



FINAL
WATER AND SEWER CAPACITY
FEE STUDY

MCKINLEYVILLE COMMUNITY SERVICES DISTRICT

MAY 25, 2011



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OVERVIEW

McKinleyville Community Services District (the District) retained Willdan to prepare a capacity fee study for District's water and sewer utility systems. Capacity fees are one-time charges used to fund capital improvements necessary for the expansion of a utility system. The recommended capacity fees for the District are proportionate and reasonably related to the capital facility demands of new development. This report documents the data, methodology, and results of the capacity fee study.

The District applies two types of one-time fees to its water and wastewater system users: Capacity Fees and Connection Fees. A capacity fee is a one-time fee that is charged for new, additional, or larger connections to the District's utility system. Capacity fees recover the costs associated with providing additional facility capacity to new users and existing users requiring additional capacity. Connection fees are used to recover costs associated with the physical installation of lateral connections to the utility system, and can be thought of as "plumbing charges". The scope of this study is limited to a review of the capacity fees.

It has been some time since the District last updated the current water and wastewater capacity fees in 1991 and 1999 respectively. The current fees do not adequately reflect updated system demands and needs for expanded or additional facilities. In addition, several anticipated projects (Ramey Pump Station Upgrade, Murray Road Water Tanks, Waste Water Management Facility upgrade, Mad River Bridge crossing pipeline) will improve water and wastewater services.

EXISTING CAPACITY FEES

The District's existing capacity charge, for both water and sewer is based on Equivalent Residential Units (ERU) and is a one-time charge determined per District *Rule 1.21*. An ERU is defined as any single-family residential structure. Other types of structures are evaluated by the District on an individual basis with respect to average monthly flows, and the capacity charge imposed thereon is adjusted to be appropriately proportionate to the standard charged imposed on ERU

Current water capacity fee rates were established in 1991 at \$154 per Equivalent Residential Unit (ERU). Current wastewater capacity fee rates were established in 1999 at \$1,761 per ERU. Consequently, the District's existing water and sewer capacity charges are insufficient and do not adequately cover the costs associated with serving new development.

OBJECTIVE AND REGULATORY REQUIREMENTS

The primary objectives of establishing a full cost recovery capacity fee are to achieve equity in distributing costs and to provide a means by which new users can pay for the costs of the facilities required to serve them without burdening existing users.

The legal requirements for enactment of development impact fee program (capacity fees) are set forth in Government Code §§ 66000-66025 (the "Mitigation Fee Act"), the bulk of which were adopted as 1987's AB 1600 and thus are commonly referred to as "AB 1600 requirements." A development impact fee is not a tax or special assessment; by its definition, a fee is voluntary and must be reasonably related to the cost of the service provided by the local agency. If a development impact fee does not relate to the impact created by development or exceeds the reasonable cost of providing the public service, then the fee may be declared a special tax and must then be subject to a two-thirds voter approval.



CALCULATION METHODOLOGIES

Any one of several legitimate methods may be used to calculate utility capacity fees. The choice of a particular method depends primarily on the service characteristics and planning requirements for the facility type being addressed.

Reduced to its simplest form, the process of calculating capacity fees involves two steps: determining the cost of development-related capital improvements, and allocating those costs equitably to various types of development. However, the calculation of capacity fees can become complicated due to the many variables involved in defining the relationship between development and the needs for facilities.

There are three basic methods used to calculate the components of the District's capacity fees. The methodologies are used to determine the best measure of demand created by new development for each component of the capacity fees. The methodologies can be classified as looking at the past, present, and future capacities of infrastructure.

- ❖ In instances where infrastructure has been built in advance of new development and there is excess capacity available to be utilized by new development, the **buy-in methodology** is utilized. Under this methodology, new development repays the community for previous capacity investments via the capacity fee.
- ❖ The **incremental expansion methodology** is used when a community plans to provide new development the same level-of-service (LOS) that is currently being provided to existing development in increments. Generally, utility infrastructure does not lend itself to this methodology given its nature of having to be in place prior to new development and capacity being constructed in large segments.
- ❖ The **plan-based methodology** utilizes the District's capital improvement plan (CIP) and related master plans to determine new development's share of planned projects. Projects that do not add capacity, such as routine maintenance or replacement of existing facilities, are not included in the fees. Projects that add capacity are further evaluated as to the percentage of the project attributable to existing development versus new development. Only the portion of planned projects attributable to new development is included in the capacity fees.

