



# Land Use Assumptions Report of the Capital Improvements Advisory Committee of the City of Parker

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September 9, 2016

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## Executive Summary

The Capital Improvements Advisory Committee (the “Committee”) was appointed by the City of Parker City Council to review the subjects identified below and render an opinion on the land use assumptions necessary for the City to create and adopt lawful impact fees for the City of Parker public water system. The Committee has reviewed the Comprehensive Plan, the land use data, the current development within Parker, the current zoning within Parker, and the existing water plans for future growth and development. The Committee’s report on the Land Use Assumptions required by Texas Local Government Code with relation to the Committee’s work on impact fee research is contained within.

Members of this Committee include regular members of the Planning and Zoning Commission, experienced developers within the City of Parker, its ETJ, and key City personnel.

**Table 1 - Capital Improvements Advisory Committee Members**

Name	Role
<b>Russell Wright</b>	P&Z Chairman
<b>Joe Lozano</b>	P&Z Vice-Chairman
<b>Cleburne Raney</b>	P&Z Member
<b>Jasmat Sutaria</b>	P&Z Member
<b>Wei Wei Jeang</b>	P&Z Member
<b>JR Douglas</b>	P&Z Alternate, Developer
<b>Steve Sallman</b>	Developer/ETJ Owner
<b>Jim Shepherd</b>	City Attorney
<b>Jeff Flanigan</b>	City Administrator
<b>Patti Scott Grey</b>	City Secretary

## Analysis of Existing Conditions

Each member of the Committee is personally familiar with the existing development within the City of Parker. The areas of the City of Parker that are not yet developed were presented by the City Administrator and the relevant maps and data were reviewed. This data review included the population (Exhibit 1), existing zoning (Exhibit 2), and the Comprehensive Plan (Exhibit 3), current Development Map (Exhibit 4), and the Water Master Plan Map (Exhibit 5) for the City as it relates to the undeveloped areas of Parker and its ETJ.

## Determination of Service Area

The City Council’s charge to the Committee was to render an opinion on the land use assumptions necessary for the City to create and adopt lawful impact fees for the City of Parker public water system. The Committee reviewed the requirements to exclude the provisions and related costs to current development and concentrated on the capital improvements necessary to serve future development based on the existing conditions noted above, and the anticipated use of the comprehensive plan and related development plans of the City, all as required by the Texas Local Government Code. The service area for a water impact fee would be the entire City and its ETJ with respect to new development in any portion of this area.

There is a portion of the City’s water service area (CCN, Certificate of Convenience and Necessity) that lies within the City of Wylie. This was discussed as whether it should be included in the impact fee Service Area. The City Administrator noted that the water infrastructure in that area is already built out to specifications that would not necessitate additional infrastructure capital improvements. Therefore, it was concluded by the committee to not include this area within the Service Area.

Additionally, The City has a Special Activities area of approximately 188 acres (Southfork Ranch) which, at some point in the future, could be developed and subsequently subdivided. While there are no specific plans at the time of this writing, it is important to include this area for any future plans.

## Growth Projections

Based on the review of the factors set forth in the sections above, *Analysis of Existing Conditions and Determination of Service Area*, the Committee projected the 10 year growth patterns as they relate to water system capital improvements are as set forth in Table 6 - Land Use Assumptions (Exhibit A). The Committee's findings are based on the following discussions and calculations.

### Density Calculations

The Committee agrees with the Comprehensive Plan of Parker with regard to the future development of Parker and its ETJ. Consequently, for those areas zoned SF-Single Family, the Committee has projected single family residential units on lots of two acres, with three residents per household. For those areas projected to be zoned SFT-Single Family Transitional, the Committee anticipates 1 acre minimum lots, with a 1.5 acre average size of lots in the subdivision. The population estimate for SFT is also three residents per unit. Additional zoning categories such as Special Activities, Agricultural, Manufactured Housing and non-conforming uses, were all considered in the analysis.

