WEST YOST ASSOCIATES
Consulting Engineers

TECHNICAL MEMORANDUM

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SUBJECT: Citywide Water System Master Plan – Tier 1 Development Impact Fee Analysis for the Backbone Buildout Potable and Recycled Water Systems

BACKGROUND

On December 5, 2012, West Yost Associates (West Yost) completed the Citywide Water System Master Plan to assist the City of Tracy (City) in developing backbone potable and recycled water systems to serve potable and recycled water demands, respectively, associated with the buildout of the City's Sphere of Influence (SOI) as defined in the City's General Plan. Evaluations performed using the City's potable and recycled water system hydraulic models identified numerous core backbone capital improvement projects that would be required to provide potable and recycled water service to the City's future customers. These identified backbone projects were then used to develop a comprehensive capital improvement program (CIP) for the buildout potable and recycled water systems.

Preliminary estimates of capital construction costs for the recommended buildout potable and recycled water systems CIP (based on 2012 dollars) are summarized in Chapter 10 of the Citywide Water System Master Plan. It should be noted that an economic adjustment has been included in this development impact fee analysis and is applied to the infrastructure fee components to reflect the current construction bidding climate. Therefore, on an annual basis into the future, the recommended development impact fees described herein will need to be adjusted based on future economic conditions.

The purpose of this Technical Memorandum (TM) is to assist the City in calculating appropriate Tier 1 cost allocations (*i.e.,* Tier 1 development impact fees) to fund the required new "backbone" infrastructure improvements for both the buildout potable and recycled water systems and the need for additional potable water supply and treatment, which were identified in the Citywide Water System Master Plan.

Backbone buildout facilities include potable and recycled water infrastructure required for system transmission capacity and looping, and pipeline improvements located in major arterials/roadways. Costs for these backbone buildout facilities are to be shared by future development based on the methodologies described in this TM. Costs for non-backbone facilities (*e.g.*, all "on-site" facilities required for a specific development project) will be paid based on individual Tier 2 development impact fees, to be established when the Tier 2 analyses are conducted. Overall water system infrastructure development impact fees for future development projects will be the sum of the Tier 1 development impact fee (described herein) and the Tier 2 development impact fee (to be determined at a later date based on future analysis of required "on-site" facilities).

The fee for additional potable water supply and treatment capacity includes costs associated with the acquisition and treatment of additional potable water supplies, or supplies required to provide water supply reliability.

The following sections describe the methodology used for determining the Tier 1 cost allocation for the backbone buildout potable and recycled water system infrastructure including potable water supply and treatment requirements. West Yost received authorization to perform this task as a part of the Notice to Proceed for the Citywide Water System Master Plan project.

METHODOLOGY

The methodology used to develop the Tier 1 development impact fee is presented separately below for each component of the development impact fee (*i.e.*, potable water system infrastructure, recycled water system infrastructure, water supply, and water treatment capacity).

Potable Water System Infrastructure

A complete description of the need for and capacity of new potable water system facilities to serve buildout potable water demands is provided in Chapter 8 of the 2012 Citywide Water System Master Plan. Locations of the proposed buildout potable water system facilities, as identified in the Citywide Water System Master Plan, as well as those facilities considered to be backbone facilities, are shown on Figure 1.

It should be noted that because the Tracy Hills development is essentially a "stand-alone" system separated from the City's other water system facilities, the costs for potable water system infrastructure improvements to serve the Tracy Hills development are not included in this TM. Instead, costs for Tracy Hills potable water system infrastructure will be evaluated in conjunction with subsequent Tier 2 evaluations to be prepared for the Tracy Hills development.

It should also be noted that the proportionate share of the buildout potable water system facilities cost for development projects with approved water supply[1] is also not included in this development impact fee analysis because these projects have already been approved and are currently on-going and have a development impact fee already determined and/or paid to utilize existing or proposed potable water system infrastructure. Consequently, the associated development impact fees from development projects with approved water supply were not evaluated in this TM.

For clarity, the following list summarizes the development projects included in the potable water system infrastructure fee component of the development impact fee analysis:

Future Service Areas

Westside Residential (URs 5, 7, 8)	Westside Industrial
UR 1	Eastside Industrial
South Linne (UR 11)	Larch Clover
Tracy Gateway (excluding Phase 1)	Chrisman Road
Cordes Ranch (UR 6)	Rocha
Bright (UR 4)	Berg/Byron
Catellus (UR 3)	Kagehiro
Filios (UR 2)	Keenan
I-205 Expansion	

Land use information for each development project listed above can be found in Appendix C of the Citywide Water Master Plan. However, land use information for the Cordes Ranch project was updated based on information received on May 9, 2012 from City staff, which provided more current land use data.

[1] Includes Residential Areas Specific Plan, Industrial Areas Specific Plan, I-205 Corridor Specific Plan, Plan "C", Northeast Industrial, South MacArthur, Downtown Specific Plan, Infill, Ellis Specific Plan, Tracy Gateway – Phase 1, and Holly Sugar Sports Park.

Table 1 summarizes the capital improvement project costs included in this Tier 1 development impact fee analysis for the backbone buildout potable water system infrastructure, which are required to serve potable water demands to the future service areas listed above. The total backbone buildout potable water system CIP cost included in this evaluation is equal to approximately $96.7M. Improvements presented in Table 1 were based on the potable water system CIP developed in Chapter 10 of the Citywide Water System Master Plan, but include the following modifications:

- Removed all potable water infrastructure improvements required to serve the Tracy Hills development;
- Removed cost for John Jones Water Treatment Plant (JJWTP) Expansion (this will be included in the water treatment capacity fee component discussed below);
- Removed pipeline improvements not identified as backbone facilities for potable water system transmission capacity and looping, except for pipeline improvements located in major arterials/roadways; and
- Accounted for funding already identified from development projects such as Tracy Gateway (Phase 1) and Ellis Specific Plan (refer to Table 1 for details).

Backbone buildout potable water system infrastructure costs can be allocated based on the proportionate share of demands (flow) associated with each residential dwelling unit or non-residential acre of land to be served with potable water. A unit quantity of water such as an Equivalent Dwelling Unit (EDU) can be used to determine the unit cost required to fund the recommended backbone buildout potable water system. For the City, one EDU is defined as the average day demand for a low density residential unit and equals 429 gallons per day (gpd). Table 2 summarizes the number of EDUs associated with potable water use for each of the City's land use designations based on the corresponding adopted unit water demand factors in the Citywide Water System Master Plan.

Table 1. Summary of Probable Backbone Potable Water System Construction Costs Included in Fee Analysis[a,b,c,d]

