PARKING LOT QUESTIONS
RATE ADVISORY COMMITTEE
As of RAC Meeting, February 4, 2020

Item No./ Date	Member	Question	Answer	Date Answered
PL-1 9/24/19	Daniel Meza	Are there unique classes in the rate structure for churches, nonprofits or cemeteries?	No, there are not currently.	10/11/19
PL-2 9/24/19	James Smyle	Also, in looking at the list of pricing objectives presented here (and in comparison to those listed in the AWWA manual), I would suggest that it be considered to remove "Economic Development". First, the concern should be that rates be fair and equitable. If fair and equitable rates would unnecessarily hinder "economic development", i.e., be non-competitive in comparison to similar markets, then there are likely to be broader issues to deal with that rate setting does not address (or which may pave over). Second, water rates would seem to be a very blunt instrument for incentivizing greater economic growth, once one moves beyond having reasonably competitive rates. Third, this runs the risk of implicitly establishing a principle that water rates for "economic development" may (or do) merit a subsidy as a "public good"…and going down that path would require great transparency and a compelling, prior, economic justification. If the members prefer to keep a reference to economic concerns, I would then suggest	SAWS has not interpreted "Economic Development" to mean "Competitive Rates". We have implemented targeted lower rates for a major jobs creation project which we referred to as "Economic Development" rates. The last time we had such rates was to support a major new Toyota vehicle manufacturing plant built here about 13 years ago; those targeted lower rates were in effect for a limited time from 2006 to 2013. While "Economic Development" was the number 6 pricing objective priority for both the RAC and the SAWS in the 2015 study, we do not have any targeted Economic Development rates currently. We recommend to the RAC that "Economic Development" stay on the pricing objectives list so the RAC members can prioritize it higher, lower, or not at all as they see fit.	10/11/19

		that "Competitive Rates" be substituted for "Economic Development".		
PL-3 9/24/19	Daniel Meza	What rate structure/class is the City of San Antonio, Bexar County and other government or semi-governmental agencies under? What about military bases?	All are in the General Class.	10/11/2019
PL-4 9/24/19	James Smyle	To what extent did the new tiered rates achieve the stated objectives, e.g., of sending price signals to residential water users that incentivized water use efficiency and/or water conservation?	Staff provided a presentation at the 10/29/19 meeting on this issue.	10/29/2019
PL-5 9/24/19	James Smyle	How accurate/realistic were demand projections (water and EDUs) and what, if any, implications might this have for the assumptions to be made for current analysis?	Staff provided a presentation at the 10/29/19 meeting on this issue.	10/29/2019
PL-6 9/24/19	James Smyle	Did the merging of all non-residential classes -- Commercial, Institutional, and Multi-family Residential classes -- into one "General" user class have the effect of obscuring a central rate setting principle that "one class should not subsidize another"?	Commercial, institutional and multi-family customers have always been in the General Class since SAWS was formed in 1992.	10/11/2019
PL-7 9/24/19	James Smyle	Did the 2015 rate-change for the Water Supply Fee, which created tiered rates for the general class, in practice reflect the real cost of the water supplies it was supposed to support?	The Water Supply Fee was adopted by the SAWS Board and the City Council for the exclusive purpose of recovering the cost of developing non-Edwards Aquifer water supplies. The 2015 Rate Study recommendations made adjustments to the Water Supply Fee to ensure that that the rate structure continued to meet this requirement.	10/11/2019
PL-8 9/24/19	James Smyle	Did the reclassification into the General Class have unintended outcomes as regards cost apportionment, for example, General Class usage increased slightly (3% to 4%), while its share of Water Supply Fees dropped almost 15%?	There was no reclassification of other customer groups into the General Class in 2015. Commercial, institutional and multi-family customers have always been in the General Class since SAWS was formed in 1992.	10/11/2019