Based on the available data, the majority of the facility components analyzed and incorporated into the proposed capacity fees utilize the plan-based methodology, with the buy-in methodology used to recover costs associated with excess distribution and treatment capacity. A summary of the capacity fee components and methodologies are shown in the Figure 1-2:



Figure 1-2: Capacity Fee Component Methodology

Water Capacity Fee Components	Calculation methodology
Resources	Plan-Based
Storage	Plan-Based
Distribution	Plan-Based
Distribution	Buy-In
Planning and Study Efforts	Plan-Based
Wastewater Capacity Fee Components	Calculation methodology
Treatment	Plan-Based & Buy-In
Interceptors	Plan-Based
Collection lines	Plan-Based
Planning and Study Efforts	Plan-Based
Joint Cost Components	Calculation methodology
Water	Plan-Based
Sewer	Plan-Based

DEVELOPMENT & DEMAND DATA

Both existing and planned development must be addressed as part of the analysis required to support the establishment of capacity fees. This section of the report organizes and correlates the information to provide a framework for the capacity fee analysis. The information in this section forms a basis for establishing levels of service, analyzing facility needs, and allocating capital facilities costs between existing and future development and among various customer types.

Currently the District has 6,042 lateral water connections, serving approximately 5,315 active water accounts. The district has fewer sewer connections, at 4,495. As part of the Humboldt County general plan update, the County has provided the District with a variety of new development projections. Based on these projections the mid-point additional development potential for McKinleyville CSD is approximately 1,800 development units, with maximum additional development units of approximately 5,500. **The capital improvement projects listed in this study, as developed by the District, reflect the required CIP associated with the County's mid-point development projection.** An adjustment to the development projections would correspondingly affect the amount of required CIP necessary to serve further development.

A future projection of customer demand is necessary in evaluating the capacity of the District's current systems and analyzing plans for future capacity expansions. The District plans and sizes its utility infrastructure needs based on all potential users and possible demands. Thus, the capacity fees analysis utilizes projections of peak daily demands, as these are the factors attributed to design and implementation of the utility infrastructure.



WATER CONSUMPTION CHARACTERISTICS

As the composition (single family vs. commercial) of future build-out is unknown; Willdan performed a detailed consumption analysis which revealed that each new unit of growth is expected to demand an average of 9.7 units, or hundred cubic feet (HCF), per month, based on historical averages. As a result, the forecasted 1,800 development units will generate an annual water demand of nearly 185,000 HCF. A 30% increase in consumption from current levels.

Figure 1-3: Water Connection and Consumption Projections

	Existing	Growth	Projected Build-out
Total Annual Consumption (hcf)	619,326	209,744	829,070
Total Potable Water Active Connections	5,315	1,800	7,115
Consumption per Connection (hcf)	116.5	116.5	116.5
Monthly Consumption per Connection (hcf)	9.7	9.7	9.7

SEWER DISCHARGE CHARACTERISTICS

Similarly, Willdan applied, and confirmed the validity of, industry standard discharge factors to determine the amount of water being discharge to the sewer system. As sewer discharge is not metered, it is necessary to apply a discharge factor to account for water used for irrigation – Industry standards, dictate that Single Family Residential units discharge approximately 70% of water use, while all other customer classes discharge approximately 90% of water consumption. The discharge-weighted average for the entire system was determined to be 76%. These figures were reconciled against the District's treatment records to confirm the appropriate application of industry standards.

With the discharge factors applied, average monthly discharge is 7.4 HCF per account. Consequently, the forecasted 1,800 units will generate an annual sewer discharge of 159,405 HCF annually, a 34% increase in discharge from current levels.

Figure 1-4: Sewer Discharge Factor Projections

	Existing	Growth	Projected Build-out
Total Annual Consumption (hcf)	619,326	209,744	829,070
Total Potable Water Active Connections	5,315	1,800	7,115
Consumption per Connection (hcf)	116.5	116.5	116.5
Monthly Consumption per Connection (hcf)	9.7	9.7	9.7
Discharge Factor	76%	76%	76%
Total Annual Discharge (hcf)	470,688	159,405	630,093
Monthly Discharge per Connection(hcf)	7.4	7.4	7.4



WATER CAPACITY FEES

Figure 2-1 below lists water related CIP items. Capacity fees can only recover costs directly attributable to new development. Accordingly, with the assistance of Willdan, District staff reviewed CIP projects, project by project and determined a percent of the project total cost that is directly related to new development. The portions of project costs not attributable to growth are then allocated to existing users as part of the monthly water rates.

The CIP presented below represents the capital projects necessary to meet the demands of projected growth. Additionally, as the list includes CIP projects that are to be completed over the next ten years (through June 30, 2021), all CIP projects have had an annual inflation factor (the Engineering News Record Construction Index) applied so that the cost in the year of projected completion best approximates then-current costs.

