed descriptions of the projects and associated costs for the three planning periods are included in **Appendix A**. Only the capacity projects required to convey the flow from Willow Park are discussed in this section.

### 6.1 Immediate Improvements

The City of Willow Park is an established, yet still growing City. The 2020 projected peak wet weather flow of 2.0 MGD from Willow Park represents a significant increase in flow through Lift Station #17 and Lift Station #20 and the corresponding force mains. Installation of a third pump at the Lift Station #17 is the only project necessary to serve the 2020 Weatherford and Hudson Oaks peak wet weather flows. However, with the addition of Willow Park flow there are immediate capacity deficiencies in the collection system. The peak flow of 2.0 MGD from Willow Park immediately exceeds the 0.5 MGD firm capacity of Lift Station #20 and its corresponding force main. An increase in the firm pumping capacity at Lift Station #20 necessitates an increase in the conveyance capacity of all infrastructure downstream including the 8-inch force main from Lift Station #20, the 8-inch and 12-inch gravity main that the force main discharges to, the firm pumping capacity of Lift Station #17 and its corresponding 12-inch force main, and the influent wastewater line to the WWTP. The 2020 flow with Willow Park to Lift Station #17 exceeds the 2.0 MGD firm capacity, as well as the anticipated capacity of 4.0 MGD if a third, similar sized pump was to be added. Therefore, it is not feasible to phase an improvement of Lift Station #17 by adding an additional pump, unless the flow to the station is less than anticipated. **Table 8** is a comparison of the capital improvements necessary for the Weatherford wastewater collection system with and without the additional flow from the City of Willow Park. Projects in red on **Figure 8** identify the immediate capital improvements necessary to serve the City of Willow Park upon connection to the Weatherford wastewater collection System.



**Wastewater Treatment Plant**  
 Permitted Avg Day Capacity: 4.5 MGD  
 Expand Permitted Avg Day Capacity to 7.3 MGD

**Lift Station #19**  
 Ikard Elementary LS  
 Firm Capacity: 0.14 MGD

**Lift Station #17**  
 Sherry Trail LS  
 Firm Capacity: 2.0 MGD  
 Expand Firm Capacity to 7.0 MGD

**Lift Station #9**  
 Clear Lake Road LS  
 Firm Capacity: 0.62 MGD

**Lift Station #16**  
 Country Brook LS  
 Firm Capacity: 0.5 MGD

**Lift Station #20**  
 Centerpoint LS  
 Firm Capacity: 0.5 MGD  
 Expand Firm Capacity to 2.5 MGD  
 Expand Firm Capacity to 4.0 MGD

**Alignments are for mapping purposes only. Specific alignments and sites will be determined as part of the design process.**

**FIGURE 8**  
**CITY OF WEATHERFORD**  
**WASTEWATER SYSTEM**  
**PROPOSED 10-YEAR**  
**CAPITAL IMPROVEMENTS PLAN**  
**LEGEND**

**CAPITAL IMPROVEMENTS**

*Immediate Proposed Improvements*

- Lift Station
- Wastewater Line
- Force Main

*10-Year Proposed Improvements*

- Wastewater Line
- Wastewater Treatment Plant

- Manhole
- Lift Station
- 8" and Smaller Wastewater Line
- 10" and Larger Wastewater Line
- 8" and Smaller Force Main
- 10" and Larger Force Main
- Highway
- Road
- Railroad
- Stream
- Lake
- Parcel
- Weatherford City Limit
- Weatherford ETJ Boundary
- Other City Limit

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**Table 8: Comparison of Immediate Capacity Improvements**

Infrastructure	Recommended Improvements			
	Without Willow Park Connection		With Willow Park Connection	
	Year Needed	Improvement	Year Needed	Improvement
Gravity Main to Lift Station #20	-	-	-	-
Lift Station #20 Firm Capacity	-	-	Immediate	2.5 MGD
Lift Station #20 Force Main	-	-	Immediate	14-inch
Gravity Main to Lift Station #17	-	-	Immediate	12/21-inch
Lift Station #17 Capacity	2020	4.0 MGD*	Immediate	7.0 MGD
Lift Station #17 Force Main	-	-	Immediate	18-inch
WWTP Capacity	-	-	-	-

\*Lift Station #17 can be expanded to 4.0 MGD by adding a third pump into the empty slot.

### 6.1.1 Recommended Immediate Improvement Alternatives

The following is a summary of the improvements necessary to serve the City of Willow Park upon connection to the Weatherford collection system as identified in red on **Figure 8**. **Table 9** is a summary of the estimated capital improvement costs for the infrastructure improvements required prior to conveying flow from the City of Willow Park. The City of Weatherford does not require additional capacity beyond the addition of a third pump at Lift Station #17. The current infrastructure has capacity and remaining useful life to continue serving Weatherford and Hudson Oaks. However, the City of Weatherford will benefit from and utilize capacity in the new infrastructure. A cost breakdown between the City of Weatherford and the City of Willow Park has been provided based on the capacity utilization of each project in the 2030 planning period.

