

Probable Construction Costs for Recommended Potable Water System CIP - Distribution Cost

Improvement type	Improvement Description	Timeframe	CIP ID	Quantity		Estimated Construction Cost (\$2020) ¹	Estimated Construction Cost (\$2022) ²	CIP Cost (\$2022) (includes mark-ups) ^{3,4}
Pipeline Improvement	Replace existing 12-inch diameter pipeline crossing railroad track with 18-inch diameter pipe. Replace existing 12-inch diameter pipelines in Sixth Street, Tracy Boulevard, and Eleventh Street with 24-inch diameter pipe.	2025 System	NCIP-PI-1	1,389 lf		\$627,574	\$681,389	\$920,000
Jack and Bore Improvement	18-inch diameter (24-inch casing)	2025 System	NCIP-PI-2	159 lf		\$109,451	\$118,836	\$160,000
New Pipeline (Developed Area)	12-inch diameter	2025 System	NCIP-PD-12	2,013 lf		\$523,453	\$568,339	\$767,000
New Pipeline (Developed Area)	16-inch diameter	2025 System	NCIP-PD-16	1,051 lf		\$351,924	\$382,102	\$516,000
New Pipeline (Developed Area)	20-inch diameter	2025 System	NCIP-PD-20	609 lf		\$243,594	\$264,482	\$357,000
New Pipeline (Developed Area)	24-inch diameter	2025 System	NCIP-PD-24	3,426 lf		\$1,593,146	\$1,729,758	\$2,335,000
New Pipeline (Undeveloped Area)	12-inch diameter	2025 System	NCIP-PU-12	18,666 lf		\$4,199,794	\$4,559,927	\$6,156,000
New Pipeline (Undeveloped Area)	16-inch diameter	2025 System	NCIP-PU-16	9,270 lf		\$2,642,003	\$2,868,555	\$3,873,000
New Pipeline (Undeveloped Area)	20-inch diameter	2025 System	NCIP-PU-20	7,975 lf		\$2,711,517	\$2,944,030	\$3,974,000
Jack and Bore	Boring and receiving Pits	2025 System	NCIP-JB-PIT	5 each		\$200,000	\$217,150	\$293,000
Jack and Bore	16-inch diameter (24-inch casing)	2025 System	NCIP-JB-16	374 lf		\$258,046	\$280,173	\$378,000
Jack and Bore	24-inch diameter (36-inch casing)	2025 System	NCIP-JB-24	677 lf		\$673,911	\$731,699	\$988,000
Interconnection	PRV at Schulte Road and Bud Lyons Way	2025 System	NCIP-PRV-1	1 L.S.		\$125,000	\$135,719	\$183,000
Interconnection	PRV at Schulte Road and Pavilion Parkway	2025 System	NCIP-PRV-2	1 L.S.		\$125,000	\$135,719	\$183,000
Land Acquisition ⁵	Tank Sites	Buildout System	BCIP-LA-T	1 sites		\$285,000	\$375,000	\$375,000
Storage Reservoir ⁶	1.0 MG Clearwell No. 3 at JJWTP	Buildout System	BCIP-T-CW3	1 L.S.		\$3,008,250	\$3,266,208	\$4,409,000
Storage Reservoir ⁶	1.0 MG Westside Tank	Buildout System	BCIP-T-WS	1 L.S.		\$3,008,250	\$3,266,208	\$4,409,000