Figure 2-1: Water System Capital Improvement Program Allocation

Water System	Total Cost (Inflated)	% Attributed to Growth	(Inflated \$)	Component
			Attributed to Growth	
Murray Road Tank	3,710,745	15%	556,612	Storage
Property Purchase	542,882	65%	352,873	Distribution
Emergency Water Line River Crossing	928,346	30%	278,504	Distribution
Water Tank Upgrade	1,109,391	30%	332,817	Storage
Ramey Pump Upgrades	1,105,210	80%	884,168	Distribution
Emergency Water Supply	300,331	50%	150,166	Distribution
Radio Telemetry Upgrade	143,045	0%	-	N/A
Meter Reader Upgrade	46,594	0%	-	N/A
Generator Testing	11,869	25%	2,967	Distribution
McCluski Tank 3A Roof Upgrade	5,429	0%	-	N/A
Tank Seismic Actuators	-	0%	-	N/A
Fire Hydrant System Upgrade	100,761	50%	50,380	Distribution
Water Main Rehabilitation and Replacement	2,311,497	25%	577,874	Distribution
Meter Replacements	1,497,333	0%	-	N/A
Total Water	11,813,433		3,186,362	



WATER STORAGE

The District plans to spend \$4,820,136 on the Murray Road water storage tank over the next ten years. Of which, fifteen percent or \$889,429 of the cost/need is attributable to new growth. A new 3-million gallon tanks is planned for construction on the District's Murray Road site. The new tank at that location would increase the District's storage capacity, enhance fire flows during peak summer usage and provide additional system capacity for new growth, especially in northern McKinleyville. Staff has determined it would be advantageous to initiate phased construction of two tanks at this location in order to spread the cost over a longer period, and to enhance the operational flexibility of the system by having two tanks to allow for maintenance and redundancy.

Figure 2-2: Water Storage Projects Allocated to New Growth

Water System	Total Cost	Cost Allocated to Growth
Murray Road Tank	3,710,745	556,612
Water Tank Upgrade	1,109,391	332,817
Total Water	4,820,136	889,429
	Ten Year Total	889,429
	Gallons of Capacity per Day	450,000
	Cost Per Gallon	\$ 1.98

WATER DISTRIBUTION

The District purchases all of its water from Humboldt Bay Municipal Water District. Water is pumped from HBMWD's facility on the Mad River to the Ramey Pump Station. Water is then pumped to MCSD's six storage tanks where it is gravity fed to MCSD's customers.

Given the ability for new development to utilize excess distribution capacity, the buy-in methodology is used to calculate the portion of the proposed Water Capacity Fee attributable to distribution facility costs.

In order to determine the appropriate buy-in charge, the total cost of the existing plants assets were reviewed. The records revealed the original cost of the District's utility system was \$10.1 million, \$8.8 million less Grant funded and Developer contributed capital. This cost (\$8,859,436) was divided by the distribution capacity of the existing infrastructure (5,250,000 gallons per day) yielding a buy-in cost of \$1.69 per gallon.

In addition, the District is planning on seven water distribution projects over the next ten years. Discussions with District staff indicate that these projects will provide sufficient capacity for forecasted mid-point build-out. Based on projections of peak water demand from new development, new development over this period is projected to place a demand of 689,936 gallons daily (Average Daily Use * Peak * Number of Accounts).

Additionally, allocated to water distribution are costs related to securing and constructing an emergency water supply. Although currently deficient, the proposed emergency water supply is being sized to accommodate existing and future growth. As such, the cost of the project is being split equally between existing and future users.



Figure 2-3: Water Distribution Projects Allocated to New Growth

Water System	Total Cost	Cost Allocated to Growth
Property Purchase	542,882	352,873
Emergency Water Line River Crossing	928,346	278,504
Ramey Pump Upgrades	1,105,210	884,168
Emergency Water Supply	300,331	150,166
Generator Testing	11,869	2,967
Fire Hydrant System Upgrade	100,761	50,380
Water Main Rehabilitation and Replacement	2,311,497	577,874
Total Water	5,300,896	2,296,933
Ten Year Total		2,296,933
Gallons of Capacity per Day		689,936
Cost Per Gallon		\$ 3.33

JOINT COSTS

To ensure adequately supply water and sewer for new development, the District also needs non-capacity items such as administrative building space. These costs are allocated to cost per connection, since connections are the best proxy for estimating demand. These costs reflect the additional demand on administrative and overhead costs associated with an increased service population. Joint costs total \$2,421,473 with new growth being allocated \$682,663. As these are joint costs between the two services, costs were halved, with each being apportioned \$341,331. As shown in Figure 2-4, the cost per new account for the joint costs is \$189.63.