Improvement Type	Improvement Description	CIP ID (see Figure 1)	Quantity		Estimated Construction Cost, $[e]	CIP Cost, $ (includes mark-ups)[f,g]	Existing Funding Source, (F) Full; (P) Partial	Amount of Existing Funding, $	Revised CIP Cost, $ (includes mark-ups)[f,g,h]
Land Acquisition[i]	Tank Sites	BCIP-LA-T	4	sites	-	900,000	(P) Gateway Phase 1 and Ellis	248,000	652,000
Land Acquisition[j]	ASR Well Sites	BCIP-LA-W	3	sites	-	113,000	(P) Gateway Phase 1 and Ellis	61,000	52,000
Storage Reservoir[k]	2.0 MG Clearwell at JJWTP	BCIP-T-CW	1	L.S.	3,198,900	4,478,000	(P) Ellis	2,818,200	1,659,800
Storage Reservoir[k]	1.0 MG Catellus Tank	BCIP-T-CA	1	L.S.	2,422,020	3,391,000	--		3,391,000
Storage Reservoir[k]	1.5 MG Tracy Gateway Zone 1 Tank	BCIP-T-GAZ1	1	L.S.	2,810,460	3,935,000	(F) Gateway Phase 1	3,935,000	-
Storage Reservoir[k]	1.5 MG Tracy Gateway Zone 2 Tank	BCIP-T-GAZ2	1	L.S.	2,810,460	3,935,000	--		3,935,000
Storage Reservoir[k]	0.5 MG Patterson Pass Tank	BCIP-T-PP	1	L.S.	2,033,580	2,847,000	--		2,847,000
Storage Reservoir[k]	1.5 MG Cordes Ranch Tank	BCIP-T-CR	1	L.S.	2,810,460	3,935,000	--		3,935,000
Groundwater Well	2,500 gpm ASR Well in Tracy Gateway	BCIP-W-GA	1	L.S.	3,100,000	4,340,000	(F) Gateway Phase 1	4,340,000	-
Groundwater Well	2,500 gpm ASR Well in Cordes Ranch	BCIP-W-CR	1	L.S.	3,100,000	4,340,000	--		4,340,000
Groundwater Well	2,500 gpm ASR Well in Ellis	BCIP-W-EL	1	L.S.	3,100,000	4,340,000	(P) Ellis	926,800	3,413,200
Booster Pump Station[l,m]	9.65 mgd at Zone 2 BPS (JJWTP)	BCIP-PS-Z2	1	L.S.	714,290	1,000,000	--		1,000,000
Booster Pump Station[l]	6.48 mgd at Zone 3-City-side BPS (JJWTP)	BCIP-PS-Z3	1	L.S.	1,822,595	2,552,000	(P) Ellis	938,000	1,614,000
Booster Pump Station[l]	6.48 mgd at Catellus Tank	BCIP-PS-CA	1	L.S.	1,822,595	2,552,000	--		2,552,000
Booster Pump Station[l]	6.48 mgd at Tracy Gateway Zone 1 Tank	BCIP-PS-GAZ1	1	L.S.	1,822,595	2,552,000	(F) Gateway Phase 1	2,552,000	-
Booster Pump Station[l]	6.48 mgd at Tracy Gateway Zone 2 Tank	BCIP-PS-GAZ2	1	L.S.	1,822,595	2,552,000	--		2,552,000
Booster Pump Station[l]	6.48 mgd at Cordes Ranch Tank	BCIP-PS-CR	1	L.S.	1,822,595	2,552,000	--		2,552,000
New Pipeline (Developed Area)	8-inch diameter	BCIP-PD-8	1,490	lf	230,950	323,000	--		323,000
New Pipeline (Developed Area)	10-inch diameter	BCIP-PD-10	820	lf	143,500	201,000	--		201,000
New Pipeline (Developed Area)	12-inch diameter	BCIP-PD-12	12,610	lf	2,648,100	3,707,000	--		3,707,000
New Pipeline (Developed Area)	14-inch diameter	BCIP-PD-14	-	lf	-	-	--		-
New Pipeline (Developed Area)	16-inch diameter	BCIP-PD-16	2,930	lf	791,100	1,108,000	(P) Ellis	350,000	758,000
New Pipeline (Developed Area)	18-inch diameter	BCIP-PD-18	-	lf	-	-	--		-
New Pipeline (Developed Area)	20-inch diameter	BCIP-PD-20	-	lf	-	-	--		-
New Pipeline (Developed Area)	24-inch diameter	BCIP-PD-24	5,310	lf	1,991,250	2,788,000	(F) MacArthur	2,788,000	-
New Pipeline (Undeveloped Area)	8-inch diameter	BCIP-PU-8	-	lf	-	-	--		-
New Pipeline (Undeveloped Area)	10-inch diameter	BCIP-PU-10	2,100	lf	315,000	441,000	--		441,000
New Pipeline (Undeveloped Area)	12-inch diameter	BCIP-PU-12	85,520	lf	15,393,600	21,551,000	(P) Ellis	1,537,200	20,013,800
New Pipeline (Undeveloped Area)	14-inch diameter	BCIP-PU-14	-	lf	-	-	--		-
New Pipeline (Undeveloped Area)	16-inch diameter	BCIP-PU-16	79,090	lf	18,190,700	25,467,000	(P) Gateway Phase 1	902,000	24,565,000
New Pipeline (Undeveloped Area)	18-inch diameter	BCIP-PU-18	940	lf	239,700	336,000	(P) Ellis	127,400	208,600
New Pipeline (Undeveloped Area)	20-inch diameter	BCIP-PU-20	44,390	lf	12,207,250	17,090,000	(P) Gateway Phase 1 and Ellis	8,646,200	8,443,800
New Pipeline (Undeveloped Area)	24-inch diameter	BCIP-PU-24	30	lf	9,600	13,000	(P) Ellis	7,000	6,000
Bore and Jack	12-inch diameter (21-inch casing)	BCIP-BJ-12	560	lf	268,800	376,000	--		376,000
Bore and Jack	16-inch diameter (24-inch casing)	BCIP-BJ-16	990	lf	549,450	769,000	--		769,000
Bore and Jack	18-inch diameter (24-inch casing)	BCIP-BJ-18	80	lf	44,400	62,000	--		62,000
Bore and Jack	20-inch diameter (30-inch casing)	BCIP-BJ-20	740	lf	506,900	710,000	(P) Ellis	238,000	472,000
Bore and Jack	24-inch diameter (30-inch casing)	BCIP-BJ-24	80	lf	54,800	77,000	(F) MacArthur	77,000	-
Interconnection	Pressure Regulating Station #6 (12-inch)	BCIP-PRS-6	1	L.S.	200,000	280,000	(F) Gateway Phase 1	280,000	-
Interconnection	Pressure Regulating Station #7 (12-inch)	BCIP-PRS-7	1	L.S.	200,000	280,000	--		280,000

Table 1. Summary of Probable Backbone Potable Water System Construction Costs Included in Fee Analysis[a,b,c,d]

Improvement Type	Improvement Description	CIP ID (see Figure 1)	Quantity		Estimated Construction Cost, $[e]	CIP Cost, $ (includes mark-ups)[f,g]	Existing Funding Source, (F) Full; (P) Partial	Amount of Existing Funding, $	Revised CIP Cost, $ (includes mark-ups)[f,g,h]
Interconnection	Pressure Regulating Station #8 (12-inch)	BCIP-PRS-8	1	L.S.	200,000	280,000	--		280,000
Interconnection	Pressure Regulating Station #9 (12-inch)	BCIP-PRS-9	1	L.S.	200,000	280,000	--		280,000
Interconnection	Pressure Regulating Station #10 (12-inch)	BCIP-PRS-10	1	L.S.	200,000	280,000	--		280,000
Interconnection	Ellis Zone 2 PRV (12-inch)	BCIP-PRV-EL	1	L.S.	100,000	140,000	--		140,000
Backup Generator	ASR Well in Tracy Gateway	BCIP-BU-W-GA	1	L.S.	200,000	280,000	(F) Gateway Phase 1	280,000	-
Backup Generator	ASR Well in Cordes Ranch	BCIP-BU-W-CR	1	L.S.	200,000	280,000	--		280,000
Backup Generator	ASR Well in Ellis	BCIP-BU-W-EL	1	L.S.	200,000	280,000	--		280,000
					TOTAL[n]	**$ 127,713,000**	**--**	**$ 31,051,800**	**$ 96,661,200**

[a] Costs shown are presented in 2012 dollars.
[b] Excludes potable water system infrastructure costs for the Tracy Hills development.
[c] Excludes construction cost for the JJWTP Expansion as this improvement will be included in the Water Supply Fee.
[d] Includes backbone pipeline improvements to provide for water system transmission capacity and looping, and pipeline improvements located in major arterials/roadways (*e.g.* , 11th Street).
[e] Estimated construction costs do not yet reflect an adjustment, as discussed with the City's Engineer, to account for the current economic bidding climate.
[f] Costs include mark-ups equal to 40 percent (General Contingency: 15 percent; Design and Planning: 10 percent; Construction Management: 10 percent; and Program Administration: 5 percent).
[g] Total rounded to nearest $1,000.
[h] Revised CIP Cost accounts for and removes funding already identified from existing development projects.
[i] Assumes each tank site is 1.5 acres. Cost includes Catellus, Tracy Gateway Zone 1 and 2, and Cordes Ranch Tank sites.
[j] Assumes each ASR well site is 0.25 acres. Cost includes Tracy Gateway, Cordes Ranch and Ellis ASR Well sites.
[k] Recommended volume based on active volume required. Cost assumes the construction of a partially buried prestressed concrete tank.
[l] Recommended capacity based on firm pumping capacity.
[m] Cost is only for the materials and installation of the new booster pump, and does not include related sitework such as pump house, backup power, etc. since this is an existing pump station.
[n] Total is subject to change if City staff determines that there is additional existing or proposed funding for any of the capital improvements projects included in this table.