Booster Pump Station ⁷	2.16 mgd at Zone 3 Clearwell (JJWTP)	Buildout System	BCIP-PS-Z3	1 L.S.		\$1,554,755	\$1,688,075	\$2,279,000
Booster Pump Station ⁷	6.48 mgd at Westside Zone 1 Tank	Buildout System	BCIP-PS-WSZ1	1 L.S.		\$2,263,735	\$2,457,851	\$3,318,000
Booster Pump Station ⁷	3.46 mgd at Westside Zone 2 Tank	Buildout System	BCIP-PS-WSZ2	1 L.S.		\$1,767,450	\$1,919,009	\$2,591,000
New Pipeline (Developed Area)	16-inch diameter	Buildout System	BCIP-PD-16	11,349 lf		\$3,801,881	\$4,127,893	\$5,573,000
New Pipeline (Developed Area)	20-inch diameter	Buildout System	BCIP-PD-20	1,132 lf		\$452,853	\$491,685	\$664,000
New Pipeline (Undeveloped Area)	12-inch diameter	Buildout System	BCIP-PU-12	84,957 lf		\$19,115,431	\$20,754,582	\$28,019,000
New Pipeline (Undeveloped Area)	16-inch diameter	Buildout System	BCIP-PU-16	27,691 lf		\$7,891,999	\$8,568,739	\$11,568,000
New Pipeline (Undeveloped Area)	20-inch diameter	Buildout System	BCIP-PU-20	6,148 lf		\$2,090,151	\$2,269,382	\$3,064,000
Jack ad Bore	Boring and receiving Pits	Buildout System	BCIP-JB-PIT	11 each		\$440,000	\$477,730	\$645,000
Jack ad Bore	12-inch diameter (21-inch casing)	Buildout System	BCIP-JB-12	1,489 lf		\$885,921	\$961,889	\$1,299,000
Jack ad Bore	16-inch diameter (24-inch casing)	Buildout System	BCIP-JB-16	1,257 lf		\$867,182	\$941,543	\$1,271,000
Interconnection	Westside PRS (12-inch)	Buildout System	BCIP-PRS-WS	1 L.S.		\$250,000	\$271,438	\$366,000
Interconnection	Avenues PRV (12-inch)	Buildout System	BCIP-PRV-AV	1 L.S.		\$125,000	\$135,719	\$183,000
Interconnection ⁸	Plan C PRVs (8-inch to 12-inch)	Buildout System	BCIP-PRV-C	6 valves		\$0	\$0	\$0
SCADA	Pressure Regulating Station No. 1	Buildout System	BCIP-S-1	1 L.S.		\$125,000	\$135,719	\$183,000
SCADA	Pressure Regulating Station No. 2	Buildout System	BCIP-S-2	1 L.S.		\$125,000	\$135,719	\$183,000
SCADA	Pressure Regulating Station No. 3	Buildout System	BCIP-S-3	1 L.S.		\$125,000	\$135,719	\$183,000
SCADA	Pressure Regulating Station No. 4	Buildout System	BCIP-S-4	1 L.S.		\$125,000	\$135,719	\$183,000
SCADA	Pressure Regulating Station No. 5	Buildout System	BCIP-S-5	1 L.S.		\$125,000	\$135,719	\$183,000
SCADA	Pressure Regulating Station No. 6	Buildout System	BCIP-S-6	1 L.S.		\$125,000	\$135,719	\$183,000
Water Master Plan Updates ⁹	Future updates to Water Master Plan	Buildout System	BCIP-WMP	3 each		-	\$1,000,000	\$1,000,000
Total						\$62,942,271	\$69,405,140	\$93,214,000

