

ORDINANCE NO. 866

(Extension of Temporary Moratorium on Acceptance of Development Applications)

AN ORDINANCE OF THE CITY OF PARKER, COLLIN COUNTY, TEXAS, EXTENDING A TEMPORARY MORATORIUM ON THE ACCEPTANCE, AUTHORIZATION, AND APPROVALS NECESSARY FOR THE SUBDIVISION, SITE PLANNING, DEVELOPMENT, AND CONSTRUCTION IN THE CITY LIMITS AND EXTRATERRITORIAL JURISDICTION, PROVIDING FINDINGS OF FACT, DEFINITIONS, APPLICABILITY, PURPOSE, ENACTMENT, DURATION, EXTENSION, EXCEPTIONS AND EXEMPTIONS, AND DETERMINATION AND APPEALS; PROVIDING FOR SEVERABILITY, REPEALER, ENFORCEMENT, PROPER NOTICE AND MEETING, AND AN EFFECTIVE DATE.

WHEREAS, the City Council of the City of Parker, Texas (the "City Council"), as a duly elected legislative body, finds that it is facing significant historic and contemporary land use challenges that existing regulations and infrastructure were not designed to address; and

WHEREAS, the City Council finds that it is in the best interest of the City and its citizens to extend the enacted moratorium in order to temporarily suspend the acceptance, authorization, and approvals necessary for the subdivision, site planning, development, and construction on real property in the City Limits and extraterritorial jurisdiction ("ETJ"); and

WHEREAS, Texas Local Government Code Section 51.001 provides the City general authority to adopt an Ordinance or police regulations that are for the good government, peace, or order of the City and is necessary for carrying out a power granted by law to the City; and

WHEREAS, Texas Local Government Code Chapters 211, 212, 213, 214, and 217 grant the City certain regulation authority concerning construction, land use, nuisances, structures, and development-related activities; and

WHEREAS, the City seeks to ensure that impending and future development is conducted in a fiscally sustainable and environmentally responsible manner; and

WHEREAS, the City limits and ETJ are comprised of a combination of topographical, ecological, and other features that create significant development challenges; and

WHEREAS, as codified in Texas Water Code Chapter 552, Subchapter A, the Legislature of the State of Texas granted municipalities the authority to own and operate "utility systems," which include water systems designed to provide domestic consumption of water; and

WHEREAS, Texas Water Code Section 552.015 grants Type A general-law municipalities the authority to provide for municipal water supply systems; and

WHEREAS, the City has determined that it is necessary to the health, safety, and welfare of the people in the City limits and ETJ to encourage and promote the development and use of the

City's water utility and supply systems to serve the water provision needs of the citizens in the City limits and ETJ to prevent failure of water supply within the system; and

WHEREAS, the City conducted an updated analysis to determine the adequacy of the City's current water supply, facilities, and the need beyond the estimated capacity that is expected to result from properties currently in development; and

WHEREAS, upon review of the updated analysis by the City's Engineer and City Administrator, the City Council has made findings contained herein as **Attachment B** related to the inadequacy of existing essential public facilities in accordance with Section 212.135 of the Texas Local Government Code; and

WHEREAS, the City Council finds that certain essential public water infrastructure, supply, and improvements throughout the City limits and ETJ are inadequate and insufficient to adequately serve new development; and

WHEREAS, relying on the analysis provided by City staff, the outstanding permits issued by the City prior to this moratorium, and the City's impact fee analysis, the City Council makes the following findings:

1. Taking in account all water that has been committed by contract, the City's water facilities are at capacity; and
2. The current water system has bottlenecks that threaten the proper operation of the City's water system; and
3. Based on these bottlenecks and the contractual commitments that will utilize all additional supply of the City's water system, there is currently no additional supply available to commit to development of lots; and
4. This moratorium is reasonably limited to property located in the City limits and ETJ.

WHEREAS, the City continues to take actions to increase the water supply of the City of Parker, including but not limited to investigating options within the current contract with North Texas Municipal Water District and alternative options, but until actions can be finalized to increase the water capacity, allowing for additional water service connections to the Parker water service area will only exacerbate the situation; and

WHEREAS, the City Council finds that a temporary moratorium on the acceptance, authorization, and approvals necessary for the subdivision, site planning, development, and construction in the City limits and ETJ will prevent the situation from becoming worse, and will allow the City time to address the measures needed to remedy the shortage of supply and to secure funds to pay for such remedial measures; and

WHEREAS, additional evaluation of the existing supply, infrastructure, and development is needed to allow for growth and development within the City limits and ETJ while protecting the health, safety, environment, quality of life, and general welfare of its residents; and