Figure 2-4: Joint Cost Capital Improvement Program Allocation

Joint System	Growth's Cost	% Cost		% to Water	Cost to Water	% to Sewer	Cost to Sewer
		Attributed to Growth	Allocated to Growth				
Backhoe	80,025	20%	16,005	50%	8,002	50%	8,002
Dump Truck	126,003	20%	25,201	50%	12,600	50%	12,600
Tractor and Attachments	150,194	20%	30,039	50%	15,019	50%	15,019
Air Compressor and appurtenances	48,047	20%	9,609	50%	4,805	50%	4,805
3/4 or 1-Ton Pickup	420,346	20%	84,069	50%	42,035	50%	42,035
Van/Car	72,253	20%	14,451	50%	7,225	50%	7,225
Light Duty Utility Truck	110,854	20%	22,171	50%	11,085	50%	11,085
Facility Upgrades and sealcoat	197,714	20%	39,543	50%	19,771	50%	19,771
ADA Upgrade	12,518	0%	-	50%	-	50%	-
Office Building	359,714	80%	287,771	50%	143,885	50%	143,885
Property Purchase - Joint	-	50%	-	50%	-	50%	-
Building Roofs	37,281	0%	-	50%	-	50%	-
PCs, Software, & Printers	138,898	30%	41,670	50%	20,835	50%	20,835
File Server Upgrade	57,258	30%	17,177	50%	8,589	50%	8,589
MOM Upgrade and Replacement	143,505	30%	43,051	50%	21,526	50%	21,526
Office Equipment	62,548	20%	12,510	50%	6,255	50%	6,255
GIS/SEMS/CADD Equipment and Software	65,004	20%	13,001	50%	6,500	50%	6,500
Misc./ Emergency Equipment Replacement	179,729	0%	-	50%	-	50%	-
GPS Surveying Equipment	52,515	30%	15,754	50%	7,877	50%	7,877
Office Emergency Generator	53,859	0%	-	50%	-	50%	-
Emergency Response Equipment and Supplies	53,208	20%	10,642	50%	5,321	50%	5,321
Total Joint	2,421,473		682,663		341,331		341,331
Ten Year Total			682,663		341,331		341,331
Projected Development (Units)					1,800		1,800
Cost Per Unit					\$ 189.63		\$ 189.63



DEMAND & COST SUMMARY

Water use for residential and nonresidential customers was determined using data from the District's billing records. The figure below summarizes the demand factors and each components cost per gallon for additional water capacity (figures 2-2 through 2-4).

Figure 2-5: Water Capacity Fee Demand and Cost Summary

Water Demand and Cost Summary

Demand Summary		Factors	
Annual Residential Consumption (hcf)		439,909	
Annual Residential Consumption (gallons)		329,051,932	
Residential Accounts		4,658	
Daily Residential Consumption (gallons)		194	
Average Month Consumption		36,659	
Max Month Consumption		57,666	
Residential Peaking Factor		1.6	
Gallons per Peak day per Single Family Connection		310	
Water Component Cost Summary		Planned	Buy-in
Storage		\$1.98	
Distribution		\$3.33	\$1.69
Net Capital Cost per Gallon of Capacity		\$6.99	
Joint Costs (per connection)		\$189.63	
Net Capital Cost per Connection		\$189.63	



WATER CAPACITY FEES

Beyond updating the fee, Willdan is recommending the District update the existing fee structure. Currently, the District's capacity fee is calculated by ERU – where each new connection equivalents units have to be manually calculated based on a variety of factors. The proposed water connection fees are based on the size of the installed water meter, as recommended by the American Water Works Association (AWWA). A capacity ratio, based on the meters flow rating (in gallons per minute), is used to determine a capacity ratio from a standard 5/8 inch meter into a proportionate fee for larger meter sizes. The capacity ratios are consistent with industry standards and are an accurate reflection of the possible demand of different meter sizes.

For the smallest meter size, 5/8 inch water meter, the fee is derived by multiplying the gallons per day per residential connection (figure 2-5) by the total capital cost per gallon of capacity (figure 2-5). The next step in the fee calculation is to add the average cost per water customer for joint costs. For example, 310 peak gallons per residential connection (from Figure 2-5) multiplied by \$6.99 (cost per gallon of capacity - Figure 2-5) equals \$2,168. Adding \$189.63 (capital cost per connection) yields a capacity fee of \$2,358 for a 5/8 inch meter. For larger meter sizes, include the capacity ratio in the formation fee (before adding the capital cost per connection)