The raw data in Table 2 was used as the basis of the analysis. The Meters column indicates the number of water meters the City was billing in that year. The Estimated Residents (Est. Residents) is based on the assumption of three residents per household, as indicated above. The % Change is expressed as the delta (change in number of meters) from the prior year divided by the number of meters in the prior year, e.g.  $98/688=14.2\%$ .

**Table 2 - Historical Water Meters (i.e. Service Units) for 2000 - Jan 2016**

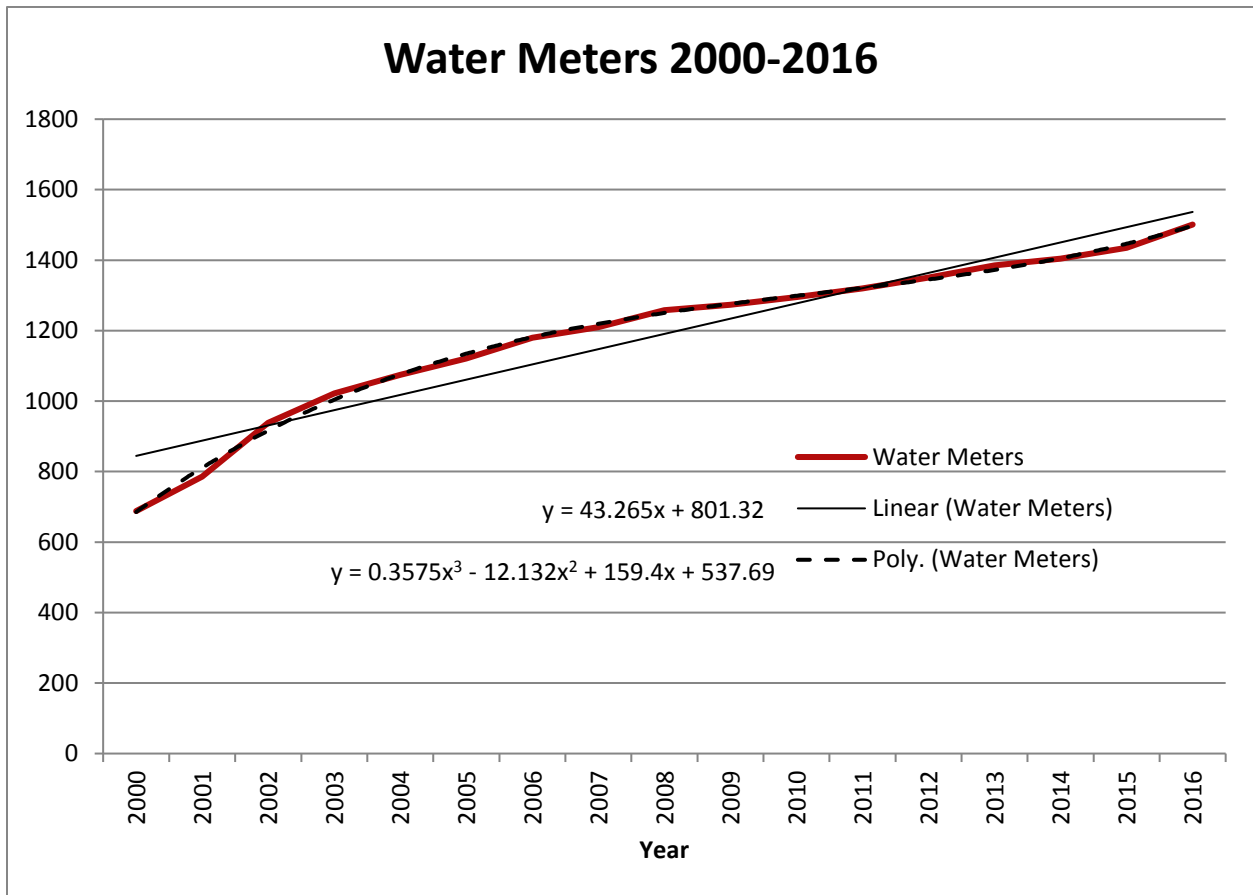
Year	Meters	Est. Residents	Delta	% Change	Std. Dev.
2000	688	2064	688.0		
2001	786	2358	98.0	14.2%	5.1%
2002	938	2814	152.0	19.3%	4.6%
2003	1022	3066	84.0	9.0%	2.1%
2004	1075	3225	53.0	5.2%	1.4%
2005	1121	3363	46.0	4.3%	
2006	1180	3540	59.0	5.3%	
2007	1210	3630	30.0	2.5%	
2008	1258	3774	48.0	4.0%	
2009	1273	3819	15.0	1.2%	
2010	1295	3885	22.0	1.7%	
2011	1320	3960	25.0	1.9%	
2012	1351	4053	31.0	2.3%	
2013	1385	4155	34.0	2.5%	
2014	1404	4212	19.0	1.4%	
2015	1435	4305	31.0	2.2%	
2016	1501	4503	66.0	4.6%	