WHEREAS, the City desires to continue its study and evaluation of the impact of further development, the need and source of additional water supply and facilities, appropriate water regulations, and issues that will affect future growth and development of the area within its jurisdiction; and

WHEREAS, the City finds this evaluation process will require community input and will take a reasonable amount of time to complete; and

WHEREAS, the City has determined that resources for additional water supply must be readily available to the City before the City's water system can serve new development; and

WHEREAS, the City has determined that it is necessary to study and update its development ordinances and procedures in order to clarify and improve its planning policies based on the forthcoming regulations, strengthen the connection between the City's Code of Ordinances and the goals and needs of the City's residents, and to protect the health, safety, environment, quality of life, and general welfare of its residents; and

WHEREAS, in order for the City to have adequate and reasonable time to review, evaluate, and revise the City's development ordinances in light of the most recent legislative changes and court rulings, and to consider the impact of the ordinances upon future growth, public health and safety, development, the natural environment, and place of architectural and ecological importance and significance within the City limits and ETJ, the City wishes to maintain the *status quo* by extending the enacted temporary moratorium, during which certain applications for development permits and/or approvals will be suspended; and

WHEREAS, the purpose of prohibiting certain applications for development permits and/or approvals during this period includes, within limitation, preserving the *status quo* during the planning process, eliminating incentives for hurried applications, facilitating thoughtful and consistent planning, avoiding exploitation of the delays inherent in the municipal legislative process, and preventing applications from undermining the effectiveness of the revised rules by applying for permits and/or approvals in order to avoid the application of new, possibly more restrictive, development regulations; and

WHEREAS, in recognition of the importance of development permits and/or approvals to the community, the City desires to implement the moratorium for a stated and fixed time period, and to include a waiver provision in accordance with Texas Local Government Code Chapter 212, Subchapter E; and

WHEREAS, all notices and hearings, including a hearing by the Planning & Zoning Commission, were published, and held in accordance with applicable statutes, law, and regulations and a temporary moratorium was originally adopted on March 11, 2022, for a period of 90 days; and

WHEREAS, the notice for the possible extension of the temporary moratorium was published in the newspaper for a public hearing at City Council and City Council approved an extension on June 7, 2022, for an additional 90 days following the original term; and

WHEREAS, the notice for the possible extension of the temporary moratorium was published in the newspaper for a public hearing at City Council and City Council approved an extension on September 6, 2022, for an additional 90 days following that then-current term; and

WHEREAS, the notice for the possible extension of the temporary moratorium was published in the newspaper for a public hearing at the City Council and City Council approved an extension on December 6, 2022, for an additional 90 days following that then-current term; and

WHEREAS, the notice for the possible extension of the temporary moratorium was published in the newspaper for a public hearing at the City Council and City Council approved an extension on March 7, 2023, for an additional 90 days following that then-current term; and

WHEREAS, the notice for the possible extension of the temporary moratorium was published in the newspaper for a public hearing at the City Council and City Council approved an extension on May 23, 2023, for an additional 90 days following that then-current term; and

WHEREAS, the notice for the possible extension of the temporary moratorium was published in the newspaper for a public hearing set for August 15, 2023, at the City Council and City Council approved an extension on August 15, 2023, for an additional 90 days following the then-current term; and

WHEREAS, the notice for the possible extension of the temporary moratorium was published in the newspaper for a public hearing set for November 14, 2023, at the City Council and the City Council approve and extension on November 14, 2023, for an additional 120 days following the then-current term; and

WHEREAS, the notice for the possible extension of the temporary moratorium was published in the newspaper for a public hearing set for March 19, 2024, at the City Council for City Council's consideration of a 120-day extension following the then-current term; and

WHEREAS, based on the updated findings contained herein, information provided by City staff, and the evidence submitted at public hearings, the City Council has determined that existing development ordinances and regulations and other applicable laws are inadequate to prevent existing essential public water facilities from exceeding capacity, thereby being detrimental to the public health, safety, and welfare of the residents of Parker; and

WHEREAS, the City Council finds that the enactment of this Ordinance is directly related to the immediate preservation of the public peace, health, or safety.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF PARKER, COLLIN COUNTY, TEXAS:

Section 1. INCORPORATION OF RECITALS/FINDINGS OF FACT

The recitals contained in the preamble of this ordinance are incorporated into the body of this Ordinance as if set out fully herein as legislative findings of fact.

Section 2. DEFINITIONS

As used in this Ordinance, these terms shall be defined as follows. Terms appearing in this Ordinance but not defined herein shall have the meanings provided in the City's Code of Ordinances, or if not defined therein then the common meanings in accordance with ordinary usage.