FIGURE 2-6: WATER CAPACITY FEES

			Component Unit Cost	\$1.98	\$5.02	\$189.63	
			Component Multiplier	310	310	1	
Water Meter			Joint Costs				
Size	GPM	Capacity Ratio	Storage	Distribution	(per account)	Total	
5/8"	20	1.0	\$ 613	\$ 1,555	\$ 189.63	\$ 2,358	
3/4"	30	1.5	919	2,333	189.63	3,441	
1"	50	2.5	1,532	3,888	189.63	5,609	
1 1/2"	100	5.0	3,064	7,776	189.63	11,029	
2"	160	8.0	4,902	12,441	189.63	17,533	
3"	300	15.0	9,191	23,328	189.63	32,708	
4"	500	25.0	15,318	38,880	189.63	54,387	
6"	1000	50.0	30,636	77,759	189.63	108,585	
8"	1600	80.0	49,017	124,414	189.63	173,621	
10"	2300	115.0	70,463	178,846	189.63	249,498	

Please note, due to recent changes in building code regulations, new single-family homes are to be sized with a 1" meter because of fire protection systems, rather than the typical 5/8" meter. It is recommended that all new single-family residential units, with meter sizes 5/8" up to 1", be charged the 5/8" meter rate to reflect their typical demand on the system.



SEWER CAPACITY FEES

The District has been taking steps to identify and project the affects of growth in central McKinleyville. Until the District knows the full extent of the County's development plan for McKinleyville, upgrades have been placed on hold. The figure below lists the sewer CIP attributable to new development as prepared by District staff. As part of the rate setting process, CIP projects are identified as growth-related, existing needs (O&M), or a percentage of both. The CIP presented below represents the capital project requirements needed to meet projected growth. The O&M portion will be utilized in the revenue requirements analysis in future rate analyses.

Figure 3-1: Sewer Capital Improvement Program Allocation

Sewer System	Total Cost (Inflated)	% Attributed to Growth	(Inflated \$) Attributed to Growth	Component
NPDES Permit	194,352	30%	58,305	Planning and Study Efforts
Industrial Permit Discharge	128,264	25%	32,066	Treatment
WWMF Upgrade/CEQA/Permitting	13,580,063	30%	4,074,019	Treatment
WWMF Driveway Repaving and Sealcoating	26,526	0%	-	N/A
WWMF Fencing and Gate	88,756	0%	-	N/A
WWMF SO2/Chlorine Injector Controllers	61,286	50%	30,643	Treatment
WWMF SO2/Chlorine Shut Off	64,050	50%	32,025	Treatment
WWMF Security Upgrades/ Cameras	16,790	20%	3,358	Treatment
WWMF Building Maintenance	34,018	0%	-	N/A
WWMF Grinder Maintenance	32,338	0%	-	N/A
WWMF Sludge Maintenance	142,065	30%	42,620	Treatment
Property Purchase/Improvements	556,446	10%	55,645	Collection Lines
Collection System Upgrades	739,274	100%	739,274	Collection Lines
Sewer Main Rehabilitation and Replacement	-	-	-	N/A
Sewer Lift Sta. Pump Maint. and Replacement	143,673	50%	71,836	Interceptors
Radio Telemetry Upgrade - Sewer	117,172	0%	-	N/A
Meter Replacement: WWMF, FIS	20,960	0%	-	N/A
Fischer Lift Station Grinder Maint.	51,735	0%	-	Interceptors
Sewer Main Camera Unit	74,266	50%	37,133	Collection Lines
Underground Pipe Locater & Camera	13,135	50%	6,568	Collection Lines
Generator Upgrades Maintenance	623,201	25%	155,800	Interceptors
SCBA Apparatus and Bottles	22,059	0%	-	N/A
Hydrocleaner (Sewer Fund) and appurtenances	387,123	50%	193,561	Collection Lines
Barn and Fence Maintenance	14,324	0%	-	N/A
Repairs and Maintenance	25,339	0%	-	N/A
Total Sewer	17,157,214		5,532,853	



TREATMENT

In order to determine the cost associated with the remaining plant capacity, Willdan reviewed the Districts Property, Plant, and Equipment (PPE) schedule. The analysis revealed that throughout the years, the District has invested \$19.98 million in PPE costs related to the wastewater management facility. The plant is currently operating at approximately 85% of committed capacity. Given the available capacity for new development to utilize, the buy-in methodology is used to calculate this component of the Sewer Capacity Fee.

Only the cost to the District can be utilized during the buy-in method. As a result, \$5,706,209 of Grant funded and Developer Contributed Capital were excluded. Thus, the sewer remaining PPE (\$14,820,094) is divided by the maximum daily capacity of the plant (1,610,000 gpd) which yields a buy-in cost of \$9.21 per gallon. By recovering this amount, the District will be reimbursed by new development for remaining system capacity.