Referring to the standard deviation of a sample<sup>1</sup> Table 2, we can see the standard deviation for years 2001 and 2002 are significantly greater than several of the later years, so it was concluded that this extreme rate of growth for the City of Parker will likely not repeat itself. However, the Committee concluded the economic factors of many companies moving into the surrounding areas will likely increase

<sup>1</sup> Excel function STDEV.S is used to calculate the standard deviation of a sample.

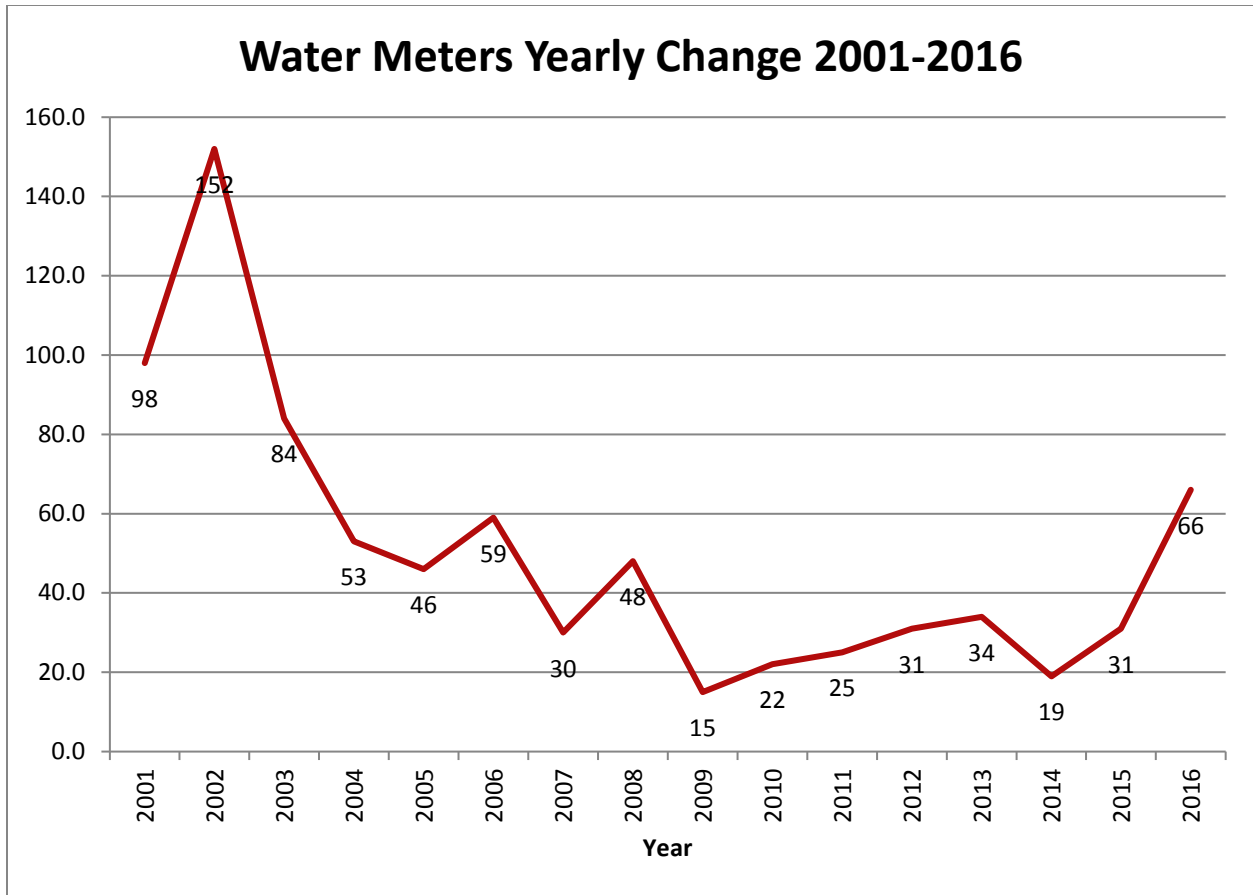
the growth rate for the next several years, which might indicate above average growth for four to five years (5-6%), followed by slower growth (2-3%). In its final estimation, the committee agreed that 5% growth for the next five years (2017-2021) followed by 3% growth for the following five years (2022-2026) was a reasonable compromise.