Source: Tracy Citywide Water System Master Plan Update, Prepared by West Yost Associates (October 2021).

¹ Costs shown are presented in 2020 dollars. Taken from Water Master Plan.² Estimated construction costs escalated to 2022 dollars by Engineering News Record San Francisco Construction Cost Index, November 2020 to January 2022.³ Costs include mark-ups equal to 35 percent (General Contingency: 15 percent; Design and Planning: 10 percent; and Construction Management: 10 percent).⁴ Total rounded to nearest \$1,000.⁵ Assumes each tank site is 1.5 acres. Cost includes Westside Tank site.⁶ Recommended volume based on active volume. Cost assumes the construction of a partially buried prestressed concrete tank.⁷ Recommended capacity based on firm pumping capacity.⁸ The Plan C PRV is needed to resolve an existing pressure issue and the issue is not caused by future development and therefore the cost is excluded.⁹ Three updates assumed at \$500,000 per update. Costs split two-thirds to the potable water system and one-third to the recycled water system.

Note: The City is evaluating the fee methodology and whether or not fees per house square footage or a fee per unit is most appropriate.

Probable Construction Costs for Recommended Potable Water System CIP - Supply

Improvement type	Improvement Description	Timeframe	CIP ID	Quantity		Estimated Construction Cost (\$2020) ¹	Estimated Construction Cost (\$2022) ²	CIP Cost (\$2022) (includes mark-ups) ^{3,4}
Groundwater Wells	Equip Lincoln Well, Park & Ride Well, Ball Park Well and Lewis Manor Well with ammonia addition.	2025 System	NCIP-GW-1	1	L.S.	\$1,500,000	\$1,628,625	\$2,199,000
ASR Expansion Study	Evaluate future ASR well sites and operation scenarios	2025 System	NCIP-ASR	1	L.S.	-	\$350,000	\$350,000
Land Acquisition ⁵	ASR Well Sites	Buildout System	BCIP-LA-W	4	sites	\$190,000	\$250,000	\$250,000
Groundwater Well	2,500 gpm ASR Well in Westside	Buildout System	BCIP-W-WS	1	L.S.	\$3,900,000	\$4,234,425	\$5,716,000
Groundwater Well	2,500 gpm ASR Well in Wainwright	Buildout System	BCIP-W-WA	1	L.S.	\$3,900,000	\$4,234,425	\$5,716,000
Groundwater Well	2,500 gpm ASR Well in Larsen Park	Buildout System	BCIP-W-LP	1	L.S.	\$3,900,000	\$4,234,425	\$5,716,000
Groundwater Well	1,000 gpm ASR Well in Ellis	Buildout System	BCIP-W-EL	1	L.S.	\$2,500,000	\$2,714,375	\$3,664,000
SCADA	Well No. 8	Buildout System	BCIP-S-W8	1	L.S.	\$125,000	\$135,719	\$183,000
Total						\$16,015,000	\$17,781,996	\$23,794,000

Source: Tracy Citywide Water System Master Plan Update, Prepared by West Yost Associates (October 2021).

¹ Costs shown are presented in 2020 dollars. Taken from the Water Master Plan.

² Estimated construction costs escalated to 2022 dollars by Engineering News Record San Francisco Construction Cost Index, November 2020 to January 2022.

³ Costs include mark-ups equal to 35 percent (General Contingency: 15 percent; Design and Planning: 10 percent; and Construction Management: 10 percent).

⁴ Total rounded to nearest \$1,000.

⁵ Assume each ASR well site is .25 acres. Cost includes Westside, Wainwright, Larsen Park, and Ellis ASR Well sites.

Note: The City is evaluating the fee methodology and whether or not fees per house square footage or a fee per unit is most appropriate.

Water Supply Buy-in Costs

Supply Source	Assignment (af/yr)	Normal Year Availability (af/yr) (Reliability,%)		Dry Year Availability (af/yr) (Reliability,%)		Cost (Principal and Estimated Interest Payments)
WSID Assignment (2004) ¹	2,500	1,250	50%	375	15%	\$3,062,500
WSID Assignment (2014) ²	2,500	1,250	50%	375	15%	\$3,625,000
BCID Assignment (2004) ³	5,000	2,500	50%	750	15%	\$6,670,000
Semitropic ⁴	-	-	-	3,500	100%	\$5,506,691
Los Vaqueros Reservoir Participation (2021) ⁵	5,000	-	-	5,000	100%	\$11,500,000
Total	10,000	5,000		10,000		\$30,364,191
Allocated to Existing Users ^{6,7}						(\$6,036,541)
Fee Program Funding						\$24,327,650

Source: Tracy Citywide Water System Master Plan – Tier 1 Development Impact Fee Analysis for the Backbone Buildout Potable and Recycled Water Systems, prepared by West Yost (August 28, 2013) and City of Tracy Los Vaqueros Reservoir Participation Agenda Item 1. B (October 5, 2021).

¹ Cost was \$1,000/af (\$2,500,000); City paid in several installments and paid 5% interest on unpaid balance (\$125,000 in interest payments for 10 years).

² Cost is \$1,000/af (\$2,500,000) with 5% interest on unpaid balance.

³ Cost was \$1,000/af (\$5,000,000); City obtained a 5-year loan from BCID at 5% interest; at the end of five years, the loan was extended at an interest rate of 3%; after two more years, a principle payment of \$2,000,000 was made; and \$3,000,000 was paid in 2014.

⁴ Purchase price was \$5,506,691.