PL-9 9/24/19	Joseph Yakubik	Does SAWS have the highest fixed rates in Texas?	See Attachment I	10/11/2019
PL-10 9/24/19	Patrick Garcia	Please provide the history of SAWS rates and rate structures over the last 10 years.	See Attachment II	10/11/2019
PL-11 9/24/19	Raine Tanner, Daniel Meza, Patrick Garcia	Please provide a summary of incidental fees that have accumulated, for example the Stormwater Fee, over the last ten years.	See Attachment II for SAWS rates and fees history. See Attachment III for Storm Water Fee history.	10/11/2019
PL-12 9/24/19	Patricia Wallace	Please compare SAWS rates over the last 10 years to those of other cities.	See Attachment IV	10/11/2019
PL-13 9/24/19	Daniel Meza	Please provide affordability history, including what the discount has look like over time.	See Attachment V	10/11/2019
PL-14 9/24/19	Daniel Meza	Disclose what SAWS tests for when testing water quality; Describe water quality testing protocol at SAWS and prospects for possible third party verification of SAWS water quality testing; provide full RAC with website reference	See Attachment VI	10/11/2019
PL-15 9/24/19	Raine Tanner	Who will pay the higher water rate (which customer) will pay the higher rate for the Vista Ridge water? How does SAWS determine who is going to pay that higher Vista Ridge water rate than the cheaper Edwards rate? SAWS should never be selling our water outside of its service area.	This will be addressed when we discuss cost of service and rate design.	10/16/2019
PL-16 9/24/19	Stephen Lara	Discussion of the number of area entities having emergency interconnect contracts with SAWS. Additional questions from Mr. Lara sent on October 10, 2019: 1. How are these cities charged and how are the individual meters checked for billing?	See Attachment VII	10/11/2019

		2. Can an overview of the agreement and the actual system be briefed at some point? 3. Is there a tier system that regulates the pricing for high volume users? 4. Is there a tier system that regulates more frequent users of the interconnect agreement?		
PL-17 10/22/2019	James Smyle	Can the RAC process revisit the recently approved water supply impact fee? As has been stated in the last two RAC meetings, Vista Ridge water is "baseload" due to the take-or-pay nature of the contract. However, in setting the water supply impact fee, it was assumed that only 32.4% of the incremental water supply for new growth would come from Vista Ridge water and the remaining 67.6% from Edwards Aquifer water supply. This assumption resulted in the water supply impact fee actually being reduced by some 3% to $2,706 per EDU. As the information provided to the RAC has clarified that 100% of the incremental water supply will be Vista Ridge water, this implies that the actual water supply impact fee should be about $7,002 (based upon the model used by the consultants, Carollo, in their report "*Water and Wastewater Facilities LUAP, CIP, and Maximum Impact Fees*"). If it cannot be revisited, would it be correct to say that the difference between the established fee of $2,706/EDU versus the actual cost of $7,002/EDU would leave a	See Attachment VIII	10/25/2019

		projected cost of almost $674 million to be picked up by SAWS ratepayers?		
PL-18 10/22/2019	Joseph Yakubik	Mr. Yakubik had a question about a slide in a presentation that had been removed from the RAC web page. He asked for the presentation to be reposted. He then wished to reconcile a statement Gavino Ramos had made during his presentation in which he mentioned direct mail as having the best results and was the most cost effective method for outreaching to potential Affordability Discount Program participants with a slide in the deleted presentation which he remembered said "…a $0 cost versus $3700 cost to mail, or something like that…"	The deleted presentation has been reposted on the RAC web page. Gavino Ramos responded to Mr. Yakubik's question as follows: The slide Mr. Yakubik saw in the previously deleted presentation was regarding a very informal Survey Monkey survey SAWS did to assistance program participants. The bullet point he was referencing stated: • This survey cost $0 compared to mailing which would have cost us $2,935 for printing and mailing cost Had SAWS printed and mailed the surveys to the participants, the estimated cost would have been $2,935. This was a survey, not a direct mail campaign aimed to increase participation in our UpLift programs	11/5/2019
PL-19 10/29/2019	Frances Gonzalez	Did the 500 irrigation residential customer accounts become established in 2001 right after the establishment of the irrigation rate class, or did the number of such accounts increase over time?	At the time the Irrigation Class was established beginning in 2001 there were 220 residential irrigation accounts established. There are now 604 residential irrigation accounts. 141 of the accounts were established from 2002 to 2010 and 243 accounts have been established to date since the end of 2010.	11/8/2019
PL-20 10/29/2019	Patricia Wallace	What in your professional opinion is the rate structure used by another city that would be the best fit for SAWS?	This will be addressed during the rate design process as various rate structure options will be brought for review so the RAC can decide which structure is the best fit.	11/8/2019