- A. **“Essential Public Facilities”** means water, sewer/wastewater, or storm drainage facilities or street improvements provided by a municipality or private utility.
- B. **“Permit”** means a license, certificate, approval, registration, consent, permit, contract, or other agreement for construction related to, or provision of, service from a water or wastewater utility owned, operated, or controlled by a regulatory agency, or other form of authorization required by law, rule, regulation, order, or ordinance that a person must obtain to perform an action or initiate, continue, or complete a project for which the permit is sought
- C. **“Project”** means an endeavor over which a regulatory agency exerts its jurisdiction and for which one (1) or more permits are required to initiate, continue, or complete the endeavor.
- D. **“Property Development”** means the construction, reconstruction, or other alteration or improvement of buildings or the subdivision or replatting of a subdivision of property.

Section 3. APPLICABILITY

The City of Parker hereby enacts this Ordinance in order to extend the temporary moratorium enacted on March 11, 2022, on the acceptance and processing of certain applications and issuance of particular permits and other forms of municipal authorizations related to specific construction and land development activities. This extension of the temporary moratorium applies to all city zoning district uses within the City limits and ETJ.

Unless a Project falls within an Exception (as provided below), this temporary moratorium applies to all applications for property development permits. Permits that are affected or not affected by the moratorium are attached as **Attachment A**. The applicability of the moratorium to any permit not listed shall be determined based on the purpose of the moratorium and may be added to the list by the City Administrator or Mayor.

Section 4. PURPOSE

This temporary moratorium is being extended to maintain the *status quo*, and to:

- A. Review the City's policies on the acceptance of applications for municipal Permits for construction or development;
- B. Update the City's permitting and planning requirements and processes for utility and water infrastructure;
- C. Obtain and review public input and expert guidance; and
- D. Update the City's water utility infrastructure and supply.

Section 5. ENACTMENT

The City of Parker hereby enacts this Ordinance extending the temporary moratorium on the City's acceptance, review, approval, and issuance of permits in the City limits and ETJ.

Section 6. DURATION

The duration of the extension of this temporary moratorium shall be for a period of one hundred twenty (120) days from March 31, 2024, the expiration of the previously adopted extension, after enactment of this Ordinance to July 29, 2024, or repeal of this Ordinance by the City, whichever is sooner.

Section 7. EXTENSION

If the City determines that the period is insufficient for the City to fully complete its study and increase its water supply, this Ordinance may be renewed or extended for an additional period of time necessary to complete the implementation of the changes to the City codes, policies, and processes and the implementation of actions necessary to expand the City's water supply in accordance with the time limits as provided by law upon a majority vote of the City Council.

Section 8. EXCEPTIONS AND EXEMPTIONS

- A. **Exceptions.** Any property owner who believes that he or she falls within the below exceptions shall provide notice of the exception at time of application for any permit with the City-approved form. Exceptions are administratively approved or denied. Any exception that is denied may be appealed to the City Council. Exceptions will be determined within the same time period as the administrative completeness check for each Project, or within ten business days, whichever is sooner. If a Grandfathered Development Status Determination Report is required, then the exception can be applied concurrently with the Request, but the time frame of the Request shall be controlling.
 1. **No Impact Projects.** The temporary moratorium extended by this Ordinance does not apply to a Project that does not:
 - Impact Water Supply and/or Capacity; and

To make a determination of whether a Project has no impact as listed, an applicant shall apply for an exception to the moratorium.

2. **Ongoing Projects.** The temporary moratorium extended by this Ordinance does not apply to any Projects that are currently, actively in progress for which valid City permits have been issued and have not expired as of February 25, 2022, such being the fifth business day after the date on which the City published notice of the public hearings to consider the implementation of a temporary moratorium. The provisions of this Ordinance do not apply to any completed application or plan for development for a Permit, plat, verification, rezoning, site plan, approved water plan, or new or revised certificate of occupancy for Property Development that were filed prior to February 25, 2022. New Permits applied for as part of a previously approved Project may proceed once an exception is applied for and approved as described herein.
3. **Grandfathered Projects.** The temporary moratorium extended by this Ordinance shall not apply to Projects that are grandfathered as provided by state law. Property owners asserting grandfathered rights under Texas Local Government Code Chapter 245 must submit an application claiming an exception to this temporary moratorium to the planning department for review in accordance with City policy. Grandfathered status can be approved through an approved Grandfathered Development Status Determination Request. If a Grandfathered Development Status Determination Request has been finalized by staff on or after February 25, 2022, then a new request is not required to meet this exception. New permits applied for as part of a previously vested Project may proceed once an exception is applied for and approved as described herein.
4. **Development Agreement.** Property owners with a negotiated approval granted by the City Council providing for construction standards, platting, water, wastewater, and development rules pursuant to Texas Local Government Code Chapter 212, Subchapter G may apply for an exception in accordance with City policy. New Permits applied for as part of a Development Agreement Project may proceed once an exception is applied for and approved as described herein.