Table 2. City of Tracy Equivalent Dwelling Units (EDU) for Potable Water Use

Land Use Designation	Unit Water Demand Factor[(a)]	Equivalent Unit Water Demand Factor	EDU Conversion Factor[(b)]
Residential			
Very Low Density	429 gpd/du	429 gpd/du	1.00 EDU/du
Low Density	429 gpd/du	429 gpd/du	1.00 EDU/du
Medium Density[(c)]	310 gpd/du	310 gpd/du	0.72 EDU/du
High Density[(d)]	220 gpd/du	220 gpd/du	0.51 EDU/du
Commercial	2.0 af/ac/yr[(e)]	1,785 gpd/ac[(e)]	4.16 EDU/ac[(e)]
Office	1.5 af/ac/yr[(e)]	1,339 gpd/ac[(e)]	3.12 EDU/ac[(e)]
Industrial	1.5 af/ac/yr[(e)]	1,339 gpd/ac[(e)]	3.12 EDU/ac[(e)]

(a) Based on data presented in Table 4-14 from the Citywide Water System Master Plan.
(b) One EDU is defined as the average day demand for a low density residential dwelling unit and equals 429 gpd.
(c) Applies to structures with two to four attached dwelling units with an estimated average 2.7 people per dwelling unit.
(d) Applies to structures with five or more attached dwelling units with an estimated average 2.2 people per dwelling unit.
(e) Factor to be applied to net acres (85 percent of total gross acres).

The total number of EDUs to be included in this development impact fee analysis was determined based on the total number of residential dwelling units and net acres[2] from Commercial, Office, and Industrial land uses as projected from the future service areas listed above. These residential dwelling units and non-residential acreages were converted to EDUs based on the EDU conversion factors presented in Table 2. As presented in Table 3, a total of 19,396 EDUs were included in this development impact fee analysis for the potable water system infrastructure fee component.

[2] As discussed with City staff, net acres are defined as 85 percent of total gross acres.

Table 3. Calculation of Potable Water System Infrastructure Fee Component[a]

Land Use Designation	Total Dwelling Units or Net Acres[a,b]	EDU Conversion Factor[c]	EDUs
Residential			
Very Low Density	630 du	1.00 EDU/du	630
Low Density	2,600 du	1.00 EDU/du	2,600
Medium Density[d]	2,466 du	0.72 EDU/du	1,776
High Density[e]	2,532 du	0.51 EDU/du	1,291
Commercial	847 ac	4.16 EDU/ac	3,524
Office	593 ac	3.12 EDU/ac	1,850
Industrial	2,476 ac	3.12 EDU/ac	7,725
		Total EDUs	19,396
		Total CIP Cost (refer to Table 1)[f]	$96,661,200
		Potable Water System Infrastructure Fee	$4,984/EDU
		Potable Water System Infrastructure Fee with 2012 Economic Adjustment[g]	$4,236/EDU

[a] Refer to Appendix C of the Citywide Water System Master Plan. Land use information for the Cordes Ranch project was updated based on information received on May 9, 2012.
[b] As discussed with City staff, net acres are defined as 85 percent of total gross acres.
[c] Refer to Table 2.
[d] Applies to structures with two to four attached dwelling units with an estimated average 2.7 people per dwelling unit.
[e] Applies to structures with five or more attached dwelling units with an estimated average 2.2 people per dwelling unit.
[f] Costs are in 2012 dollars.
[g] As discussed with City staff, an economic adjustment factor of 15 percent was applied to reduce the anticipated potable water system infrastructure fee component for 2012. This factor will need to be reviewed and adjusted at least annually to better reflect current costs.

As shown in Table 3, the total backbone buildout potable water system CIP cost was divided by the total number of projected EDUs to develop the potable water system infrastructure fee component of the Tier 1 development impact fee. As discussed with City staff, an economic adjustment factor of 15 percent was applied to reduce the anticipated potable water system infrastructure fee component for 2012. This adjustment factor reflects the current (more favorable) bidding climate and will need to be reviewed and adjusted at least annually to better reflect current costs. Based on a total CIP cost of $96.7M, a total of 19,396 EDUs, and a 15 percent economic adjustment factor, the resulting potable water system infrastructure fee is equal to $4,236 per EDU for current construction.

Using this methodology, the proposed backbone buildout potable water system CIP cost will be paid for by future developments through the potable water system infrastructure fee component as determined above. Furthermore, capital improvement costs for the backbone buildout potable water system can be allocated to each development project based on the projected number of EDUs proposed to be developed within each project. It should be noted that the projected number of EDUs should be based on the total dwelling units or net acres (defined as 85 percent of total gross acres) to be developed, and does not include Institutional/Public Facilities land use.

Recycled Water System Infrastructure

A complete description of the need for and capacity of new recycled water system facilities to serve buildout recycled water demands is provided in Chapter 9 of the 2012 Citywide Water System Master Plan. Locations of the proposed buildout recycled water system facilities, as identified in the Citywide Water System Master Plan, as well as those facilities considered to be backbone facilities, are shown on Figure 2.

For clarity, the following list summarizes the development projects included in the recycled water system infrastructure component of the development impact fee analysis:

Future Service Areas

- Westside Residential (URs 5, 7, 8)
- UR 1
- Ellis Specific Plan[3]
- South Linne (UR 11)
- Tracy Hills
- Tracy Gateway (excluding Phase 1)
- Cordes Ranch (UR 6)
- Bright (UR 4)
- Catellus (UR 3)
- Filios (UR 2)
- I-205 Expansion
- Westside Industrial
- Eastside Industrial
- Larch Clover
- Chrisman Road
- Rocha
- Berg/Byron
- Kagehiro
- Keenan

It should be noted that the projects listed above are identical to the potable water system infrastructure fee component with the exception of the Ellis Specific Plan and Tracy Hills projects, which are included in the evaluation of the recycled water system infrastructure fee. Land use information for each development project listed above can be found in Appendix C of the Citywide Water System Master Plan. However, land use information for the Ellis Specific Plan and Cordes Ranch projects were updated based on information received on April 2, 2012 and May 9, 2012, respectively, from City staff, which provided more current land use data.

[3] Dwelling units from Medium Density Residential land use do not plan to use recycled water.

Table 4 summarizes the capital improvement project costs included in this Tier 1 development impact fee analysis for the backbone buildout recycled water system, which are required to serve recycled water demands to the future service areas listed above. The total backbone buildout recycled water system CIP cost included in this evaluation is equal to approximately $133.9M. Improvements presented in Table 4 were based on the recycled water system CIP developed in Chapter 10 of the Citywide Water System Master Plan, but include the following modifications:

- Removed pipeline improvements not identified as backbone facilities for recycled water system transmission capacity and looping, except for pipeline improvements located in major arterials/roadways; and
- Included backbone recycled water system facilities for Tracy Hills.

Costs shown in Table 4 represent costs to deliver recycled water to the various use areas, but not to distribute recycled water within the use areas. The cost for recycled water pipelines in major arterials (roadways such as West Schulte Road and Mountain House Parkway) has been included in the shared backbone facilities listed in Table 4. It should also be noted that the cost to deliver recycled water to the existing City parks is included in the recycled water system infrastructure fee.

It was shown in Chapter 9 of the Citywide Water System Master Plan that seasonal storage of recycled water would not be required because the maximum day recycled water demand is less than the City's wastewater treatment plant (WWTP) average dry weather influent flow. Also, the cost for any upgrades to the City's WWTP is likewise not included in this development impact fee calculation.

Similar to the methodology used for the backbone buildout potable water system, EDUs can be used to determine the unit cost to fund the recommended backbone buildout recycled water system. However, the recycled water system infrastructure fee includes two components: direct "on-site" recycled water use and indirect "off-site" benefits for the potable water system.

The direct use of recycled water to meet water demands is considered an "on-site" recycled water system infrastructure fee. Because the use of recycled water also benefits potable water users by providing a potable water supply offset, potable water users would also be required to pay a proportionate share for the backbone buildout recycled water system in the form of an "off-site" recycled water system infrastructure fee. The proportionate share of the backbone recycled water system to be paid by potable water users will be based on their projected potable water use (refer to Table 2). Table 5 summarizes the number of EDUs associated with each of the City's land use designations based on the corresponding adopted unit water demand factors in the Citywide Water System Master Plan.