When the absolute number of water meters is graphed over the years for which data exists, a curve as shown in Figure 1 develops. For comparison purposes, linear and 3<sup>rd</sup> order polynomial trend lines are added, along with their respective formulae.



**Figure 1 - Water Meter Graph**

Figure 2 shows a graphical representation of the tabular data in Table 2. Since there was no detailed recording of service unit numbers prior to the year 2000, it is difficult to determine if the upward trend of the graph is representative of the years prior to 2000. However, as stated earlier, this could represent the beginning of an upward “growth spurt” for the City and this upward trend has been considered in the analysis of the overall growth projections.



**Figure 2 - Water Meters Delta from Prior Year**

For selected time periods, average year on year growth rates can be established. Several time periods were used (refer to Table 3) to show the difference in growth rate when some of the outlying data is included or excluded.

**Table 3 - Selected Year on Year Growth Rates**

Period	# Periods	Avg. YoY Growth Rate
<b>2001-2016</b>	16	5.1%
<b>2003-2016</b>	14	3.4%
<b>2001-2011</b>	10	6.2%
<b>2003-2013</b>	10	3.6%

### Build Out

Table 4 shows the analysis of the estimated number of lots, which correspond directly to service units in the City, for areas covered by zoning or development agreements and all undeveloped land. The estimated lots for those areas already approved are actual numbers. For the undeveloped areas a factor of 0.9<sup>2</sup> is used to allow for those areas dedicated for roads, rights-of-way and other unusable areas.