The District plans to spend \$13,992,517 overall on treatment related CIP. Specifically, the District has identified \$4,214,730 of costs related to treatment projects to serve additional demand of new development. Based on projections of peak sewer demand from growth, new development is projected to add an additional 522,694 gallons of wastewater daily through mid-point build-out. (Average Daily Discharge * Peak * Accounts)

Figure 3-2: Sewer Treatment Projects Allocated to New Growth

Sewer System	Total Cost	Cost Allocated to Growth
Industrial Permit Discharge	128,264	32,066
WWMF Upgrade/CEQA/Permitting	13,580,063	4,074,019
WWMF SO ₂ /Chlorine Injector Controllers	61,286	30,643
WWMF SO ₂ /Chlorine Shut Off	64,050	32,025
WWMF Security Upgrades/ Cameras	16,790	3,358
WWMF Sludge Maintenance	142,065	42,620
Total Sewer	13,992,517	4,214,730
Ten Year Total		4,214,730
Gallons of Capacity per Day		522,694
Cost Per Gallon	\$	8.06



INTERCEPTORS

The District plans to spend \$818,609 on interceptor projects over the next ten years, \$227,637 of which is allocable to new development. Based on projections of peak sewer demand from new development, new development is projected to add an additional 522,694 gallons of wastewater daily through mid-point build-out, resulting in a cost per gallon of \$0.44 as shown in Figure 3-3.

Figure 3-3: Sewer Interceptor Projects Allocated to New Growth

Sewer System	Total Cost	Cost Allocated to Growth
Sewer Lift Sta. Pump Maint. and Replacement	143,673	71,836
Fischer Lift Station Grinder Maint.	51,735	-
Generator Upgrades Maintenance	623,201	155,800
Total Sewer	818,609	227,637
Ten Year Total		227,637
Gallons of Capacity per Day		522,694
Cost Per Gallon	\$	0.44

COLLECTION

Of \$1,770,244 in collection related costs, the District plans to spend \$1,032,180 on projects that are the result of new development. Based on projections of peak sewer demand from new development, new development is projected to add an additional 522,694 gallons of wastewater daily through mid-point build-out, resulting in a cost per gallon of \$1.97 as shown in Figure 3-4.

Figure 3-4: Sewer Collection Projects Allocated to New Growth

Sewer System	Total Cost	Cost Allocated to Growth
Property Purchase/Improvements	556,446	55,645
Collection System Upgrades	739,274	739,274
Sewer Main Camera Unit	74,266	37,133
Underground Pipe Locator & Camera	13,135	6,568
Hydrocleaner (Sewer Fund) and appurtenances	387,123	193,561
Total Sewer	1,770,244	1,032,180
Ten Year Total		1,032,180
Gallons of Capacity per Day		522,694
Cost Per Gallon	\$	1.97



PLANNING AND STUDY EFFORTS

According to the District's CIP, 30% of planned studies and planning efforts, 194,352 in total, are allocated to new development. Based on projections of peak sewer demand, new development is projected to an additional 522,694 gallons of wastewater daily through mid-point build-out, resulting in a cost per gallon of \$0.11 as shown in Figure 3-5.

Figure 3-5: Sewer Planning and Study Efforts Allocated to New Growth

Sewer System	Total Cost	Cost Allocated to Growth
NPDES Permit	194,352	58,305
Total Sewer	194,352	58,305
	Ten Year Total	58,305
	Gallons of Capacity per Day	522,694
	Cost Per Gallon	\$ 0.11

COST SUMMARY

Figure 3-6 summarizes the demand factors and cost per gallon for additional sewer capacity.

Figure 3-6: Sewer Capacity Fees Demand and Cost Summary

Demand Summary	Factors	
Gallon per Peak day per Single Family Connection	310	
Percentage of Water Returned to Sewer System	76%	
Gallons per Peak day per Single Family Connection	235	
Sewer Cost Summary	Planned	Buy-in
Treatment	\$8.06	\$9.21
Interceptors	\$0.44	\$0.00
Collection Lines	\$1.97	\$0.00
Planning and Study Efforts	\$0.11	\$0.00
Net Capital Cost per Gallon of Capacity	\$19.79	
Joint Costs (per connection)	\$189.63	
Net Capital Cost per Connection	\$189.63	



SEWER CAPACITY FEES

The sewer capacity fees are based on water meter sizes. A capacity ratio by meter size is used to convert the residential equivalent fee for a 5/8 inch meter into a proportionate fee for larger meter sizes.