Table 4. Summary of Probable Backbone Recycled Water System Construction Costs Included in Fee Analysis

Improvement	Size/Capacity	CIP Cost, $M[a,b]
Pipelines	Lineal Feet	
8-inch Diameter	96,200	18.6
12-inch Diameter	32,400	9.3
16-inch Diameter	14,200	5.4
24-inch Diameter	29,300	15.4
30-inch Diameter	69,700	44.4
Utility Crossings (Jack and Bore)	Lineal Feet	
8-inch Diameter (11th and Irrigation at Corral Hollow Road)	500	0.30
8-inch Diameter (Railroad at Corral Hollow)	200	0.10
16-inch Diameter (Railroad and Irrigation at MacArthur)	500	0.40
16-inch Diameter (Railroad at MacArthur Extension)	200	0.20
24-inch Diameter (DMC at Corral Hollow)	500	0.6
24-inch Diameter (California Aqueduct at Corral Hollow)	500	0.6
30-inch Diameter (11th and Irrigation at Lammers)	200	0.30
30-inch Diameter (Railroad and I-205 at Lammers/Byron)	200	0.30
30-inch Diameter (Irrigation at Lammers/W. Schulte)	200	0.30
30-inch Diameter (Irrigation at W. Schulte)	200	0.30
30-inch Diameter (DMC at W. Schulte)	500	0.7
30-inch Diameter (Railroad at Corral Hollow/W. Schulte)	200	0.30
30-inch Diameter (Irrigation at Corral Hollow)	200	0.30
30-inch Diameter (Railroad at Corral Hollow/W. Linne)	200	0.30
Pump Stations[c]	mgd	
Zone A	23	7.3
Zone B	14	4.5
Zone C	4.1	2.4
Tracy Hills Zone C	6.5	3.1
Tracy Hills Zone D	4.3	2.5
Diurnal Storage[c]	MG	
Holly Drive WWTP	3.0	4.1
Zone Storage at Zone A Hydraulic Grade	5.0	6.2
Zone Storage in Tracy Hills	2.0	3.4
Other Cost Items	No. of Parks	
Cost of Converting Existing City Parks to Recycled Water	29	2.3
Total CIP Cost	—	133.9

(a) Estimated construction costs do not yet reflect an adjustment, as discussed with the City's Engineer, to account for the current economic bidding climate.

(b) CIP costs include mark-ups equal to 40 percent (General Contingency: 15 percent; Design and Planning: 10 percent; Construction Management: 10 percent; and Program Administration: 5 percent) and based on 2012 dollars.

(c) Property costs were included for the three storage tank/booster pump stations sites based on 1.5 acres for the Zone Storage at Zone A Hydraulic Grade and 1.0 acres for Tracy Hills. It is assumed that the Holly Drive WWTP tank and booster pump station will be on City property at the Holly Drive WWTP.

Table 5. City of Tracy Equivalent Dwelling Units (EDU) for Recycled Water Use[a]

Land Use Designation	EDU Conversion Factor for "On-Site" Fee	EDU Conversion Factor for "Off-Site" Fee[b]	Total EDU Conversion Factor[c]
Residential			
Very Low Density	--	1.00 EDU/du	1.00 EDU/du
Low Density	--	1.00 EDU/du	1.00 EDU/du
Medium Density[d]	0.14 EDU/du[f]	0.72 EDU/du	0.86 EDU/du
High Density[e]	0.07 EDU/du[f]	0.51 EDU/du	0.58 EDU/du
Commercial	1.47 EDU/ac[g]	4.16 EDU/ac	5.63 EDU/ac[h]
Office	1.47 EDU/ac[g]	3.12 EDU/ac	4.59 EDU/ac[h]
Industrial	1.47 EDU/ac[g]	3.12 EDU/ac	4.59 EDU/ac[h]

[a] One EDU is defined as the average day demand for a low density residential dwelling unit and equals 429 gpd.
[b] Refer to Table 2.
[c] Sum of "On-Site" and "Off-Site" EDU conversion factors.
[d] Applies to structures with two to four attached dwelling units with an estimated average 2.7 people per dwelling unit.
[e] Applies to structures with five or more attached dwelling units with an estimated average 2.2 people per dwelling unit.
[f] Calculated based on the dwelling units per gross acre assumptions presented in Appendix C from the Citywide Water System Master Plan.
[g] Based on a unit water demand factor of 4.0 af/yr for irrigated areas (15 percent of total gross acres). Factor was then adjusted to apply to net acres (85 percent of total gross acres).
[h] Factor to be applied to net acres (85 percent of total gross acres).

The total number of EDUs to be included in this development impact fee analysis was determined based on the total number of residential dwelling units and net acres[4] from Commercial, Office, and Industrial land uses as projected from the future service areas listed above. These residential dwelling units and non-residential acreages were converted to EDUs based on the EDU conversion factors presented in Table 5. As presented in Table 6, a total of 35,325 EDUs were included in this development impact fee analysis for the recycled water system infrastructure fee component.

[4] As discussed with City staff, net acres are defined as 85 percent of total gross acres.

Table 6. Calculation of Recycled Water System Infrastructure Fee Component

Land Use Designation	Total Dwelling Units or Net Acres[a,b]	EDU Conversion Factor[c]	EDUs
Residential			
Very Low Density	713 du	1.00 EDU/du	713
Low Density	4,696 du	1.00 EDU/du	4,696
Medium Density[d]	7,457 du[f]	0.86 EDU/du	6,174
High Density[e]	3,103 du	0.58 EDU/du	1,800
Commercial	1,083 ac	5.63 EDU/ac	6,097
Office	593 ac	4.59 EDU/ac	2,722
Industrial	2,859 ac	4.59 EDU/ac	13,123
		Total EDUs	35,325
		Total CIP Cost (refer to Table 4)[g]	$133,900,000
		Recycled Water System Infrastructure Fee	$3,791/EDU
		Recycled Water System Infrastructure Fee with 2012 Economic Adjustment[h]	$2,654/EDU

(a) Refer to Appendix C of the Citywide Water System Master Plan. Land use information for the Ellis Specific Plan and Cordes Ranch projects was updated based on information received on April 2, 2012 and May 9, 2012, respectively.
(b) As discussed with City staff, net acres are defined as 85 percent of total gross acres.
(c) Refer to Table 2.
(d) Applies to structures with two to four attached dwelling units with an estimated average 2.7 people per dwelling unit.
(e) Applies to structures with five or more attached dwelling units with an estimated average 2.2 people per dwelling unit.
(f) Ellis Specific Plan does not plan to use recycled water on-site for Medium Density Residential dwelling units.
(g) Costs are in 2012 dollars.
(h) As discussed with City staff, an economic adjustment factor of 30 percent was applied to reduce the anticipated recycled water system infrastructure fee component for 2012. This factor will need to be reviewed and adjusted at least annually to better reflect current costs.

As shown in Table 6, the total backbone buildout recycled water system CIP cost was divided by the total number of projected EDUs to develop the recycled water system infrastructure fee component of the Tier 1 development impact fee. As discussed with City staff, an economic adjustment factor of 30 percent was applied to reduce the anticipated recycled water system infrastructure fee component for 2012.[5] This adjustment factor reflects the current (more favorable) bidding climate and will need to be reviewed and adjusted at least annually to better reflect current costs. Based on a total CIP cost of $133.9M, a total of 35,325 EDUs, and a 30 percent economic adjustment factor, the resulting potable water system infrastructure fee is equal to $2,654 per EDU for current construction.

[5] The economic adjustment factor for the recycled water system infrastructure (30 percent) is higher than that for the potable water system (15 percent) due to the types of projects included in the recycled water system (primarily pipeline construction), which are currently experiencing highly favorable bidding conditions.

Consistent with the methodology used for the backbone buildout potable water system, the proposed backbone buildout recycled water system CIP cost will be paid for by future developments through the recycled water system infrastructure fee component as determined above. Furthermore, capital improvement costs for the backbone buildout recycled water system can be allocated to each development project based on the projected number of EDUs proposed to be developed within each project. It should be noted that the projected number of EDUs should be based on the total dwelling units or net acres (defined as 85 percent of total gross acres) to be developed and does not include Institutional/Public Facilities land use.

Water Supply

As described above, the Tier 1 development impact fee includes a water supply fee component to pay for the additional water supplies which have been acquired, or will be acquired, to serve future development. Costs for the following water supplies are included in the Tier 1 water supply fee component of the development impact fee:

- 2004 West Side Irrigation District assignment (2,500 af/yr);
- 2014 West Side Irrigation District assignment (2,500 af/yr);
- 2004 Banta Carbona Irrigation District assignment (5,000 af/yr); and
- 2012 Semitropic Dry Year Supply (3,500 af/yr).