B. Waivers. Any property owner who does not assert rights under Texas Local Government Code Chapter 245, but who seeks authorization to proceed with the development permitting process during the time of the temporary moratorium can request a waiver. Property owners agreeing to construct certain water infrastructure at property owners' sole expense in accordance with Texas Local Government Code Chapter 212, Subchapter E may apply for a waiver in accordance with City policy.

Section 9. DETERMINATIONS AND APPEALS

A. Exceptions. The Public Works Director or his designee shall make all initial determinations regarding the status of all Projects seeking to apply for Permits during this temporary moratorium and recognition of all Exceptions (as provided herein). Exceptions for Projects filed within thirty (30) days of the effective date of this Ordinance may be filed without a corresponding Permit application. Any exception application filed within this period will be decided within (10) business days of receipt. Any exception that is denied may be appealed to City Council or the applicant may apply for a Waiver. An exception may be applied for by lot, Project, plat, or all area covered by a particular Permit or agreement.

B. City Council. City Council shall make a final decision on waivers within 10 days of filing of application.

C. Waivers. The decision to approve an Exemption (as provided for above) shall rest solely with the City Council. Any denial will stand until the moratorium is lifted unless the Project requesting the waiver has a substantial change and reapplies for a waiver.

Section 10. REPEALER

In the case of any conflict between other provisions of this Ordinance and any existing Ordinance of the City, the provisions of this Ordinance shall control.

Section 11. SEVERABILITY

If any article, paragraph, sentence, subdivision, clause, phrase, or section of this Ordinance be adjudged or held to be unconstitutional, illegal, or invalid, the same shall not affect the validity of this Ordinance as a whole, or any part or provision thereof other than the part so decided to be invalid, illegal, or unconstitutional, and shall not affect the validity of this Ordinance as a whole.

Section 12. ENFORCEMENT

The City shall have the power to administer and enforce the provisions of this Ordinance as may be required by governing law. Any person violating any provision of this temporary moratorium is subject to suit for injunctive relief as well as prosecution for criminal violations, and such violation is hereby declared to be a nuisance.

Nothing in this Ordinance shall be construed as a waiver of the City's right to bring a civil action to enforce the provisions of this Ordinance and to seek remedies as allowed by law and/or equity.

Section 13. PROPER NOTICE AND MEETING

It is hereby officially found and determined that the meeting at which this Ordinance was passed was open to the public, and that public notice of the time, place, and purpose of said meeting was given as required by the Open Meetings Act, Texas Government Code, Chapter 551. Notice

and a public hearing were also provided as required by Texas Government Code Chapter 212, Subchapter E.

Section 14. EFFECTIVE DATE

This Ordinance shall be effective upon its approved execution and shall extend the moratorium for 120 days from the final day of the previously extended term of the temporary mortarium, which is March 31, 2024, to July 29, 2024.

READ, PASSED, AND APPROVED BY THE CITY COUNCIL OF PARKER,
COLLIN COUNTY, TEXAS, THIS 19TH DAY OF MARCH, 2024.



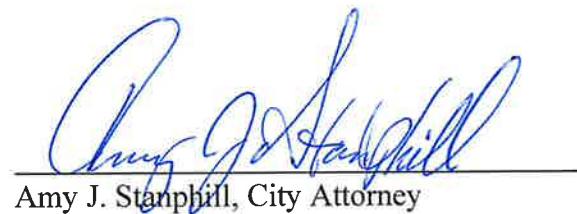
Lee Pettle, Mayor

ATTEST:



Patti Scott Grey, City Secretary

APPROVED AS TO LEGAL FORM:



Amy J. Stanphill, City Attorney

ATTACHMENT A

PERMITS SUBJECT TO MORATORIUM

- Building Permit Application
- Development Agreement
- Development Agreement Minor Modification/Amendment
- Plan Review Application
- Subdivision Application
- Site Development Application
- Conditional Use Permit
- Variance Application
- Wastewater Application
- Special District Agreement/Amendment
- Accessory Dwelling Unit Permit
- Mobile/Modular Home Permit