**Table 9: Immediate Capital Improvement Costs**

Project Number	Project Name	Total Cost	Weatherford Cost	Willow Park Cost
<b>Short Term</b>				
1	Expansion of Lift Station #17 to 7.0 MGD and 18-inch Force Main	\$ 10,821,500	\$ 5,951,825	\$ 4,869,675
2	12-inch and 21-inch Gravity Main upstream of Lift Station 17	\$ 517,500	\$ 103,500	\$ 414,000
3	Expansion of Lift Station #20 to 2.5 MGD and 12-inch Force Main	\$ 5,546,400	\$ 1,109,280	\$ 4,437,120
<b>Immediate CIP Total</b>		<b>\$ 16,885,400</b>	<b>\$ 7,164,605</b>	<b>\$ 9,720,795</b>



***Project 1: Expansion of Lift Station #17 to 7.0 MGD and 18-inch Force Main***

This project includes the expansion of the Lift Station #17 from a firm capacity of 2.02 MGD to 7.0 MGD. In the 2020 planning period, the flow conveyed to the lift station will exceed the capacity of the lift station due to the additional 1.98 MGD from the City of Willow Park. Therefore, the expansion will provide additional capacity for future growth in Weatherford, Hudson Oaks, and Willow Park through the 2030 planning period. Due to the increase in the firm pumping capacity, it is necessary to replace the existing 12-inch force main with an 18-inch force main. The sizing of the force main is based on the TCEQ requirements for a pump station with three or more pumps to maintain a velocity of 2 feet per second with a single pump running as well as reaching a flushing velocity of 5 feet per second at least once a day.

***Project 2: 12-inch and 21-inch Gravity Main Serving Lift Station 17***

This project consists of a 12-inch and 21-inch line downstream of the existing 8-inch force main discharge location from Lift Station #20. This project replaces the existing 8-inch and 12-inch interceptor that conveys flow to Lift Station #17. The additional flow from Willow Park will require the expansion of Lift Station #20 to convey flow to the WWTP. The current pipe diameter is sized to convey the flow from the existing 0.5 MGD Lift Station #20 and its corresponding force main therefore, hydraulic analysis indicated surcharging in this line once the capacity of Lift Station #20 was increased. The increased capacity this project provides will alleviate surcharging and potential overflows.

***Project 3: Expansion of Lift Station #20 to 2.5 MGD and 12-inch Force Main***

This project includes the expansion of Lift Station #20 from a firm capacity of 0.50 MGD to 2.5 MGD with an ultimate 10-year capacity of 4.0 MGD. In the 2020 planning period, the flow conveyed to the lift station will exceed the capacity of the lift station due to the additional 1.98 MGD from the City of Willow Park. Therefore, the expansion will provide additional capacity for future growth in Weatherford, Hudson Oaks, and Willow Park. Consideration for adding an additional pump should be taken to expand the capacity to 4.0 MGD by 2030. Due to the increase in the firm pumping capacity, it is necessary to replace the existing 8-inch force main with a 12-inch force main. The sizing of the force main is based on the TCEQ requirements for a pump station with three or more pumps to maintain a velocity of 2 feet per second with a single pump running as well as reaching a flushing velocity of 5 feet per second at least once a day.



## 6.2 10-year Capital Improvement Plan

The following recommended improvements will provide the required capacity and reliability to convey projected peak wet weather wastewater flows for the Cities of Weatherford, Hudson Oaks, and Willow Park for the 2030 planning period. The 10-year CIP projects are identified in blue on **Figure 8**. **Table 10** is a comparison of the improvement projects necessary for the infrastructure identified in **Figure 2** with and without the additional flow from the City of Willow Park for the 2030 planning period.

**Table 10: Comparison of 10-year Capacity Improvements**

Infrastructure	Recommended Improvements			
	Without Willow Park Connection		With Willow Park Connection	
	Year Needed	Improvement	Year Needed	Improvement
Gravity Main to Lift Station #20	-	-	2030	21-inch
Lift Station #20 Firm Capacity	-	-	2030	4.0 MGD
Lift Station #20 Force Main	-	-	Immediate	12-inch
Gravity Main to Lift Station #17	-	-	Immediate	12/21-inch
Lift Station #17 Capacity	2020	4.0 MGD*	Immediate	7.0 MGD
Lift Station #17 Force Main	-	-	Immediate	18-inch
WWTP Capacity	-	-	2030	7.3 MGD

\*Lift Station #17 can be expanded to 4.0 MGD by adding a third pump into the empty slot.