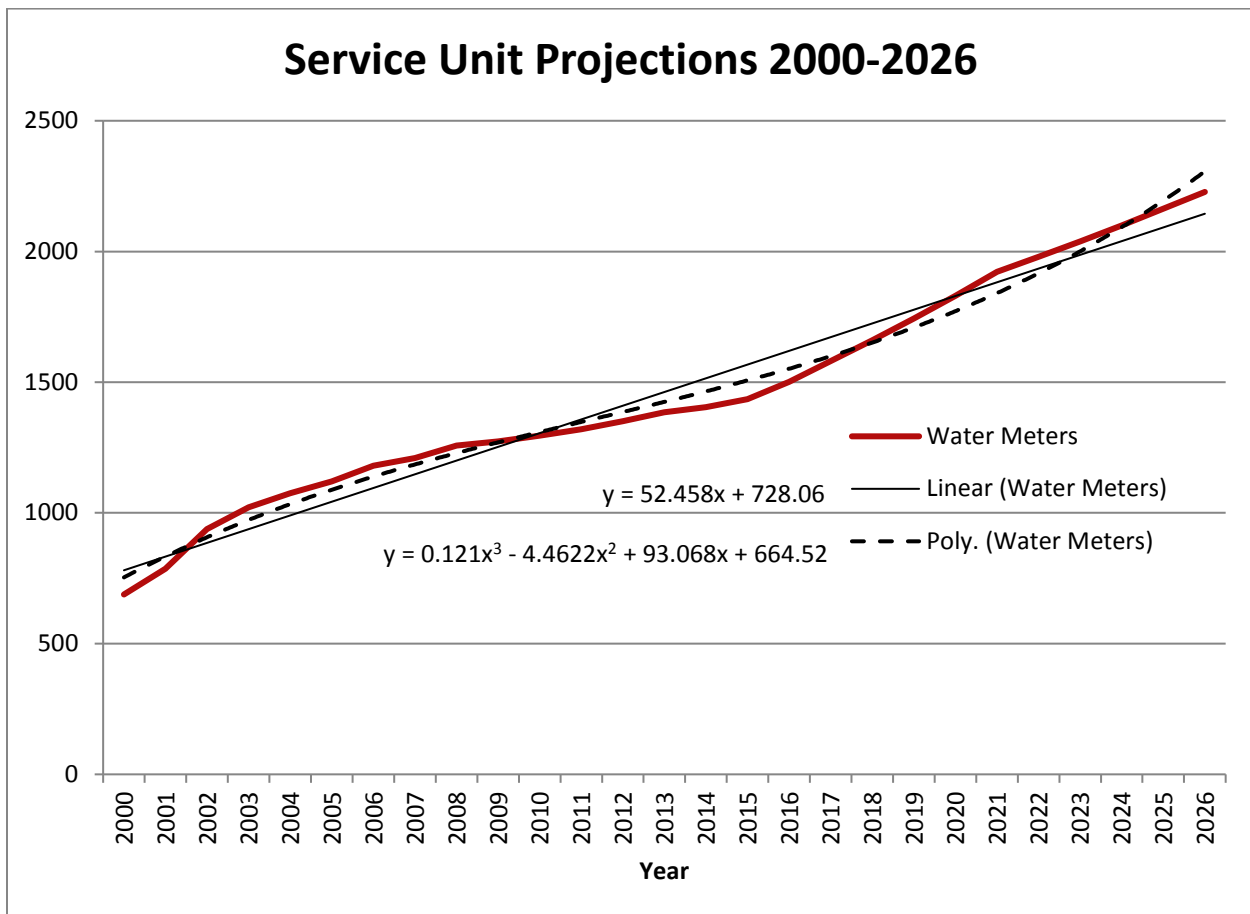
<sup>2</sup> Formula used: Number of acres \* Lots/Acre \* 0.9

**Table 4 - Future Service Area Impact**

Future Service Area	Acres	Lots/Acre	Est. Lots/Service Units	Est. Residents
<b>Approved by Zoning or Development Agreement</b>	1500	0.646	969	2907
<b>Undeveloped in ETJ</b>	720	1	648	1944
<b>Undeveloped Zoned SF</b>	500	0.5	225	675
<b>Undeveloped Zoned SFT</b>	400	0.67	241	724
<b>Current Special Activities Area<sup>3</sup></b>	188	2		
<b>Totals</b>	3120	NA	2083	6250

Add plus existing homes.

The current number of residents and population within Parker and its anticipated growth patterns over the next 10 years are as set forth in Table 6 - Land Use Assumptions (Exhibit A). The projections shown in Table 6 provide Parker's ultimate build-out growth projections, including existing development within Parker, anticipated future development on currently undeveloped land within Parker, and development in the extra-territorial jurisdiction (ETJ).



**Figure 3 - Service Unit Projection Graph**

<sup>3</sup> Southfork Ranch is a Special Activities area that is included in the table but not included in calculations.

**Table 5 - Actual and Estimated Service Units**

Year	Meters	Linear equation	Poly equation
2000	688	845	685
2001	786	888	811
2002	938	931	916
2003	1022	974	1004
2004	1075	1018	1076
2005	1121	1061	1135
2006	1180	1104	1182
2007	1210	1147	1219
2008	1258	1191	1250
2009	1273	1234	1276
2010	1295	1277	1299
2011	1320	1320	1321
2012	1351	1364	1345
2013	1385	1407	1372
2014	1404	1450	1406
2015	1435	1493	1447
2016	1501	1537	1498
2017	1581	1580	1561
2018	1660	1623	1639
2019	1743	1666	1733
2020	1830	1710	1846
2021	1922	1753	1979
2022	1979	1796	2136
2023	2039	1839	2317
2024	2100	1883	2526
2025	2163	1926	2764
2026	2228	1969	3034

