

4.0 WATER CAPITAL IMPROVEMENTS

This section establishes the City of Fort Worth water facilities and engineering studies that are eligible for inclusion in the calculation of the impact fee. The City’s existing water model was updated by FNI staff to reflect the updated demands for the impact fee period, as well as include the recommended CIP projects for the impact fee period. Projects included in the CIP increase system capacity as a result of projected growth. Only those projects warranted by capacity needs derived from growth occurring during the study period (2017 to 2027) can be included in the impact fee calculation. Additionally, projects are excluded from the impact fee calculation if alternate mechanisms for cost recovery are in place.

Projects included in the impact fee study are TRWD supply projects, raw water supply and transmission, water treatment facilities, regional transmission lines, pump stations, storage facilities, and engineering studies.

Table 4-1 provides a summary of each water CIP project cost and allocation for the 2017-2027 study period. The 2017 percent utilization is the portion of a project’s capacity required to serve existing development. It is not included in the impact fee analysis. The 2017-2027 percent utilization is the portion of the project’s capacity that will be required to serve development projected to occur from 2017 to 2027. The portion of a project’s total cost that is used to serve development projected to occur from 2017 through 2027 is calculated as the total cost multiplied by the 2017-2027 percent utilization. Only this portion of the cost is used in the impact fee analysis.

Figures D-1 and **D-2** show existing and proposed facilities, respectively, for the impact fee study period. **Appendix C** describes each water CIP project for the 2017-2027 planning period. The purpose of each project, the portion that is allocated to growth and the current status is also included.