### 6.2.1 Recommended 10-year Improvement Alternatives

The following is a summary of the recommended 10-year capacity improvements identified on **Figure 8**. **Table 11** summarizes the costs for the 2030 capital improvement projects. The current infrastructure has capacity and remaining useful life to continue serving Weatherford and Hudson Oaks. However, the City of Weatherford will benefit from and utilize capacity in the new infrastructure. A cost breakdown between the City of Weatherford and the City of Willow Park is provided based on the capacity utilization of each project in the 2030 planning period.

**Table 11: 10-year Capital Improvements Plan Costs**

Project Number	Project Name	Total Cost	Weatherford Cost	Willow Park Cost
<b>10-Year CIP</b>				
4	Additional Pump at Lift Station #20 to Expand Firm Pumping Capacity to 4.0 MGD	\$ 117,900	\$ -	\$ 117,900
5	21-inch Gravity Main Upstream of Lift Station #20	\$ 1,356,400	\$ 135,640	\$ 1,220,760
6	Wastewater Treatment Plant Capacity Expansion to 7.3 MGD	\$ 39,557,700	\$ 31,646,160	\$ 7,911,540
<b>10-Year CIP Total</b>		<b>\$ 41,032,000</b>	<b>\$ 31,781,800</b>	<b>\$ 9,250,200</b>



***Project 4: Additional Pump at Lift Station #20 to Expand Firm Pumping Capacity to 4.0 MGD***

This project includes adding an additional pump(s) at Lift Station #20 to expand the firm pumping capacity to 4.0 MGD to convey the 2030 projected peak flow from Willow Park and Hudson Oaks. Considerations for additional capacity are recommended for Project 4 to allow room for expansion to the Lift Station by adding an additional pump(s).

***Project 5: 21-inch Gravity Main Upstream of Lift Station 20***

This project includes the replacement of the existing 12-inch interceptor that conveys flow from Hudson Oaks to Lift Station #20. In the 2030 planning period, the flow conveyed through the interceptor will exceed the capacity of the line due to the additional 3.04 MGD from the City of Willow Park. The new 21-inch line will provide additional capacity for future growth in Weatherford, Hudson Oaks, and Willow Park. The increased capacity this project provides will alleviate surcharging and potential overflows.

***Project 6: Wastewater Treatment Plant Capacity Expansion to 7.3 MGD***

Based on the wastewater flow projections in Figure 6, the existing 4.5 MGD wastewater treatment plant will be out of compliance with the TCEQ "75/90 rule" (Title 30, TAC 305.126(a)) by the 2030 planning period. The 75/90 rule states that when a plant exceeds 75% of its permitted annual average flow (3.4 MGD for Weatherford) for three consecutive months, the facility must begin planning for its next WWTP expansion. Based on the flow projections, design of the WWTP expansion is required to begin in 2022. In addition, the rule states that when a facility exceeds 90% of its permitted annual average flow (4.1 MGD), the facility must be in construction of its next expansion. The average day flow is projected to exceed 90% of the permitted capacity in 2028.



**APPENDIX A:**  
**Detailed CIP Cost Spreadsheets**









# City of Weatherford



DRAFT Wastewater System Capital Improvement Cost Estimate

January 28, 2019

Construction Project Number: 5

Phase: 2030

Project Name: 21-inch Gravity Main Upstream of Lift Station #20

### Project Description:

This project includes the replacement of the existing 12-inch interceptor that conveys flow from Hudson Oaks to Lift Station #20. In the 2030 planning period, the flow conveyed through the interceptor will exceed the line due to the additional 3.04 MGD from the City of Willow Park. Therefore, the expansion will provide additional capacity for future growth in Weatherford, Hudson Oaks, and Willow Park. The current pipe diameter is sized to convey the flow from the existing Weatherford and Hudson Oaks connections hydraulic analysis indicated surcharging in this line once with the addition of the City of Willow Park. The increased capacity this project provides will alleviate surcharging and potential overflows.

### Project Drivers:

This project provides capacity to convey the proposed additional flow from the City of Willow Park.

### Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	21" Pipe 8- 16 feet deep	3,500	LF	\$ 168	\$ 588,000
2	34" WW Boring and Casing	400	LF	\$ 510	\$ 204,000
3	72" Diameter Manhole	8	EA	\$ 9,000	\$ 72,000
<b>Project Capacity Utilization</b>				<b>SUBTOTAL:</b>	<b>\$ 864,000</b>
	City of Weatherford		Mobilization	5%	\$ 43,200
	10%				
				<b>SUBTOTAL:</b>	<b>\$ 907,200</b>
			CONTINGENCY	30%	\$ 272,200
	City of Willow Park				
	90%				
				<b>SUBTOTAL:</b>	<b>\$ 1,179,400</b>
			ENG/SURVEY	15%	\$ 177,000
				<b>SUBTOTAL:</b>	<b>\$ 1,356,400</b>
				<b>Estimated Project Total:</b>	<b>\$ 1,356,400</b>