PL-21 11/5/2019	Joseph Yakubik	Please have the slides from both presentations available in RAC4, along with Doug Evanson's initial slides to the Board when he introduced the RAC process earlier the year. I am interested in the bill comparison slides.	Detailed bill comparisons with other utilities will be made during the rate design process	11/8/2019
PL-22 11/5/2019	Joseph Yakubik	I would also like to have a discussion about price signals. Where are they, specifically, in the current structure? Where were they before? Does the emphasis on fees in SAWS structure dilute the signal? Do other cities structures have stronger signals? How are they manifested in real-world bills, including wastewater? Diagrams would help. I'll bring mine.	The structure of current and alternative price signals will be addressed during the rate design process.	11/8/2019
PL-23 11/1/2019	Joseph Yakubik	Also – I am ready for Raftelis and SAWS staff to discuss the "Austin Model" about rate objectives, as recommended by Berto Guerra during the introduction to this process. I think we should have a robust discussion about how our neighbors to the north were able to reduce rates by focusing on affordability. What were their objectives, how did they balance competing needs?	Alternative affordability-related rate structures will be addressed during the rate design process.	11/8/2019
PL-24 11/12/2019	James Smyle	The RAC needs to have actual numbers – not percentages or medians or averages – for each of the classes within the General Class. Equally, to better understand Residential usage, per capita data should be presented along with "customer" data. Can SAWS commit to presenting the RAC with this detailed breakdown?	We hope to begin a discussion of "Rate Classes" during the 10 Dec 2019 meeting. This will include some data related to General Class, including current subgroups. Additional data, including residential per capita data, will be provided during future cost of service and rate design discussions.	12/6/2019
PL-25 11/12/2019	James Smyle	Slide 16 of the 29 Oct 2019 RAC presentation compares "budgeted", which is an estimate of required budget vs actual	Please see Attachment IX for the referenced source documents detailed on slide 16. We will be happy to meet with you to discuss any further	12/6/2019

		revenue. Please inform us as to what was "actual expenditure" so we can understand if projected budgetary requirement shortfalls translated into actual revenue requirement shortfalls and to what extent surpluses translated into bankable savings. Also, please explain what "Chilled Water" refers to in the footnote on that page.	questions which you may have after reviewing these documents. As will be discussed during the 10 Dec 2019 meeting, Chilled Water is one of SAWS four currently existing business units. As shown on slide 17 of the 10 Dec 2019 presentation, this business unit provides cooling services to various downtown hotels, Convention Center, Alamodome and Port San Antonio tenants. As further discussed, this business unit is not part of this rates advisory process.	
PL-26 11/12/2019	James Smyle	Slide 19 of the 29 Oct 2019 RAC presentation states that the current rate structure classes have been in place since 2001 and the "parking lot" matrix states that the "General Class", as currently defined, has been in place since SAWS's inception in 1992. Please confirm that, for the "General Class", this is correct. If not, please explain the historic differences in the "General Class" and what the justifications were for those changes.	The statements are correct. The General Class has always included multi-family, commercial and industrial customers since 1992. The slide is referring to the fact that SAWS has maintained four different classes of water customers since 2001: Residential, General, Wholesale and Irrigation.	12/6/2019
PL-27 11/12/2019	James Smyle	Reference Slide 25 of the 29 Oct 2019 RAC presentation. Please explain why Residential contribution increased over 42% while General Class and Irrigation Class contributions increased less than one-third of that (12%). Also, for purposes of clarity, can we please not lump together "General Class" and "Irrigation Class"? It is important that we understand the details of each class.	The reason is directly attributable to the results of the prior Cost of Service and Rate Design Analysis completed in 2015 which found that the Residential Class was under-recovering its Water Supply cost of service and required a 15.79% rate increase while General and Irrigation class were both over-recovering their Water Supply cost of service and had an indicated rate reduction of more than 14%. Please see in particular pages 33 and 34 of the attached 2015 rate study report (report is available at www.saws.org/RAC). We understand the	12/6/2019