PERMITS NOT SUBJECT TO MORATORIUM

- Zoning Amendment/PDD Application
- Contractor Registration Form
- Grandfathered Status Request/Appeal
- City Limits/ETJ Determination Letter
- Street Cut/Driveway Permit
- Operational Permit/Inspection Application
- On Site Sewage Facility Permit Application
- Pre-Development Meeting Form
- Certificate of Appropriateness
- Annexation Application
- Sign Permit
- Master Sign Plan
- License to Encroach
- Exterior Lighting Compliance Review
- Zoning Determination Letter Request
- Building Addition Permit
- Accessory Structure Permit
- Demolition Permit
- Asbestos Compliance Statement
- Pyrotechnics/Fireworks Application
- Certificates of Occupancy Application
- Any Fire Permits
- Swimming Pool Permit

ATTACHMENT B

ATTACHMENT B

BIRKHOFF, HENDRICKS & CARTER, L.L.P. PROFESSIONAL ENGINEERS

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ANDREW MATA, JR., P.E.

DEREK B. CHANEY, P.E., R.P.L.S.
CRAIG M. KERKHOFF, P.E.
JUSTIN R. IVY, P.E.
COOPER E. REINBOLD, P.E.

February 26, 2024

Mr. Luke Olson
City Administrator
City of Parker
5700 E. Parker Road
Parker, Texas 75002

Re: Water Projections

Dear Mr. Olson:

The water system is now experiencing winter demand that is well below the peak demand that occurred in the summer of 2023. Springtime demands are approaching and historically the demands increase from winter demands to the peak summer demands. We completed a demand study from records received for August 2023. We reviewed the hourly records on the day of maximum usage and have tabulated those hourly results. Based on the number of September 2023 connections of 2,108 and a per unit density of 2.79 persons per unit calculates a population of 5,882. For August 18th, the maximum daily demand was 4,242,888 gallons which equates to a per capita demand of 721 gallons per capita. The maximum hourly demand occurred at 6 AM at a rate of 1,236 gallons per capita. Since the August analysis of water usage, 12 additional homes have been brought online.

To meet the demand placed on the system all pumps at the Eastside Pump Station were in use. The design of a pump station to conform to the TCEQ requirements has the largest pump out at any given time as it is the backup pump in the event any of the three remaining pumps fail. The City completed a site visit, pump testing and electrical review of the station on November 28, 2023. The findings of that evaluation along with recommendations was published to the City on December 27, 2023.

The pump station was operating satisfactorily with the pumps meeting the design flows of the manufacturers pump curves. Nine items were outlined in the evaluation memo to provide reliability and back up in the event of a failure of the station without a large backup pump being available. A copy of that evaluation is attached.

We recommend no additional lots be approved for development until a contract with NTMWD is executed to supply water to the Central Pump Station. In addition, we recommend the city consider more rigid water management requirements in an attempt eliminate the need to routinely run the backup pump to meet water demands, along with implementing the nine items in the evaluation report for increased reliability at the Eastside Pump Station.

We are available at your convenience to discuss our findings and recommendations.

Sincerely,



John W. Birkhoff, P.E.

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Attachment B.1
MEMORANDUM

To: Mr. Gary Machado

From: John W. Birkhoff, P.E. and Andrew Mata, P.E.

Date: 12/27/2023

Subject: Eastside Pump Station Evaluation

On November 28, 2023, a site visit was conducted with City Staff at the Eastside Pump Station to test the existing pumps and determine pump performance. Present during pump testing was a representative from the pump manufacturer (Odessa Pump) and a licensed electrician (H&H Electric). The tests were performed with the elevated storage tank (EST) and ground storage reservoir (GSR) at approximately half-full while testing the pumps individually and in series. The elevation of the pressure gauge located in the meter vault outside the pump room was measured to be 10 feet below ground level.

The evaluation commenced with all pumps off. The pressure at the gauge was determined to be 100 psi at zero flow and the GSR level was at 25 feet. The total dynamic head (TDH) is calculated using the following formula:

$$\begin{aligned} \text{TDH} &= \text{Pressure (psi)} * 2.31 \text{ ft./psi} - \text{GSR level} \pm \text{Pressure Gauge Elevation} \\ \text{TDH} &= 100 \text{ psi} * 2.31 \text{ ft./psi} - 25 \text{ ft.} - 10 \text{ ft.} = 196 \text{ TDH @ 0 gpm} \end{aligned}$$

Next, each pump was tested individually in the following order:

Pump 1 is a 0.72 MGD (500 gpm) rated at 240 TDH. The flow output of Pump 1 was determined to be 573 gpm, the GSR level was at 25 feet and the pressure was measured to be 97 psi. This results in a TDH of 189 feet for Pump 1 @ 573 gpm. **Pump horsepower is 40HP.**