Using a 5/8 inch water meter as an example: 235 gallons per peak day per residential connection (from Figure 3-6) multiplied by \$19.79 per gallon (net capital cost per gallon - Figure 3-6) equals \$4,650 per equivalent residential unit (ERU) plus \$189.63 for a total fee of \$4,840. Please note, an additional \$189.34 related to joint costs (capital cost per connection) is applied only once, not per ERU. Contrary to water, meter size is not directly correlated with the sewer discharge (effluent). Consequently, Willdan recommends the District maintain *Rule 1.21*, as ERUs are appropriately utilized to equitably allocate capacity related to the impact of a new sewer connection.

Figure 3-7: Sewer Capacity Fees

Component Unit Cost	\$17.27	\$0.44	\$1.97	\$0.11	\$189.63	
Component Multiplier	235	235	235	235	1	
	Treatment	Interceptor	Collection	Planning and Study Efforts	Joint Costs (per account)	Total
1 ERU	\$ 4,058.10	\$ 102.34	\$ 464.06	\$ 26.21	\$ 189.63	\$ 4,840



REGIONAL CAPACITY FEE SURVEY

A comparison survey of local and similarly sized agencies is a common tool utilized by policy makers. Figure 4-1 provides a comparison the water capacity fees of a typical new single family home, including the District's current and proposed fees.