As shown in Table 7, these water supplies provide for a total dry year supply of 5,000 af/yr; however, 1,600 af/yr of this supply has been allocated to and already paid for by existing users, and is therefore not available to serve future development.

Table 7. Calculation of Tier 1 Water Supply Fee Component

Supply Source	Assignment, af/yr	Normal Year Availability, af/yr (Reliability,%)	Dry Year Availability, af/yr (Reliability,%)	Cost (Principal + Estimated Interest Payments)
WSID Assignment (2004)	2,500	1,250 (50%)	375 (15%)	$3,062,500[(a)]
WSID Assignment (2014)	2,500	1,250 (50%)	375 (15%)	$3,625,000[(b)]
BCID Assignment (2004)	5,000	2,500 (50%)	750 (15%)	$6,670,000[(c)]
Semitropic	--	--	3,500 (100%)	$5,506,691[(d)]
Total	10,000	5,000	5,000 af/yr	$18,864,191
		Allocated to Existing Users[(e)]	(1,600 af/yr)	($6,036,541)
		Available for Future Development	3,400 af/yr	$12,827,650
		Equivalent to Average Day Demand of	3 mgd	
		1 EDU = 429 gpd	7,075 EDUs	$1,813 per EDU

(a) 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).
(b) Cost is $1,000/af ($2,500,000) with 5% interest on unpaid balance; Option is due in February 2014.
(c) 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; City still owes $3,000,000 which is due in 2014.
(d) Purchase price is $5,506,691.
(e) Per Steve Bayley, City of Tracy Public Works Department.

As shown in Table 7, the total supplies available to serve future development are 3,400 af/yr, at a total cost of $12.8M. This available supply is equivalent to an average day demand of approximately 3.0 mgd, which is equivalent to 7,075 EDUs. Therefore, the water supply cost is equivalent to $1,813 per EDU. It should be noted that the cost for additional water supplies, beyond the 3,400 af/yr shown in Table 7, is not included in this water supply fee and will need to be determined in a future analysis based on the future additional water supplies to be acquired and the associated costs.

Water Treatment

The Tier 1 development impact fee also includes a water treatment capacity fee component to pay for the existing and additional water treatment capacity at the City's John Jones Water Treatment Plant (JJWTP) needed to serve future development. Table 8 outlines the calculation of the water treatment capacity available and required to serve future development, and the associated costs for that water treatment.

Table 8. Calculation of Tier 1 Water Treatment Fee Component

	Treatment Capacity	Cost
Available Capacity at Current JJWTP		
JJWTP Capacity Prior to Expansion	15 mgd	
JJWTP Capacity with Expansion (+15 mgd)	30 mgd	$45,000,000[(b)]
Capacity Used by Existing Users[(a)]	(21 mgd)	($18,000,000)
Remaining Capacity Available to Serve Future Development	9 mgd	$27,000,000
JJWTP Future Expansion	21 mgd	$88,200,000[(c)]
Total (Capacity to meet Maximum Day Demand)	30 mgd	$115,200,000
Equivalent to Average Day Demand of[(d)]	15 mgd	
1 EDU = 429 gpd	34,965 EDUs	$3,295 per EDU

(a) Per Steve Bayley, City of Tracy Public Works Department.
(b) Total cost of $45 million for 15 mgd expansion (per Steve Bayley, City of Tracy Public Works Department).
(c) Based on estimated cost for future JJWTP expansion in the Citywide Water System Master Plan.
(d) Maximum day demand is 2.0 times the average day demand.

As shown in Table 8, the total treatment capacity available to serve future development is 30 mgd (9 mgd of the current JJWTP available capacity and 21 mgd of future capacity) at a total cost of $115.2M. This treatment capacity is equivalent to an average day demand of 15 mgd, which is equivalent to 34,965 EDUs. Therefore, the water treatment cost is equivalent to $3,295 per EDU. It should be noted that the cost for additional treatment capacity, beyond the 30 mgd shown in Table 8, is not included in this water treatment fee and will need to be determined in a future analysis based on the future additional treatment capacity required and the associated costs.

TIER 1 DEVELOPMENT IMPACT FEE

Figure 3 shows the application of the Tier 1 development impact fee components. In general, unless prior agreements have been made, a future development project will need to pay the following four fee components:

- Potable Water Infrastructure Fee;
- Recycled Water Infrastructure Fee;
- Water Supply Fee; and
- Water Treatment Fee.

As discussed above, the Tier 1 development impact fee does not include "on-site" facilities required for a specific development project, which will be determined in subsequent Tier 2 evaluations.

Table 9 summarizes the fee associated with each component. Based on 2012 dollars, the total Tier 1 Development Impact Fee for the Citywide Water System Master Plan is $11,998/EDU, which already includes the cost reductions to account for the current economic/bidding climate. Based on this Tier 1 development impact fee, costs for connection to the City's potable and/or recycled water system(s) can be calculated for each future development based on their proposed number of EDUs from projected residential dwelling units and/or net non-residential acres[6] to be developed.

Table 9. Summary of the Tier 1 Development Impact Fee Components[(a)]

Fee Component	Unit Cost, $/EDU
Potable Water Infrastructure[(b)]	$4,236
Recycled Water Infrastructure[(c)]	$2,654
Water Supply[(d)]	$1,813
Water Treatment[(e)]	$3,295
Total Unit Cost	$11,998

(a) Costs are in 2012 dollars. Cost should be adjusted at least annually to better reflect current costs.
(b) Refer to Table 3. Includes an economic adjustment factor of 15 percent
(c) Refer to Table 6. Includes an economic adjustment factor of 30 percent.
(d) Refer to Table 7.
(e) Refer to Table 8.

If a proposed development project requires additional water supplies beyond those described herein or has an agreement with the City to acquire an alternative water supply (other than one of the water supplies included in the water supply fee described herein), the water supply fee described herein will be waived and the proposed development project will be required to pay an

[6] Does not include Institutional/Public Facilities land use.

alternative water supply fee (to be determined by the City) or provide funding to the City to cover the costs associated with the acquisition of the alternative water supply. Similarly, if the water supply for a proposed development project does not require treatment at the City's JJWTP, the water treatment fee will be waived. However, the proposed development project will be required to provide funding to the City to cover the costs associated with treatment of the alternative water supply.

It should be noted that the proposed use of recycled water within the City results in reduced potable water demands and thus reduced costs for the potable water system CIP. If, for any reason, recycled water is not used or not available, additional potable water system facilities (at an additional cost to future users) would be required to meet the future irrigation demands currently proposed to be supplied by recycled water. The cost of these additional facilities would increase the potable water system CIP cost allocations presented above. Also, depending on the timing of actual development, sufficient potable water supply may not be available for irrigation demands that have been assumed to be served with recycled water. Therefore, further evaluation of water supply and potable water system infrastructure will be required if recycled water is not used as cited in the Citywide Water System Master Plan.