Pump 4 is a 0.72 MGD (500 gpm) rated at 240 TDH. The flow output of Pump 4 was determined to be 586 gpm, the GSR level was at 24 feet and the pressure was measured to be 97.3 psi. This results in a TDH of 189.1 feet for Pump 4 @ 586 gpm. **Pump horsepower is 40 HP.**

Pump 2 is a 2.16 MGD (1,500 gpm) rated at 240 TDH. The flow output of Pump 2 was determined to be 1,686 gpm, the GSR level was at 23 feet and the pressure was measured to be 105.6 psi. This results in a TDH of 211 feet for Pump 2 @ 1,686 gpm. **Pump horsepower is 125 HP.**

Pump 3 is a 2.16 MGD (1,500 gpm) rated at 240 TDH. The flow output of Pump 3 was determined to be 1,743 gpm, the GSR level was at 24.3 feet and the pressure was measured to be 105.3 psi. This results in a TDH of 209 feet for Pump 3 @ 1,686 gpm. **Pump horsepower is 125 HP.**

Next, the pumps were tested in a series of combinations.

Pumps 2 and 3 were tested together and had a flow output of 4.1 MGD (2,848 gpm). The GSR level was at 23.4 feet and the pressure was measured to be 120.9 psi. This results in a TDH of 246 feet for Pump 2 + 3 @ 2,848 gpm.

Pumps 1, 2 and 3 were tested together and had a flow output of 4.62 MGD (3,209 gpm). The GSR level was at 25 feet and the pressure was measured to be 125.2 psi. This results in a TDH of 254 feet for Pumps 1 + 2 + 3 @ 3,209 gpm.

Pumps 1 and 4 were then tested together and had a flow output of 1.67 MGD (1,153 gpm). The GSR level was at 23 feet and the pressure was measured to be 99.3 psi. This results in a TDH of 196 feet for Pump 1 + 4 @ 1,153 gpm.

Pumps 1, 3 and 4 were tested together and had a flow output of 3.70 MGD (2,568 gpm). The GSR level was at 24.6 feet and the pressure was measured to be 115.6 psi. This results in a TDH of 232 feet for Pumps 1 + 3 + 4 @ 2,568 gpm.

Pumps 1+2+3+4 The flow output for all pumps on was 4.72 MGD (3,275 gpm). The GSR level was at 24.8 feet and the pressure was measured to be 127.6 psi. This results in a TDH of 260 feet for Pumps 1 + 2 + 3 + 4 @ 3,275 gpm.

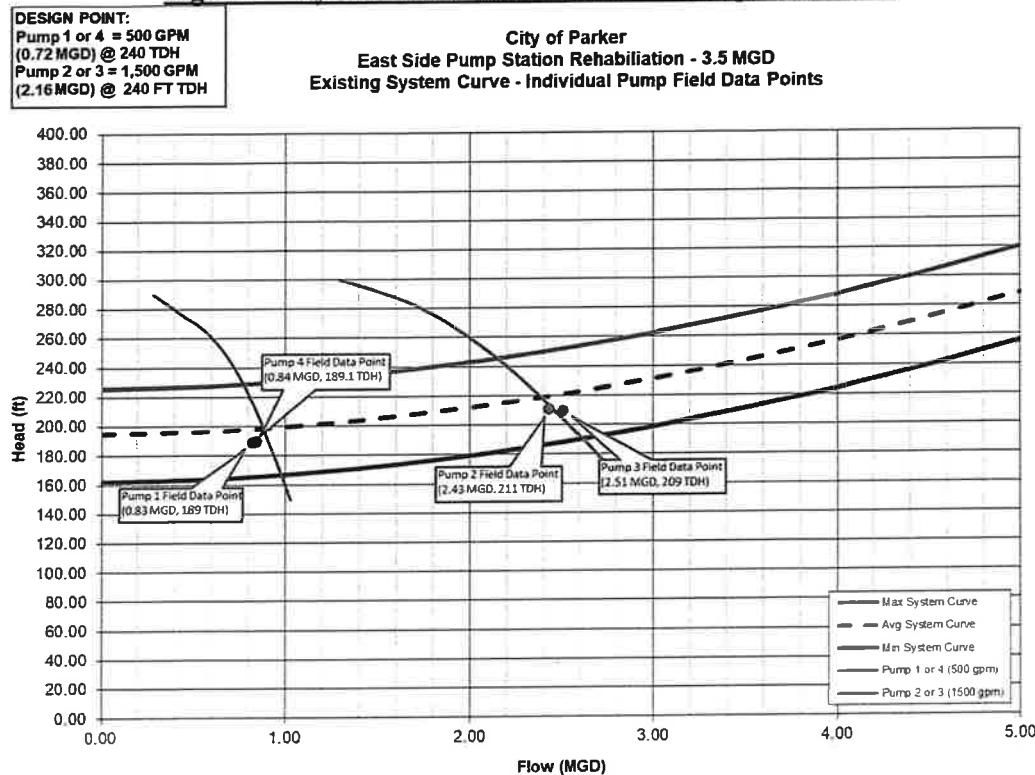
Table 1 is a summary of the data that was collected for the pump tests that were performed.