⁵ From the City of Tracy Los Vaqueros Reservoir Participation Agenda Item 1. B (October 5, 2021). The estimated maximum cost for 5,000-acre feet of storage for the City will be around \$10 million and will be shared by the existing rate payers and new developments. Increased costs by 15 percent per the City to cover associated costs.

⁶ Per Steve Bayley, City of Tracy Public Works Department

⁷ Represents the percent allocated prior to the formation of the fee study per the 2013 West Yost Fee Technical Memo.

Note: The City is evaluating the fee methodology and whether or not fees per house square footage or a fee per unit is most appropriate.

Probable Construction Costs for Recommended Water System CIP - Treatment Cost

Improvement type	Total Estimated Cost
Expand Water Treatment Plant (JJWTP) from 30 mgd to 40 mgd ¹	\$56,000,000
Water Treatment Plant Expansion Cost (JJWTP) ¹	\$27,000,000
Total	\$83,000,000

Source: Tracy Citywide Water System Master Plan Update, Prepared by West Yost Associates (October 2021).

¹ A future additional 10 mgd expansion of the JJWTP (for a total treatment capacity of 40 mgd) is recommended to provide the City with additional water treatment capacity, as well as operational flexibility and reliability.

¹ In 2008 the JJWTP was expanded by 15 mgd to provide additional treatment capacity for future development. While some of this capacity is now utilized by the City's existing water users, it is estimated that 9 mgd of the expansion capacity is still available for future developments to use and represents the buy-in cost for the portion of the expanded capacity to be utilized by new developments (estimated to be 9 mgd). The cost of the 2008 expansion was \$45 million, or \$3 million per mgd of capacity. Therefore, the remaining JJWTP expansion cost to be allocated amongst future developments is \$27 million.

Note: The City is evaluating the fee methodology and whether or not fees per house square footage or a fee per unit is most appropriate.

Water Cost per EDU

Department	Cost Attributable to Fee Program	Less: Fund Balance ¹	Remaining Credits/ Reimb. ²	Remaining Cost to Fund	Total EDUs	Cost/ EDU (Rounded)
Distribution ³	\$ 93,214,000	\$ (5,540,332.18)	\$ 5,539,992	\$ 93,213,660	30,239	\$ 3,083
Supply	\$ 48,121,650	\$ (2,370,342.84)	\$ -	\$ 45,751,307	32,992	\$ 1,387
Treatment ⁴	\$ 83,000,000	\$ (4,309,617.98)	\$ 4,181,582	\$ 82,871,964	38,913	\$ 2,130
Total	\$ 224,335,650	\$ (12,220,293)	\$ 9,721,574	\$ 221,836,931		\$ 6,600

¹ The fund balance was split proportional to the current fee. Fund balance provided by the City of Tracy and current as of 06/30/2021.

² Remaining credits due to developers as of 12/2/2021.

³ Tracy Hills Phases 1A, 1B, 2-4, and Hillview are not part of the City Distribution System and will not pay the Water Distribution Fee.

⁴ Treatment capacity is based on buildout EDUs.

Note: The City is evaluating the fee methodology and whether or not fees per house square footage or a fee per unit is most appropriate.

Water Fees

Land Use	EDU Factor	Distribution Fee	Supply Fee	Treatment Fee	Total Fee (Rounded)
Residential (Fee per Dwelling Unit)		<i>(Per Unit)</i>	<i>(Per Unit)</i>	<i>(Per Unit)</i>	
Residential Very Low Density	1.18	\$ 3,638	\$ 1,637	\$ 2,513	\$ 7,788
Residential Low Density	1.00	\$ 3,083	\$ 1,387	\$ 2,130	\$ 6,600
Residential Medium Density (Attached 2-4)	0.82	\$ 2,528	\$ 1,137	\$ 1,747	\$ 5,412
Residential High Density (Attached 4+)	0.56	\$ 1,726	\$ 777	\$ 1,193	\$ 3,696
Nonresidential (Fee per acre)		<i>(Per acre)</i>	<i>(Per Acre)</i>	<i>(Per Acre)</i>	
Office	3.94	\$ 12,147	\$ 5,465	\$ 8,392	\$ 26,004
Retail	4.48	\$ 13,812	\$ 6,214	\$ 9,542	\$ 29,568
Industrial	3.59	\$ 11,068	\$ 4,979	\$ 7,647	\$ 23,694

Note: The City is evaluating the fee methodology and whether or not fees per house square footage or a fee per unit is most appropriate.