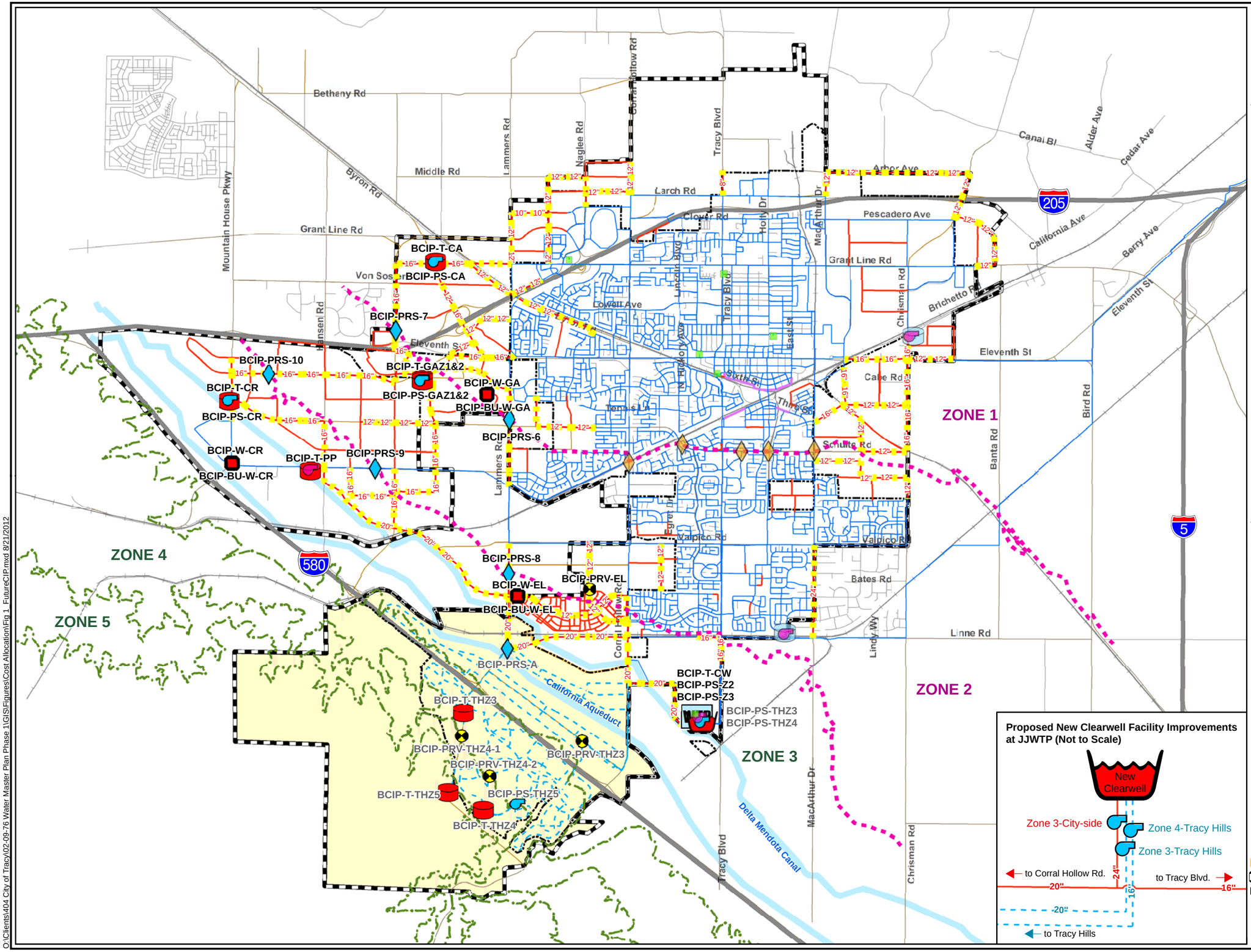
In addition, as developers move forward with developing Tier 2 evaluations, the further refinement of land use assumptions and the subsequent resulting water demand projections may not correspond exactly with the water demand projections presented in the Tier 1 evaluation as documented in the Citywide Water System Master Plan. Consequently, the infrastructure improvements recommended in the Tier 1 buildout potable and recycled water systems CIP and the corresponding Tier 1 backbone cost allocations presented in this TM may also need to be refined to reflect changes in capital improvement recommendations based on Tier 2 evaluations.

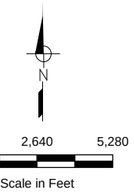
To comply with the Mitigation Fee Act, Government Code Sections 66000, et seq., also known as Assembly Bill 1600 (AB1600), a Fee Justification Study Executive Summary is provided in Attachment A. The purpose of the Fee Justification Study Executive Summary is to show that a reasonable relationship (benefit and burden) between the proposed development projects in the Citywide Water System Master Plan and the proposed infrastructure improvements exists.

FIGURE 1

City of Tracy
Water System Master Plan

RECOMMENDED BUILDOUT POTABLE WATER SYSTEM CIP





NOTES

1. The City's existing hydraulic model is not an all pipes model. Therefore, not all existing pipes are shown.
2. Bore and jack pipeline projects are not shown, but is required for canal, railroad, or major highway crossings.
3. Individual PRVs on water service connections with static pressures exceeding 80 psi will be the responsibility of individual developer(s) to install.

LEGEND

- Proposed Pipeline Included in Fee Analysis
- Proposed Pipeline
- Proposed Existing Pipeline Upsize
- Existing Pipeline
- Proposed Tracy Hills Pipeline
- Proposed Backup Power Generator
- Proposed Emergency PRV Connection
- Proposed Pressure Regulating Station
- Proposed ASR Groundwater Well
- Proposed Booster Pump Station
- Proposed Storage Tank
- Proposed Clearwell
- Existing Pressure Regulating Station
- Existing Groundwater Well
- Existing Booster Pump Station
- Existing Storage Tank
- Tracy Hills
- SOI
- City Limits
- Proposed Street
- Existing Street

WEST YOST ASSOCIATES
Consulting Engineers

O:\Clients\404 City of Tracy\02-09-76 Water Master Plan Phase 1\GIS\Figures\Cost Allocation\Fig 1_FutureCIP.mxd 8/21/2012

O:\Clients\404 City of Tracy\02-09-76 Water Master Plan Phase 1\GIS\Figures\Cost Allocation\Fig 2_Recycled11x17.mxd 8/21/2012

FIGURE 2

City of Tracy
Water System Master Plan

RECOMMENDED BUILDOUT RECYCLED WATER SYSTEM CIP

N

0 2,640 5,280

Scale in Feet

NOTES

1. Zone B BPS location is tentative. Additional piping would be required if another location is selected.

LEGEND

- Proposed Pipeline Included in Fee Analysis
- Proposed Pipeline Diameter ≤ 16 in.
- 16 in. < Proposed Pipeline Diameter ≤ 30 in.
- Residential Areas Specific Plan
- Industrial Areas Specific Plan
- I-205 Corridor Specific Plan
- Plan "C"
- Northeast Industrial Specific Plan
- South MacArthur
- Downtown Specific Plan
- Ellis Specific Plan
- Tracy Gateway - Phase 1
- Holly Sugar Sports Park
- Future Service Area (see Index)
- Park/Irrigated Area
- SOI
- Tracy Hills WRF Service Area
- Zone Boundary
- Highway
- Existing Street
- Railroad