			request relating to the combination of General Class and Irrigation Class and will not group these classes in presentations or analysis going forward.	
PL-28 11/12/2019	James Smyle	Reference Slides 21, 26 and 27 of the 29 Oct 2019 RAC presentation. Please explain why, when General Class usage increased and Residential Class usage decreased, that General Class contribution decreased while Residential Class contribution increased, and Residential Class rates escalated at a rate 70% greater than that of General Class.	As shown on Slide 26, the May 2015 Comprehensive Cost of Service and Rate Design Analysis found that the Residential Class should be paying 56.771% of all water related costs while in 2015 they were actually only paying 53.568% of such costs. Conversely, the rate study found that the General Class should be paying 31.393% of all water related costs while in 2015, they were actually paying 36.689%. As a result, the rate design adopted in 2015 and implemented effective in January 2016 resulted in additional revenue being generated from the Residential Class as compared to the General Class. This is why the effective level of rate increases experienced by the Residential Class since 2015 have exceeded those of the General Class.	12/6/2019
PL-29 11/12/2019	James Smyle	Reference Slides 21, 26 and 27 of the 29 Oct 2019 RAC presentation. Please identify the problem or flaw that resulted in this outcome and provide suggestions as to how such an outcome can be avoided in the future, i.e., so that increased usage by a class is absorbed by that class, rather than by others.	As pointed out in PL-28 above, this result is a direct result of adhering to cost of service principles by rate class as opposed to any "problem or flaw". Increased usage by a class is and has been absorbed by that class, rather than by others, however, rate increases are attributable to and applied to all volumes of usage not just incremental usage.	12/6/2019
PL-30 11/12/2019	James Smyle	Reference Slide 33 of the 29 Oct 2019 RAC presentation. Please define acronyms when first used. What is "ADP"? Also, please correct. Slide states that average bill declined, while presents data showing average use declining.	ADP means Affordability Discount Program and this should have been defined. The subtitle of the slide states that "Average Residential Water ***Use*** Per Bill Declined" which is consistent with the data presented on the slide.	12/6/2019

PL-31 11/12/2019	James Smyle	Reference Slides 36 and 38 of the 29 Oct 2019 RAC presentation. Total increase in wastewater was 1.85 billion gallons, from which 14.5% was contributed by Residential Class and 85.5% was contributed by General Class. To pay for this increase SAWS charged an additional $43.7 million, of which almost half (49.7%) was paid for by the Residential Class. Please explain why the Residential Class paid for almost one-half the increase while actually only contributing only about one-seventh of the increased wastewater volumes. Also please note that the presentation of the Cost of Service for Wastewater appears misleading as seems to imply that the General Class absorbed a higher percentage of the costs overall, when it actually speaks to relative percentage increases. In contrast, according to the figures presented, the Residential Class absorbed 175% more of the cost than it should have, on a per unit volumetric charge basis.	The additional $43.7 million of referenced revenue relates primarily to extensive improvements being made to our existing Wastewater infrastructure. As discussed above in PL-29, any rate increases are applied to all wastewater volumes not just the incremental volumes. You are correct in stating that of the additional $43.7 million in wastewater charges (to the Residential and General Classes), "almost half was paid for by the Residential Class". However, you need to compare this level of revenue contribution to the total wastewater flow contribution (as opposed to incremental flow contribution). In total, the Residential Class accounted for more than 53.6% of wastewater flows in 2015 and still more than 51.8% in 2018. As a result, it is reasonable that "almost half" of any incremental revenue would have been paid for by the Residential Class and it is incorrect to assert that "Residential Class absorbed 175% more of the cost than it should have, on a per unit volumetric charge basis".	12/6/2019
PL-32 11/12/2019	James Smyle	Reference Slide 39 of the 29 Oct 2019 RAC presentation. Please provide some insight into why certain key outcomes – particularly, Cost of Service, Conservation, Affordability to Disadvantaged Customers, and Drought Management – were not fully achieved.	As there are a number of variables that impact each of the key outcomes it is very difficult to ever fully achieve all of the objectives. This is why such rate studies are conducted once every five years or so. During this rate study we hope to enhance our rate structure to better achieve the objectives determined to be the highest priorities of this committee.	12/6/2019
PL-33 11/12/2019	James Smyle	Reference Slide 39 of the 29 Oct 2019 RAC presentation. Based upon accepted water utility good practices, what are the suggestions/recommendations that Raftelis would have for the RAC as to changes in the	This will be explored during the rate design process of the study.	12/6/2019