Construction Costs for the Recommended Recycled Water System CIP

Improvement type	Improvement Description	Timeframe	CIP ID	Quantity		Estimated Construction Cost (\$2020) ¹	Estimated Construction Cost (\$2022) ²	CIP Cost (\$2022) (includes mark-ups) ^{3,4}
Booster Pump Station	2.45 mgd for Zone C	2025 System	NCIP-PS-C	1	L.S.	\$1,441,820	\$1,565,456	\$2,113,000
New Pipeline (Developed Area)	8-inch diameter	2025 System	NCIP-PD-8	4,962	lf	\$868,372	\$942,835	\$1,273,000
New Pipeline (Developed Area)	12-inch diameter	2025 System	NCIP-PD-12	3,055	lf	\$778,900	\$845,691	\$1,142,000
New Pipeline (Developed Area)	24-inch diameter	2025 System	NCIP-PD-24	131	lf	\$60,939	\$66,165	\$89,000
New Pipeline (Developed Area)	30-inch diameter	2025 System	NCIP-PD-30	3,218	lf	\$1,818,131	\$1,974,036	\$2,665,000
New DMC Pipeline (Developed Area)	30-inch diameter	2025 System	NCIP-PD-DMC-30	23,683	lf	\$13,380,877	\$14,528,289	\$19,613,000
Jack and Bore	Boring and Receiving Pits	2025 System	NCIP-JB-PIT	2	each	\$80,000	\$86,860	\$117,000
Jack and Bore	8-inch diameter (16-inch casing)	2025 System	NCIP-JB-8	154	lf	\$79,907	\$86,759	\$117,000
Jack and Bore	30-inch diameter (42-inch casing)	2025 System	NCIP-JB-30	434	lf	\$483,956	\$525,455	\$709,000
Jack and Bore (DMC Pipeline)	Boring and Receiving Pits	2025 System	NCIP-JB-DMC-PIT	1	each	\$40,000	\$43,430	\$59,000
Jack and Bore (DMC Pipeline)	30-inch diameter (42-inch casing)	2025 System	NCIP-JB-DMC-30	178	lf	\$198,418	\$215,432	\$291,000
Land Acquisition ⁵	Tank Sites	Buildout System	BCIP-LA-T	1	sites	-	-	\$375,000
Storage Reservoir ⁶	5.7 MG Zone A Tank	Buildout System	BCIP-T-A	1	L.S.	\$5,809,500	\$6,307,665	\$8,515,000
Storage Reservoir ⁶	2.3 MG WWTP Diurnal Storage Tank	Buildout System	BCIP-T-DS	1	L.S.	\$4,262,500	\$4,628,010	\$6,248,000
Booster Pump Station	5.00 mgd Zone A Expansion	Buildout System	BCIP-PS-A	1	L.S.	\$1,818,715	\$1,974,670	\$2,666,000
Booster Pump Station	6.34 mgd for Zone F	Buildout System	BCIP-PS-F	1	L.S.	\$2,016,095	\$2,188,975	\$2,955,000
Booster Pump Station	8.32 mgd for Zone B	Buildout System	BCIP-PS-B	1	L.S.	\$2,309,610	\$2,507,659	\$3,385,000
Booster Pump Station	3.89 mgd for Zone D	Buildout System	BCIP-PS-D	1	L.S.	\$1,654,515	\$1,796,390	\$2,425,000
Booster Pump Station	2.88 mgd for Zone E	Buildout System	BCIP-PS-E	1	L.S.	\$1,505,630	\$1,634,738	\$2,207,000
New Pipeline (Developed Area)	16-inch diameter	Buildout System	BCIP-PD-16	2,499	lf	\$837,072	\$908,851	\$1,227,000
New Pipeline (Developed Area)	24-inch diameter	Buildout System	BCIP-PD-24	21,852	lf	\$10,161,175	\$11,032,497	\$14,894,000
New Pipeline (Undeveloped Area)	12-inch diameter	Buildout System	BCIP-PU-12	19,557	lf	\$4,302,643	\$4,671,595	\$6,307,000
New Pipeline (Undeveloped Area)	16-inch diameter	Buildout System	BCIP-PU-16	5,343	lf	\$1,522,836	\$1,653,419	\$2,232,000
New Pipeline (Undeveloped Area)	18-inch diameter	Buildout System	BCIP-PU-18	9,202	lf	\$2,898,523	\$3,147,072	\$4,249,000
New Pipeline (Undeveloped Area)	24-inch diameter	Buildout System	BCIP-PU-24	7,219	lf	\$2,851,449	\$3,095,961	\$4,180,000
New Pipeline (Undeveloped Area)	30-inch diameter	Buildout System	BCIP-PU-30	5,882	lf	\$2,823,234	\$3,065,327	\$4,138,000
Jack ad Bore	Boring and receiving Pits	Buildout System	BCIP-JB-PIT	5	each	\$200,000	\$217,150	\$293,000
Jack ad Bore	24-inch diameter (36-inch casing)	Buildout System	BCIP-JB-24	1,234	lf	\$1,227,805	\$1,333,089	\$1,800,000
Jack and Bore	30-inch diameter (42-inch casing)	Buildout System	BCIP-JB-30	359	lf	\$400,168	\$434,482	\$587,000
Water Master Plan Updates ⁷	Future updates to Water Master Plan	Buildout System	BCIP-WMP	3	each	-	\$500,000	\$500,000
Additional studies, Legal Costs and Staff and Consultant Time ⁸						-	-	\$1,000,000
Total						\$65,832,790	\$71,977,960	\$98,371,000