Table 1: Eastside Pump Test Data

All Pumps Off:				
Pressure (psi)	Flow (gpm)	Flow (MGD)	TDH (ft)	GSR Level (ft)
100	0	0	196	25
Pump 1:				
Pressure (psi)	Flow (gpm)	Flow (MGD)	TDH (ft)	GSR Level (ft)
97	573	0.83	189	25
Pump 2:				
Pressure (psi)	Flow (gpm)	Flow (MGD)	TDH (ft)	GSR Level (ft)
105.6	1686	2.43	211	23
Pump 3:				
Pressure (psi)	Flow (gpm)	Flow (MGD)	TDH (ft)	GSR Level (ft)
105.3	1743	2.51	209	24.3
Pump 4:				
Pressure (psi)	Flow (gpm)	Flow (MGD)	TDH (ft)	GSR Level (ft)
96.6	586	0.84	189.1	24
Pump 2 + 3:				
Pressure (psi)	Flow (gpm)	Flow (MGD)	TDH (ft)	GSR Level (ft)
120.9	2848	4.10	246	23.4
Pump 1 + 2 + 3:				
Pressure (psi)	Flow (gpm)	Flow (MGD)	TDH (ft)	GSR Level (ft)
125.2	3209	4.62	254	25
Pump 1 + 4:				
Pressure (psi)	Flow (gpm)	Flow (MGD)	TDH (ft)	GSR Level (ft)
99.3	1153	1.66	196	23
Pump 1 + 3 + 4:				
Pressure (psi)	Flow (gpm)	Flow (MGD)	TDH (ft)	GSR Level (ft)
115.6	2568	3.70	232	24.6
All Pumps On:				
Pressure (psi)	Flow (gpm)	Flow (MGD)	TDH (ft)	GSR Level (ft)
127.6	3275	4.72	260	24.8

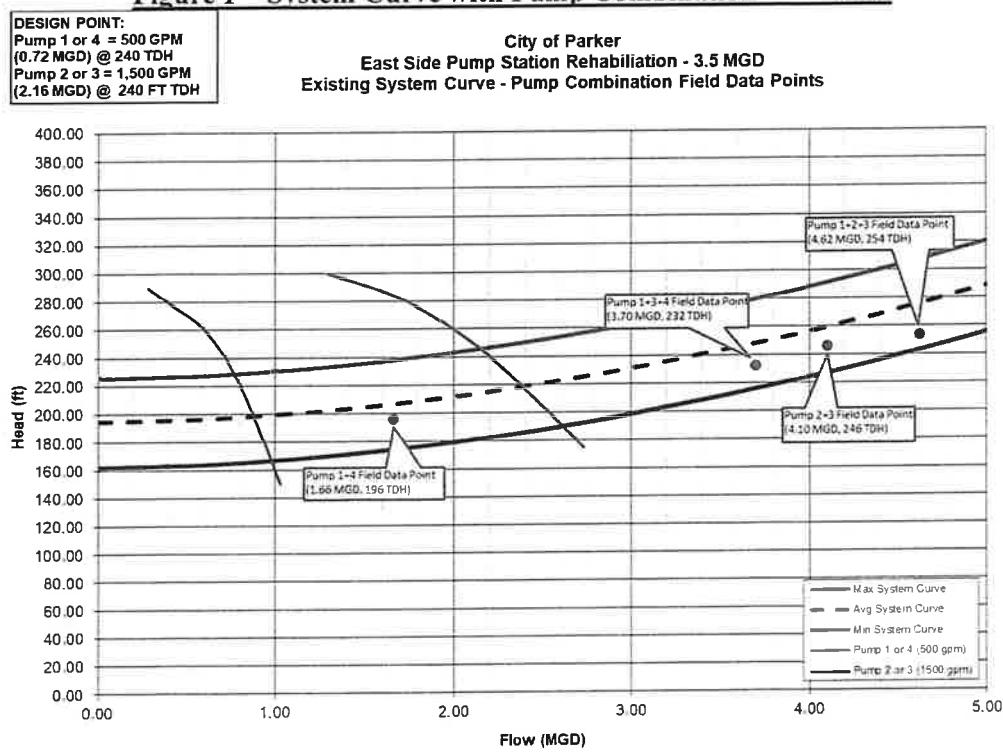
After calculating the total dynamic head for Pumps 1, 2, 3 and 4, the flow and the calculated total dynamic head is plotted on the system curve graph for each individual pump test, as shown in Figure 1.