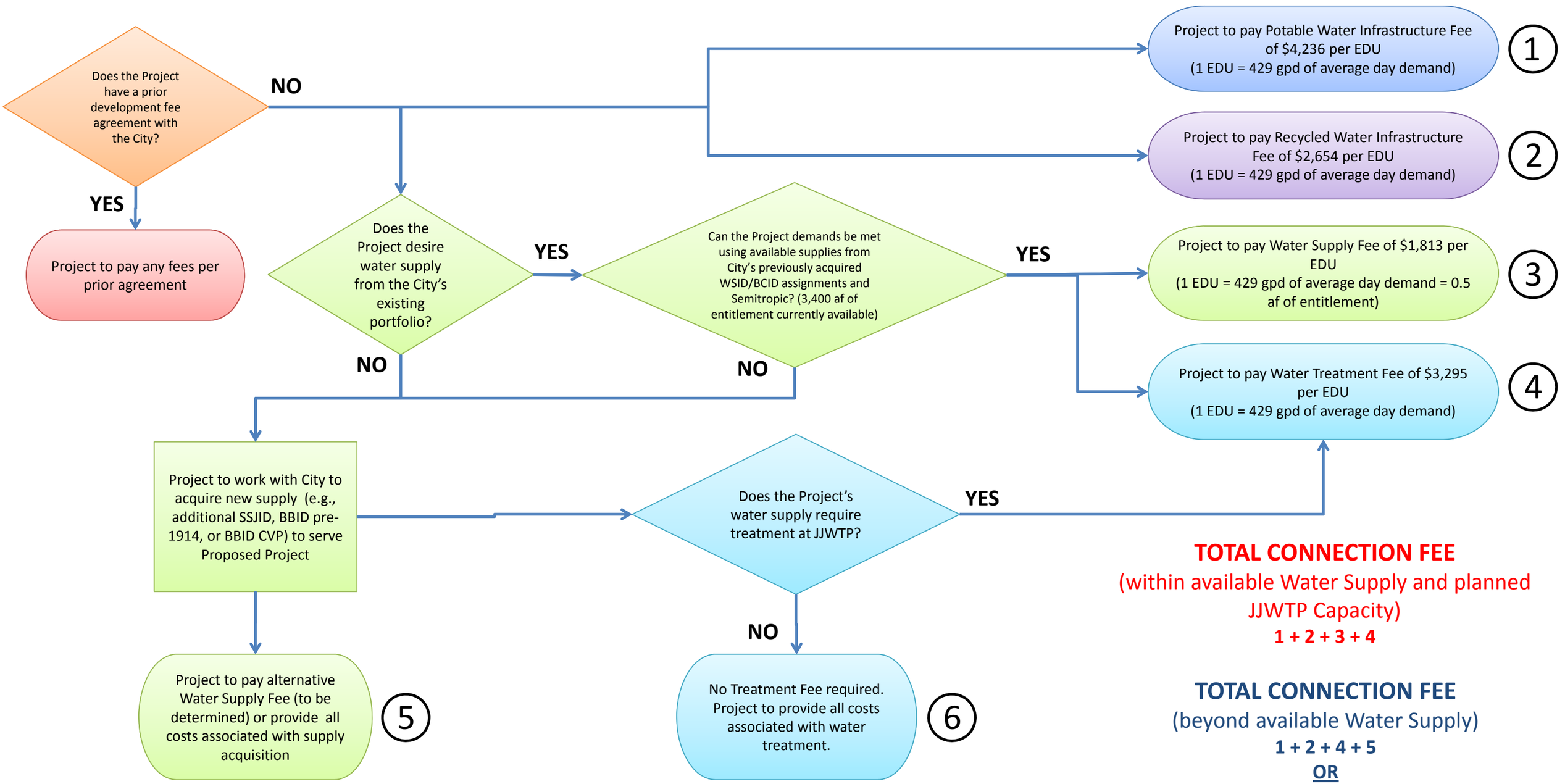
FUTURE SERVICE AREAS INDEX

(1) Westside Residential
(2) UR 1
(4) South Linne
(5) Tracy Hills
(6) Gateway (excluding Phase 1)
(7) Cordes Ranch
(8) Bright
(9) Catellus
(10) Filios
(11) I-205 Expansion
(12) Westside Industrial
(13) Eastside Industrial
(14) Larch Clover
(15) Chrisman Road
(16) Rocha
(17) Berg/Byron
(18) Kagehiro

WEST YOST ASSOCIATES Consulting Engineers

Figure 3. Citywide Water System Master Plan – Tier 1 Development Impact Fee Flowchart

Fees shown are based on estimated costs in 2012 dollars.
Fees should be reviewed and adjusted as necessary and at least annually to match current costs.



TOTAL CONNECTION FEE
(within available Water Supply and planned JJWTP Capacity)
1 + 2 + 3 + 4

TOTAL CONNECTION FEE
(beyond available Water Supply)
1 + 2 + 4 + 5
OR
1 + 2 + 5 + 6

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ATTACHMENT A

Fee Justification Study Executive Summary

It is anticipated that the City will establish one or more financing districts to provide funding mechanisms for the proposed development projects (*i.e.*, future service areas) identified in the Citywide Water System Master Plan finalized on December 5, 2012. Formation of these financing districts is consistent with the objectives of the Mitigation Fee Act, Government Code Sections 66000, et seq., also known as Assembly Bill 1600 (AB1600). The Mitigation Fee Act requires documentation of a reasonable relationship (benefit and burden) between the type of development projects planned in the Citywide Water System Master Plan and the need for infrastructure improvements to serve these development projects. The purpose of this summary is to show that a reasonable relationship between the proposed development projects in the Citywide Water System Master Plan and the recommended potable and recycled water infrastructure improvements exists.

1. Description of assumptions and design criteria

Water Demands

For single family residential (*i.e.*, very low and low density residential) water uses, the estimated average day water demand rate of 429 gallons per day per detached single family dwelling unit (gpd/sfdu) is based on work completed in the Citywide Water System Master Plan to verify unit water demand factors. For all other residential water uses, the projected water demand was also calculated based on the appropriate "water duty" or unit water demand factor adopted in the Citywide Water System Master Plan for each particular residential density category and are summarized below.

Medium Density Residential	=	310 gpd/du
High Density Residential	=	220 gpd/du
Very High Density Residential	=	150 gpd/du

The average annual water demands for non-residential land uses such as parks and schools were calculated using the following unit water demand factors:

Commercial	=	2.0 af/ac/yr
Office	=	1.5 af/ac/yr
Industrial	=	1.5 af/ac/yr
Institutional	=	1.5 af/ac/yr
Parks	=	4.0 af/ac/yr

These unit water demand factors presented above are consistent with the adopted water duty factors from the Citywide Water System Master Plan.

The estimated average day water demand rate from single family residential water uses can be used to define an Equivalent Dwelling Unit (EDU). Generally, one EDU is equal to the amount of water required to serve one single family dwelling unit per day (*i.e.*, 429 gallons, based on 130 gallons per capita per day (gpcd) times 3.3 people per single family dwelling unit). Based on this definition (*i.e.*, 1 EDU = 429 gpd), water demands from different types of land uses can be converted to EDUs for comparison.

Number of Persons per Detached Single Family Unit

Consistent with the Citywide Water System Master Plan, the City has established a policy regarding the estimated average number of persons per household, as set forth below.

- SFDU: 3.3 people/du
- MF 2-4: 2.7 people/du
- MF > 5: 2.2 people/du

The term "MF 2-4" applies to structures with 2 to 4 attached dwelling units (*i.e.*, medium density residential). The term "MF > 5" applies to structures with 5 or more attached dwelling units (*i.e.*, high density residential).

2. Description of existing level of service

The existing potable water system infrastructure serving the City consists of pipelines ranging in size from 2 to 42-inches in diameter, pump stations, storage tanks, groundwater production wells, and water treatment facilities. The existing potable water distribution system currently meets the minimum requirements as presented in the City's adopted performance criteria from the Citywide Water System Master Plan. However, not all of the existing approved projects (*i.e.*, development projects with approved water supply) are completely built out. Therefore, before any excess water system treatment, storage or transmission capacity can be assumed to be available for future service areas, full buildout of the previously approved projects must be assumed. This assumption ensures that no existing capacity required for and built (and paid for) by previously approved projects would be inadvertently assigned to the future service areas.

However, to serve the buildout needs of these existing approved projects, additional pumping and storage facilities and back-up generators are required for the existing potable water system. Only after these additional facilities are added to the existing potable water system can the system meet all adopted performance and design criteria as established in the Citywide Water System Master Plan.

3. Description of assumptions regarding the type of development planned

Based on buildout of the City's General Plan, various future service areas have been proposed within the City's Sphere of Influence. Future service areas will include a variety of land uses (*e.g.*, residential, commercial, industrial, *etc.*). These proposed land uses from the future service areas will increase the overall water demand in the existing potable water system. The existing potable water system will not be able to treat, store and deliver water of appropriate quality, quantity and pressure if existing potable water facilities are not modified to serve the future service areas. This would impact public health and welfare because of inadequate system pressures to provide service and/or fight fires. Because additional water demands will have a major impact on existing potable water system facilities, modifications to these facilities are required to maintain the current level of water service provided by the City. Therefore, additional water supply sources, treatment capacity, pumping capacity, storage capacity and transmission capacity will be required to meet the projected water demands at buildout of the City's General Plan.

4. Description of how the impact of future development projects will require additional modifications to public facilities, including description of standards by which it was determined that additional modifications to public facilities are required

The size and configuration of the City's existing potable water system is not sufficient to accommodate additional water demands that will be generated by the future service areas. These proposed development projects will require additional storage, pumping and distribution facilities. Without these additional facilities, adequate water service cannot be provided to the future service areas.

As previously discussed, the City's existing potable water system has been sized to meet the full buildout of existing approved projects. Any demands above these will require additional new facilities or modifications to the proposed facilities to meet the City's adopted performance and design criteria from the Citywide Water System Master Plan. The criteria used to determine the additional public water facilities or modifications to previously proposed facilities included:

- Ground Storage Requirements (partially buried, prestressed concrete tanks)—must contain operational, emergency, and fire flow storage for potable water demands;
- Allowable potable water system pressure during a peak hour demand condition must be maintained at or above 40 psi; and
- Allowable potable water system pressure during a maximum day plus fire flow demand condition must be maintained at or above 30 psi.

The City's existing potable water system is currently capable of meeting all the above criteria based on existing water demands. With the design and construction of the various other water facilities identified as the responsibility of the previously approved projects, demands for these previously approved projects can also be met consistent with the City's potable water system design criteria. However, potable and recycled water system improvements identified and required for future service areas as documented in the Citywide Water System Master Plan will also be required to meet the above City standards for buildout of the City's General Plan Sphere of Influence.