**Table 4-1
Water Capital Improvement Projects 2017 - 2027**

Project ID	Project Title	Project Phase	Initial Project Cost	Project Cost in 2017 Dollars*	Start Date	Completion Date	Added Capacity	% Allocated to Existing 2017 Capacity	Cost Allocated to Existing 2017 Capacity	% Allocated to 2017-2027 Impact Fees	Cost Allocated to 2017-2027 Impact Fees	% Allocated to Impact Fees after 2027	Cost Allocated to Impact Fees after 2027	
TARRANT REGIONAL WATER DISTRICT (TRWD) PROJECTS														
-	Eagle Mountain Connection Raw Water Line & Pump Station	Const	\$138,867,058	\$138,867,058	2006	2008	47 MGD	39.0%	\$54,158,153	13.0%	\$18,052,718	48.0%	\$66,656,188	
-	Integrated Pipeline & Pump Stations	Const	\$1,076,947,000	\$1,076,947,000	2009	2020	167.5 MGD	0.0%	\$0	24.2%	\$261,117,039	75.8%	\$815,829,961	
-	Richland-Chambers Wetlands	Const	\$61,000,000	\$61,000,000	1999	2013	89.6 MGD	35.1%	\$21,393,267	64.9%	\$39,606,733	0.0%	\$0	
			TOTAL TRWD PROJECTS	\$1,276,814,058					TRWD PROJECTS ELIGIBLE COST	\$318,776,489				
RAW WATER SUPPLY AND TREATMENT PLANTS														
W3-15A	Westside WTP - Phase I (0-12 MGD)	Eng	\$4,972,125	\$4,972,125	2009	2009	-	80.0%	\$3,977,700	20.0%	\$994,425	0.0%	\$0	
W3-15A	Westside WTP - Phase I (0-12 MGD)	Const	\$46,847,759	\$46,847,759	2009	2012	12 MGD	80.0%	\$37,478,207	20.0%	\$9,369,552	0.0%	\$0	
N2-6A	Eagle Mountain Clearwell #3	Eng & Const	\$2,968,644	\$2,968,644	2011	2014	2.5 MG	20.0%	\$593,729	60.0%	\$1,781,186	20.0%	\$593,729	
W3-15B	Westside WTP Expansion 12 MGD to 15 MGD - Membrane Rack	Const	\$1,000,000	\$1,055,500	2016	2017	3 MGD	0.0%	\$0	100.0%	\$1,055,500	0.0%	\$0	
W3-15C	Westside WTP Expansion 15 MGD to 18 MGD - Membrane Rack	Const	\$1,000,000	\$1,055,500	2020	2020	3 MGD	0.0%	\$0	81.0%	\$854,955	19.0%	\$200,545	
-	Clearfork Raw Water Pump Station Parallel Pipeline to Holly WTP	Eng	\$639,000	\$674,465	2020	2020	-	0.0%	\$0	32.0%	\$215,829	68.0%	\$458,636	
-	Clearfork Raw Water Pump Station Parallel Pipeline to Holly WTP	Const	\$6,386,000	\$6,740,423	2021	2022	50 MGD	0.0%	\$0	32.0%	\$2,156,935	68.0%	\$4,583,488	
N2-18B	Expand Second Eagle Mountain Raw Water PS from 35 MGD to 70 MGD	Eng	\$206,000	\$217,433	2020	2021	-	0.0%	\$0	40.0%	\$86,973	60.0%	\$130,460	
N2-18B	Expand Second Eagle Mountain Raw Water PS from 35 MGD to 70 MGD	Const	\$2,060,000	\$2,174,330	2021	2023	35 MGD	0.0%	\$0	40.0%	\$869,732	60.0%	\$1,304,598	
N2-18A	Eagle Mountain WTP Expansion from 105 MGD to 140 MGD	Eng	\$5,000,000	\$5,277,500	2020	2021	-	0.0%	\$0	40.0%	\$2,111,000	60.0%	\$3,166,500	
N2-18A	Eagle Mountain WTP Expansion from 105 MGD to 140 MGD	CM	\$2,778,000	\$2,932,179	2021	2023	-	0.0%	\$0	40.0%	\$1,172,872	60.0%	\$1,759,307	
N2-18A	Eagle Mountain WTP Expansion from 105 MGD to 140 MGD	Const	\$48,690,000	\$51,392,295	2021	2023	35 MGD	0.0%	\$0	40.0%	\$20,556,918	60.0%	\$30,835,377	
			TOTAL RAW WATER SUPPLY AND WATER TREATMENT PLANTS	\$126,308,153					RAW WATER SUPPLY AND WATER TREATMENT PLANT ELIGIBLE COST	\$41,225,877				
REGIONAL TRANSMISSION LINES AND PUMP STATIONS														
S3-51	McCart Pump Station Expansion to 35 MGD	Eng & Const	\$563,375	\$563,375	2013	2013	10 MGD	0.0%	\$0	86.0%	\$484,503	14.0%	\$78,873	
W5-1	3 MGD Westside V Pump Station at Walsh Ranch Tank	Eng	\$173,000	\$182,602	2015	2016	-	0.0%	\$0	68.0%	\$124,169	32.0%	\$58,432	
W5-1	3 MGD Westside V Pump Station at Walsh Ranch Tank	Const	\$1,729,685	\$1,825,683	2016	2017	3 MGD	0.0%	\$0	68.0%	\$1,241,464	32.0%	\$584,218	
N2-8	Expansion of the Northside Pump Station to 70 MGD	Eng & Const	\$1,294,391	\$1,366,230	2018	2019	12 MGD	0.0%	\$0	33.0%	\$450,856	67.0%	\$915,374	
S4-5	3 MGD Southside IV Pump Station at Sun Country Tank	Eng	\$124,000	\$130,882	2019	2020	-	0.0%	\$0	5.0%	\$6,544	95.0%	\$124,338	
S4-5	3 MGD Southside IV Pump Station at Sun Country Tank	Const	\$1,236,000	\$1,304,598	2020	2021	3 MGD	0.0%	\$0	5.0%	\$65,230	95.0%	\$1,239,368	