**Table 6 - Land Use Assumptions (Exhibit A)**

	2016 (Current)	2021	2026	Buildout
Homes	1,501	1,922	2,228	4,000 <sup>4</sup>
Mfg'd Housing	75 <sup>5</sup>	75	75	75
Commercial	0	10	20	20
Public	0	0	0	0
Totals	1,576	2,007	2,323	4,095
Population	4,503	6,021	6,969	12,000

<sup>4</sup> Buildout based on total population of 12,000

<sup>5</sup> 75 manufactured houses, 75 houses in CCN (not in City) is a wash



**CITY OF PARKER, TEXAS  
2016 IMPACT FEE  
WATER DISTRIBUTION SYSTEM  
10-YEAR CAPITAL IMPROVEMENT PLAN**

**PROPOSED WATER LINES**

Project No. <sup>(3)</sup>	Project	Size	Opinion of Project Cost <sup>(1)</sup>	Debt Service <sup>(2)</sup>	Total Project Cost
1	Dillehay Drive 18-Inch Water Line	18"	\$ 577,500	\$ 197,657	\$ 775,157
2	Chaparral Elevated Storage Tank 16-Inch Water Line	16"	\$ 46,200	\$ 24,255	\$ 70,455
3	Malone Road 8-Inch Water Line	8"	\$ 215,000	\$ 112,875	\$ 327,875
4	Bois-D-Arc Lane 8-Inch Water Line	8"	\$ 167,000	\$ 87,675	\$ 254,675
<b>Subtotal: Proposed Water Lines</b>			<b>\$ 1,005,700</b>	<b>\$ 422,462</b>	<b>\$ 1,428,162</b>

**SUPPLY, PUMPING, STORAGE FACILITIES AND FACILITY IMPROVEMENTS**

Project No. <sup>(4)</sup>	Project	Capacity	Opinion of Project Cost <sup>(1)</sup>	Debt Service <sup>(2)</sup>	Total Project Cost
5	Central Pump Station - 1.75 MGD P.S.	1.75 MGD	\$ 3,150,000	\$ 1,653,750	\$ 4,803,750
6	Central Pump Station - 0.75 MG G.S.R.	0.75 MG	\$ 2,700,000	\$ 135,000	\$ 2,835,000
7	NTMWD Delivery Point No. 2	5 MGD	\$ 2,100,000	\$ 135,000	\$ 2,235,000
8	Chaparral 1-MG Elevated Storage Tank	1 MGD	\$ 4,800,000	\$ 1,102,500	\$ 5,902,500
9	Bois-D-Arc Lane 8-Inch Pressure Reducing Valve	-----	\$ 240,000	\$ 2,520,000	\$ 2,760,000
<b>Subtotal, Supply, Pumping and Storage Facilities:</b>			<b>\$ 12,990,000</b>	<b>\$ 5,546,250</b>	<b>\$ 18,536,250</b>

**PLANNING EXPENSES**

Project No.	Project	Opinion of Cost (1)(b)	Debt Service <sup>(2)</sup>	Total Project Cost
	Water System Master Plan	\$ 32,000	\$ -	\$ 32,000
	Water Impact Fee	\$ 20,000	\$ -	\$ 20,000
<b>Subtotal, Planning Expenses:</b>		<b>\$ 52,000</b>	<b>\$ -</b>	<b>\$ 52,000</b>
<b>Water Distribution System CIP Grand Total:</b>		<b>\$ 14,047,700</b>	<b>\$ 5,968,712</b>	<b>\$ 20,016,412</b>

**Notes:**

- (1) Opinion of Project Cost includes:
  - a) Engineer's Opinion of Construction Cost
  - b) Professional Services Fees (Survey, Engineering, Testing, Legal)
  - c) Cost of Easement or Land Acquisitions
- (2) Debt Service based on 20-year simple interest bonds at 5%
- (3) \* - Developer Initiated Construction of 8-inch Waterline, City Participation in Oversize Cost