Source: Tracy Citywide Water System Master Plan Update, Prepared by West Yost Associates (October 2021).

¹ Costs shown are presented in 2020 dollars. Taken from Water Master Plan.² Estimated construction costs escalated to 2022 dollars by Engineering News Record San Francisco Construction Cost Index, November 2020 to January 2022.³ Costs include mark-ups equal to 35 percent (General Contingency: 15 percent; Design and Planning: 10 percent; and Construction Management: 10 percent).⁴ Total rounded to nearest \$1,000.⁵ Assumes each tank site is 1.5 acres. Cost includes Westside Tank Site.⁶ Recommended volume based on active volume. Cost assumes the Zone A tank will be an aboveground welded steel tank, and the WWTP will be a partially buried pre-stressed concrete tank.⁷ Three updates assumed at \$500,000 per update. Costs split two-thirds to the potable water system and one-third to the recycled water system.⁸ Includes the costs to account for additional studies, legal costs and staff and consultant time associated with the recycled water exchange.

Note: The City is evaluating the fee methodology and whether or not fees per house square footage or a fee per unit is most appropriate.

Recycled Water Cost per EDU

Department	Cost Attributable to Fee Program	Less: Fund Balance¹	Remaining Credits/ Reimb.²	Remaining Cost to Fund	Total EDUs	Cost/ EDU (Rounded)
Recycled Water	\$ 98,371,000	\$ (882,230)	\$ 1,311,825	\$ 98,800,595	38,913	\$ 2,539

¹ Fund balance provided by the City of Tracy and current as of 06/30/2021.

² Remaining credits provided by the City of Tracy as of 12/2/2021. Includes \$201,418.27 for the Corral Hollow Road widening project for a 12" recycled water line (Corral Hollow - DMC to Tracy Hills Drive). The credit is based on the OIA for the Corral Hollow Road widening improvements that are to be constructed in connection with the KT Project in the City of Tracy.

Note: The City is evaluating the fee methodology and whether or not fees per house square footage or a fee per unit is most appropriate.

Recycled Water Fee

Land Use	EDU Factor	Recycled Water Fee
Residential (Fee per Dwelling Unit)		<i>(Per Unit)</i>
Residential Very Low Density	1.18	\$ 2,996
Residential Low Density	1.00	\$ 2,539
Residential Medium Density (Attached 2-4)	0.82	\$ 2,082
Residential High Density (Attached 4+)	0.56	\$ 1,422
Nonresidential (Fee per acre)		<i>(Per acre)</i>
Office	3.94	\$ 10,004
Retail	4.48	\$ 11,375
Industrial	3.59	\$ 9,115

Note: The City is evaluating the fee methodology and whether or not fees per house square footage or a fee per unit is most appropriate.