W4-3	4 MGD Westside IV Pump Station	Eng	\$166,000	\$175,213	2020	2021	-	0.0%	\$0	78.0%	\$136,666	22.0%	\$38,547	
W4-3	4 MGD Westside IV Pump Station	Const	\$1,648,000	\$1,739,464	2021	2022	4 MGD	0.0%	\$0	78.0%	\$1,356,782	22.0%	\$382,682	
-	NS2 48-Inch Transmission Line Phase II	Eng & Const	\$38,334,816	\$40,462,398	2015	2017	-	0.0%	\$0	35.0%	\$14,161,839	65.0%	\$26,300,559	
			TOTAL REGIONAL TRANSMISSION LINES AND PUMP STATIONS	\$47,750,444					REGIONAL TRANSMISSION LINES AND PUMP STATIONS ELIGIBLE COST	\$18,028,053				
STORAGE TANKS														
N3-11	Sendra Ranch Ground Storage Tank & Pump Station**	Eng & Const	\$4,284,791	\$4,284,791	2006	2008	5 MG	63.0%	\$2,699,418	29.0%	\$1,242,589	8.0%	\$342,783	
N4-2B	1.0 MG Northside IV Elevated Storage Tank on Hwy. 287	Eng	\$672,115	\$672,115	2014	2015	-	17.0%	\$114,260	55.0%	\$369,663	28.0%	\$188,192	
N4-2B	1.0 MG Northside IV Elevated Storage Tank on Hwy. 287 & Land Purchase	Const & Land	\$4,068,060	\$4,068,060	2014	2015	1 MG	17.0%	\$691,570	55.0%	\$2,237,433	28.0%	\$1,139,057	
N2-10	5.0 MG Northside II Ground Storage Tank at the Caylor Tank Site	Eng	\$601,729	\$601,729	2014	2015	-	5.0%	\$30,086	40.0%	\$240,692	55.0%	\$330,951	
N2-10	5.0 MG Northside II Ground Storage Tank at the Caylor Tank Site	Const	\$4,879,440	\$4,879,440	2015	2016	5 MG	5.0%	\$243,972	40.0%	\$1,951,776	55.0%	\$2,683,692	
W5-3	1.0 MG Westside V Elevated Storage Tank North of Aledo Road	Eng	\$575,000	\$606,913	2016	2017	-	0.0%	\$0	31.0%	\$188,143	69.0%	\$418,770	
W5-3	1.0 MG Westside V Elevated Storage Tank North of Aledo Road	Const	\$2,575,000	\$2,717,913	2018	2019	1 MG	0.0%	\$0	31.0%	\$842,553	69.0%	\$1,875,360	
W4-10	1.0 MG Westside IV Elevated Storage Tank	Eng & Land	\$575,000	\$606,913	2020	2021	-	0.0%	\$0	47.0%	\$285,249	53.0%	\$321,664	
W4-10	1.0 MG Westside IV Elevated Storage Tank	Const	\$2,575,000	\$2,717,913	2021	2022	1 MG	0.0%	\$0	47.0%	\$1,277,419	53.0%	\$1,440,494	
W3-4	2.5 MG Westside III Ground Storage Tank South of IH-20	Eng	\$1,000,000	\$1,055,500	2020	2021	-	0.0%	\$0	36.0%	\$379,980	64.0%	\$675,520	
W3-4	2.5 MG Westside III Ground Storage Tank South of IH-20	Const	\$2,100,000	\$2,216,550	2021	2022	2.5 MG	0.0%	\$0	36.0%	\$797,958	64.0%	\$1,418,592	
S2-73	5.0 MG Southside II Ground Storage Tank at the McCart Pump Station	Eng	\$330,000	\$348,315	2023	2024	-	0.0%	\$0	25.0%	\$87,079	75.0%	\$261,236	
S2-73	5.0 MG Southside II Ground Storage Tank at the McCart Pump Station	Const	\$3,300,000	\$3,483,150	2024	2025	5 MG	0.0%	\$0	25.0%	\$870,788	75.0%	\$2,612,363	
N3-13	2.0 MG Northside III Elevated Storage Tank	Eng	\$330,000	\$348,315	2022	2022	-	0.0%	\$0	46.0%	\$160,225	54.0%	\$188,090	
N3-13	2.0 MG Northside III Elevated Storage Tank	Const	\$3,300,000	\$3,483,150	2022	2023	2 MG	0.0%	\$0	46.0%	\$1,602,249	54.0%	\$1,880,901	
			TOTAL STORAGE TANKS	\$32,090,765					STORAGE TANKS ELIGIBLE COST	\$12,533,795				
ENGINEERING STUDIES														
-	2004 Water Master Plan 2005-2025	Study	\$1,360,386	\$1,360,386	2003	2005	-	60.0%	\$816,232	40.0%	\$544,154	0.0%	\$0	
-	2014 Water Master Plan 2013-2033	Study	\$768,168	\$768,168	2013	2016	-	20.0%	\$153,634	50.0%	\$384,084	30.0%	\$230,450	
-	Impact Fee Study - 2017-2027	Study	\$117,987	\$117,987	2015	2016	-	0.0%	\$0	100.0%	\$117,987	0.0%	\$0	
			TOTAL ENGINEERING STUDIES	\$2,246,541					ENGINEERING STUDIES ELIGIBLE COST	\$1,046,225				
			TOTAL WATER CIP	\$1,485,209,961					WATER CIP ELIGIBLE COST	\$391,610,439				

Information Sources:

2004 Water System Master Plan, Freese & Nichols
 2014 Water System Master Plan, Freese & Nichols
 10-year CIP Bonds 2016-2026, Tarrant Regional Water District
 Fort Worth Water Department Capital Improvement Program 2015-2019
 *ENR factor of 5.55% used to inflate costs from 2016 dollars to 2017 dollars on proposed projects only.
 **City of Fort Worth cost participation