Figure 4-1: Water Capacity Fee Comparison

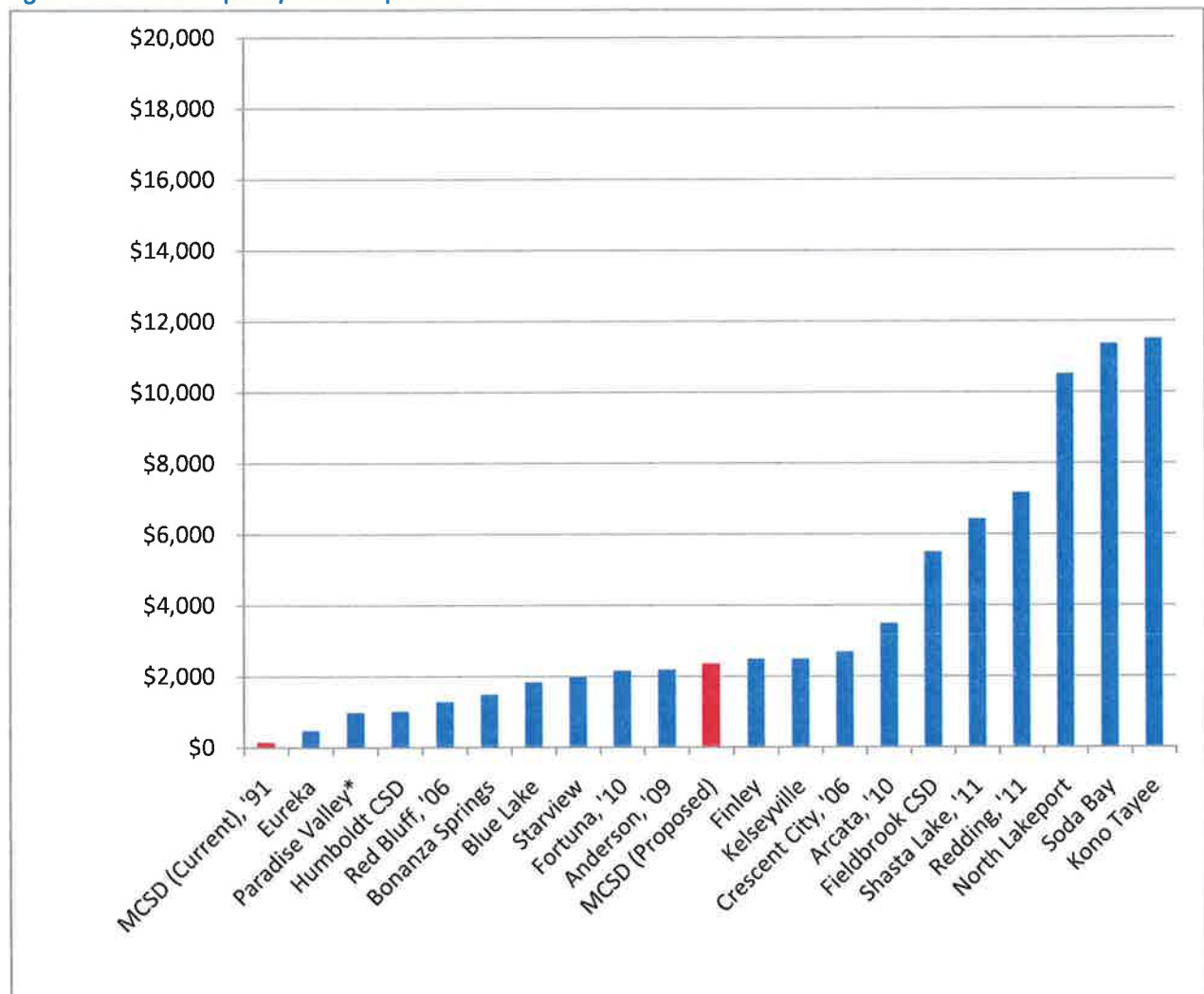
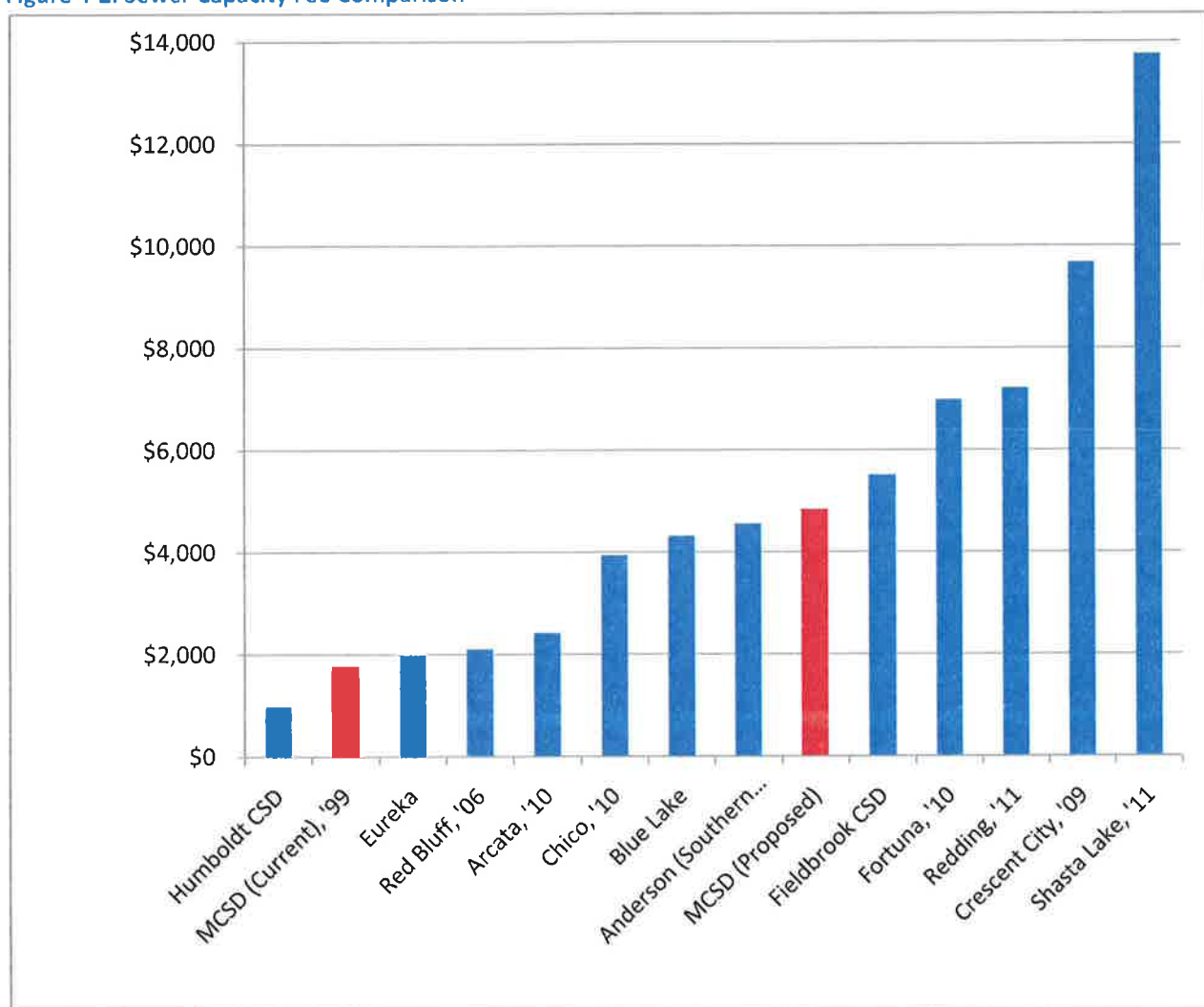




Figure 4-2 compares the District's current and proposed sewer capacity charges for a typical new single-family home with those of other agencies.

Figure 4-2: Sewer Capacity Fee Comparison



As both graphs demonstrate, the District's existing fees are well below the survey's average. The proposed full cost recovery fees put the District's rate in line with the regional average. Please note, however, capacity charges can vary widely from agency to agency depending on a wide range of factors, such as cost, subsidy, level of service, even the date previous update.