		current rate structure so next one might do a better job of achieving these outcomes.		
PL-34 11/12/2019	James Smyle	As it is clearly too early in the process to ask the RAC make informed decisions on such a highly subjective subject matter, I would strongly urge that this upcoming exercise be defined as no more than a straw poll in order to have an idea of the RAC's preliminary views.	The ranking results will be presented at the December 10th RAC meeting to solicit the RAC member's feedback on these results. Additionally, staff and the consultant have acknowledged that the results of the initial ranking process are subject to change later in the Rate Study Process.	12/6/2019
PL-35 11/12/2019	James Smyle	Thank you for breaking out the "must haves", as it was confusing to have these up for discussion in the same manner that other priorities might be. I suggest that a further break out and expansion is needed on what are core principles of rate setting, as these should be considered and understood by the RAC before any discussion of "priorities", which is what the majority of the so-called "pricing objectives" are. I am referring to core principles that are articulated in the AWWA manual and which are critical context for the RAC to keep in mind while doing its job. These include such principles as "user pays" and "one user class should not subsidize another", which I understand as being the point of "Cost of Service Based Allocations" mentioned on Slide 44. As a principle for rate setting, including it in this list of priorities to be rank ordered is mixing apples and oranges. Another important core principle, not yet mentioned to the RAC is "growth is to pay for growth". There are others. I think it very important that the presentation be expanded to include a section on "rate setting principles and criteria" and that this be well presented and	While the RAC has provided their preliminary views on priorities, we will provide information during the cost of service and rate design process related to industry standards and principles.	12/6/2019

		discussed prior to any efforts to solicit the RAC's preliminary views on "rate setting priorities". The most important step in priority setting is first laying out objective criteria by which those priorities will be established. The "must haves" and "established rate setting principles" (and lessons learned from the 2015 RAC and current industry best practice? Others?) provide such objective criteria		
PL-36 11/12/2019	James Smyle	Reference Slide 46 of the 29 Oct 2019 RAC presentation. Conservation is not just permanent reductions in use thru "increased efficiency", it is "permanent reduction in usage through reduced consumption, increased efficiency and/or shifting to sustainable alternatives, such as rainfall collection."	Please refer to the Conservation pricing objective definition agreed to by the RAC at the November 12 meeting: "A pricing structure that encourages reductions in discretionary water usage and efficient use of water."	12/6/2019
PL-37 11/12/2019	James Smyle	Reference Slide 50 of the 29 Oct 2019 RAC presentation. Economic development. I do not understand what is intended by this, please explain. How has this been exercised in the past (e.g., Toyota, other examples). What would be the purpose/objectives of using water as a means of incentivizing economic development? Provide examples of what might constitute "economic development" that would be considered eligible for receiving incentives (subsidies) during the 2020-2025 period. Notionally, how much might be provided in subsidies during this period. What form would the subsidies take? Who would decide who receives such subsidies? Who would pay for those subsidies? Provide examples of how other public water utilities successfully	Please refer to the response to PL-2 above. Also, please refer to the Economic Development pricing objective definition agreed to by the RAC at the November 12 meeting: "Establish special rates to incentivize targeted economic development."	12/6/2019