5. Description of the level of service that will result from new developments after the required additional public facilities and/or modifications to previously proposed public facilities are constructed

After construction of the proposed buildout potable and recycled water system facilities recommended for the future service areas, the level of water service after development will be similar to the level of water service currently provided by the City. The City's potable water system will meet all of the adopted performance and design standards as described in Item 4 above. The potable water system and the proposed recycled water system will be in full compliance with the City's adopted design and performance criteria as stated in the Citywide Water System Master Plan.

6. Description of how the new developments benefit from the additional facilities

It was previously identified that the City's existing potable water system infrastructure cannot support the future service areas. For this reason, additional and/or modifications to previously proposed facilities need to be in place and operational for the future service areas to benefit from them. Therefore, the proposed development projects benefit directly from recommended potable water facility modifications and the proposed new recycled water system as described in the Citywide Water System Master Plan. Without these facilities, the future service areas would not be able to meet the City's adopted performance and design criteria for the potable water distribution system. Some of the benefits that the new/modified potable and recycled water facilities bring to the future service areas include:

- Adequate peak hour and fire flow system pressures;
- Adequate storage (emergency, operational and fire); and
- Adequate treated water supply.

7. Description of the basis upon which the total estimated cost of providing the proposed public facilities is allocated to properties within the future service areas

Tables 1 and 4 of this Development Impact Fee TM present an estimate of the reasonable costs associated with the required potable and recycled water system facilities to serve the future service areas, respectively. The unit costs are based on costs for similar water facility projects constructed for municipal agencies and from standard construction cost estimating guides and cost curves**.** These costs are then allocated based on the projected demand associated with the future development based on EDUs (1 EDU = 429 gpd).

Table 7 of this Development Impact Fee TM presents the actual costs of the City's water supplies available to serve future developments. These costs are allocated based on the water supply available to serve future development based on EDUs (1 EDU = 429 gpd).

Table 8 of this Development Impact Fee TM presents the actual costs (for the completed expansion) and estimated costs (for the future expansion) of the City's water treatment capacity available to serve future developments. These costs are allocated based on the water treatment capacity available to serve future development based on EDUs (1 EDU = 429 gpd).

8. Description of the basis upon which the total estimated cost of providing the additional and/or the modifications to previously proposed public facilities is allocated to properties within the future service areas

The total projected water demands from the future service areas were calculated using the factors set forth in Item 1 above, and the maximum day and peak hour water demands were calculated using the peaking factors of 2.0 and 3.4, respectively, for the potable water system. For the proposed recycled water system, the maximum day and peak hour peaking factors of 5.8 and 6.4, respectively, were used.

Based on the above unit water demand and peaking factors and the total projected potable and recycled water demand from all the future service areas, as calculated; the required water facilities necessary to support these future service areas (for conveyance and storage), as well as required water supply and water treatment capacity, were determined and associated costs to serve proposed development projects were identified.

9. Reference documents

The documents used in the analysis include:

1. City of Tracy, Citywide Water System Master Plan. December 2012.
2. "Tracy Industrial Areas Specific Plan". July 1988.
3. Technical Memorandum "Plan C Water System Analysis". February 24, 1998.
4. Technical Memorandum "South MacArthur Water System Analysis". June 24, 1999.
5. Technical Memorandum "Northeast Industrial Water System Analysis". September 29, 1999.
6. "Tracy Gateway Project Water Supply and Infrastructure Report". May 2007.
7. Technical Memorandum "Hydraulic Evaluation of Downtown Specific Plan". August 19, 2008.
8. Technical Memorandum "South ISP Water System Analysis". October 13, 2008.
9. Technical Memorandum "Undeveloped Infill Properties". October 24, 2011.
10. Draft Technical Memorandum "Water System Evaluation for the City of Tracy's Initial Pressure Zone 3 Area". February 7, 2012.
11. Technical Memorandum "Ellis Specific Plan Water System Analysis". November 2, 2012.

10. Findings with respect to the Mitigation Fee Act

The future service area development impact fee will provide for the funding of the proportionate share of the water supply requirements for the future service areas in accordance with the requirements of the Mitigation Fee Act California Government Code sections 66000, et seq., also known as "AB1600". The recommended capital improvements are required to mitigate the water impacts of new development within the future service areas consistent with the land use and water policies of the City's General Plan and the Citywide Water System Master Plan. The fee is not imposed to improve or correct deficiencies in the City's baseline (*i.e.*, existing) service level. The fee is based on a water and fair-share cost analysis which: 1) determines capital improvements required to mitigate the water supply impacts from the buildout of the City's General Plan, and 2) equitably distributes the costs of the improvements to the development projects that cause the impacts, per the provisions of the Mitigation Fee Act.

The Mitigation Fee Act requires impact fee programs to comply with the following basic requirements:

- Identification of the purpose of the fee;
- Identification of how the fee will be used;
- Determination of how there is a reasonable relationship between the fee's use and the type of development project on which the fee is imposed;
- Determination of how there is a reasonable relationship between the need for the public facility and the type of development project on which the fee is imposed; and
- Determination of how there is a reasonable relationship between the amount of the fee and the cost of the public facility (or portion of facility) attributable to new development.

The following findings address each of these five requirements:

a. **Identification of the purpose of the fee.** The purpose of the proposed development impact fee is to provide a source of funding, based on the future service areas' proportionate share of the overall project costs, to be used to construct water facilities that are required to provide water supply to the future service areas. These proposed water facilities are more completely analyzed and presented in the Citywide Water System Master Plan and generally include upgrades to the City's potable water distribution system (as summarized in Table 1 of this Development Impact Fee TM), development of a new recycled water system (as summarized in Table 4 of this Development Impact Fee TM), acquisition of additional water supplies (as summarized in Table 7 of this Development Impact Fee TM), and development of additional water treatment capacity (as summarized in Table 8 of this Development Impact Fee).

b. **Descriptions of how the fee will be used.** The fee will be used to plan, design and construct new or improved water facilities such as pipelines, storage tanks, and booster pump stations, acquire new water supply, and expand the existing water treatment facility, to serve the proposed future service areas.

c. **Determination of how there is a reasonable relationship between the fee's use and the type of development project on which the fee is imposed.** The proposed impact fee will be used to construct water treatment and distribution facilities and acquire water supplies that are required to provide water service to the future service areas. Construction of water facilities and acquisition of water supply provides direct benefit to the proposed development projects. Therefore, there is a reasonable relationship between the fee's use and the type of development project on which the fee is imposed.

d. **Determination of how there is a reasonable relationship between the need for the public facility and the type of development project on which the fee is imposed.** The use of a sophisticated and calibrated hydraulic water distribution system computer model, validated and subsequently adopted by the City, demonstrates the need for public facility improvements due to the proposed land uses on which the fee will be imposed. This analytical model was used to determine impacts to the City's existing

potable water system and identify impacts to public facilities. Analysis included evaluation of treatment, transportation and storage requirements to deliver required pressure and flow for average day, maximum day, fire demand, and peak hour demand conditions. Without the identified improvements, the existing potable water system is incapable of providing the City's minimum standard system pressure and flow to serve the future service areas. This will not only affect the future service areas, but also the City's existing customers. Therefore, there is a reasonable relationship between the need for the public facility and the type of development project on which the fee is imposed. In addition, a new recycled water system was developed and is required to support non-potable irrigation water demands. The proposed recycled water system will reduce water demands from the City's existing potable water system and maximize the water supply available to meet potable water demands.

e. **Determination of how there is a reasonable relationship between the amount of fee and the cost of the public facility (or portion of the facility) attributable to new development.** The proposed water facilities will be constructed to meet the potable and recycled water demand generated from the future service areas. The equivalent demand between different land use types is calculated using a factor of one EDU for a single family detached residential unit (*i.e.*, very low or low density residential) and was used to allocate costs for the proposed buildout potable and recycled water systems, water supply and water treatment capacity. The estimated overall cost of the facilities is based on current conceptual engineering estimates, which are based on similar facility types. The overall cost of the potable and recycled water system facilities, water supply and water treatment capacity is divided by the number of EDUs that will be connected to the system. Therefore, each residential dwelling unit or developed non-residential acre receives direct benefit and their cost will be proportional to the benefits received. Hence, there is a reasonable relationship between the amount of fee and the cost of the public facility (or portion of the facility) attributable to new development.