Figure 1 – System Curve with Individual Pump Field Data



The flow and calculated total dynamic head for the pump combinations that were tested is plotted on Figure 2.

Figure 1 – System Curve with Pump Combination Field Date



SUMMARY & RECOMMENDATIONS

Pumps & Motors

During the testing, the pumps performed within the established system curve band indicating the pumps performed as designed. It was reported that Pumps 1 were rebuilt in September 2020 including re-bowled with new wear rings, bowl bearings, bowl shaft, new packing and a new electric motor.

To improve reliability of the pumps, we recommend pulling pump 2 and 4 and replacing the bowl bearings, wear rings, bowl shaft, stuffing box bearing and packing. This would require a lead time of 6-8 weeks each.

A weak link in the system of pump, motor and electrical switch gear is the electric motor. Pump 2 and Pump 4 are the large pumps that have 125 horses power motors. We recommend a spare 125 HP motor be purchased and stored in the Public Works building where it can be manually exercised. In the event of a motor failure the spare motor could be installed within a day or so. To order and receive a spare motor will have a lead time of 8-10 weeks.

Further we recommend that the oil in each motor be drained and replaced with new oil during the spring months.

The pump station was designed to meet demands and meet TCEQ requirement of all pumps running with the largest pump out (pump 2 or 3). This results in a firm pump capacity of 3.6 MGD. To meet summer demands all pumps are being run resulting in a flow of 4.72 MGD. Based on the review of pump combinations running two large pumps and two small pumps is an inefficient combination as the second small pump rated at 0.72 MGD only produces approximately 0.1 MGD. When two large pumps are running to meet demand and additional flow is needed, only one small pump should be utilized. Adding one small pump to the combination of two large pumps running provides an additional 0.51 MGD.

Electrical

During the testing of the pumps and motors the motor control center cabinets were opened and inspected. During the running of the pump's amp draws were taken which showed Amps within acceptable limits. In addition, the electrical motor termination enclosure was opened at each motor and the wiring inspected and determined to be in good condition.

The motor control centers were rebuilt when the Eastside Pump Station Improvements project was completed in 2010 and the soft starter were replaced at that time. The life expectancy of soft starters is approximately 10-15 years. It is recommended that a standby soft starter for the large 125 HP motors be purchased in the event a starter fails. The starter can be removed and replaced within a day or two.

Other electrical equipment was evaluated, and the following recommendations were determined:

1. A current injection test be performed on the main breaker (recommend be completed every 10-15 years).
2. Replace the power monitoring unit (PMU) next to the main breaker.
3. Replace the 1-1/2-inch flex-tite conduit for all four pump motors from the floor to the motor termination enclosure.

Currently the pump room included the pumps, motors and motor control centers and the space has forced ventilation thru intake and exhaust fans. For the longevity and reliability of the electronics in the motor control centers, we recommend a block wall be constructed inside the pump building to separate the electrical motor control centers from the pumps and motors and the room be heated and air conditioned.

We have obtained budget numbers from Odessa Pump and from H&H Electric for the recommended work. Actual quotes will need to be obtained from vendors for each item of work.

1. Pull Pump 2 & 4 and replace bearings, wear rings, shaft, stuffing box and packing (turbine pump rebuild) Reset pump and make operational.	\$30,000.00
2. Change oil in all motors in the Spring of 2024 by Odessa Pump	\$1,000.00
3. Purchase one 125 HP motor and store at Public Works Building	\$15,000.00
4. Cost to remove and install 125 HP motor and make operational.	\$2,000.00
5. Purchase 125 HP motor starter and store at Public Works Building.	\$10,000.00
6. Remove and Replace 125 HP Motor Starer and make operational.	\$2,500.00
7. Complete the current injection test on the main breaker.	\$8,000.00
8. Replace 1-½ inch flex-tite conduit and cleanup hot dipped galvanized conduit at each pump motor.	\$2,500.00
9. Replace power monitoring unit at main breaker.	<u>\$5,000.00</u>
 TOTAL ALL ITEMS	 \$76,000.00

We have estimated quantities for construction of a block wall electrical room with insulated ceiling, access doors, lighting and air conditioning & heating and formulated an opinion of cost of approximately \$175,000.00 including design drawings.