		incentivize economic development through subsidizing water supply and how they pay for the costs of those incentives/subsidies.		
PL-38 12/10/2019	Frances Gonzalez	At the Dec. 10 RAC meeting, Chair Gonzalez and Mr. Yakubik raised Shavano Park's emergency interconnect rate issue. He said the current ordinance governing the rate may already allow for a wholesale rate. He said this may be something the City Council should revisit but might not be within the purview of this committee. Chair Gonzalez asked staff to respond in the Parking Lot.	Staff is deliberating this issue.	
PL-39 12/10/2019	Joseph Yakubik	With respect to slide 20 in the Dec. 20 RAC meeting presentation, Joseph Yakubik asked if SAWS has traceability of cash sources supporting the 2020 CIP.	See Attachment X	01/10/2020
PL-40 12/10/2019	Stephen Lara	Mr. Lara asked if suburban cities like Balcones Heights are included in ICL or OCL. Staff responded that if there is a franchise agreement with the city, it is treated as an ICL. He asked the various suburban city information to be provided in the Parking Lot.	See Attachment XI	01/10/2020
PL-41 12/30/2019	Mike Chapline	Mr. Chapline wishes the RAC to consider developing a summary of the minutes of each meeting for the media.	The RAC agreed that staff would prepare a single page action summary will along with the regular committee meeting minutes.	01/14/2020
PL-42 12/17/2019	James Smyle	On Dec. 17, Mr. Smyle sent an e-mail to staff asking for the following information: 1. SAWS affordability program – I would like to better understand the distribution of the households that are enrolled in the affordability programs (i.e., Uplift, Sr. Billing, Project Agua, Disability billing),	On Jan. 7, 2020, staff met with Mr. Smyle to clarify his requests. Based on this meeting, staff prepared the below listed specific reports identified during the meeting to address Mr. Smyle's requests. Reports 1, 2, 4, and reports 6 through 9 are provided at Attachment XII. Report 5 is available at the website shown below. Report 3 involves large EXCEL spreadsheet files	02/04/2020

		volumetric water usage by these households, total water bills prior to any discounts/reductions (at household level), and actual cost following reductions/discounts. As regards locations, would it be possible to get a breakdown by Census Tract? If not, then by Zip Code and Council District? Also, if these are mapped on SAWS GIS, then I would request a copy of the map? For the first part of the request -- volumetric water usage by these households, total water bills, etc. –- I can discuss with the person or persons that would generate that information in order to identify the best and most convenient way of breaking that down and presenting it, if so desired. 2. Volumetric water usage within water user classes – I would like to better understand the variability within user classes. To that end, could I request a breakdown of volumetric water usage by month for each of residential, multi-family, commercial, industrial, other institutional users (schools, city, other?), wholesale, and irrigation by deciles? I am imagining a spreadsheet for each of user class or subclass, with columns of "Volumetric Decile Rank*", "Number of users in Decile", and "Total Volumetric Water Use of	and they can be downloaded from the RAC webpage under Meeting 7 materials. The first page of the attachment contains a cover memo that defines certain codes used in many of the reports and describes information provided on maps requested by Mr. Smyle. 1. Distribution of December 2019 General Class accounts by meter size 2. Mary Bailey's analysis of General Class 2018 Usage by Decile Summary 3. Bill frequency analysis given to Raftelis 4. ADP customer usage by block (2018) 5. Five-Year Conservation Plan (2019) Please note that this document has been provided to Mr. Smyle. The plan is available for download at the following web address: https://www.saws.org/conservation/conservation-conservation-plan/ 6. ADP Information Reports. a. Table (December 2018 data) showing the number of ADP customers at each discount level. b. Table showing ADP customer average consumption by bill month in 2018. c. Table showing for each 2018 bill month, the average bill with the ADP discount applied vs. average	

		Decile" (by month, so 12 columns). As to the years, could I request this information over the period 2017, 2018 and 2019 year-to-date? Again, I would be happy to consult with whoever would pull this together in order to clarify the request, if desired.	bill before application of the discount by discount level. 7. Table (2018 data) showing each Uplift program and the number of customers participating in each (ADP, Senior billing, Project Agua, and Disability billing) 8. Report (December 2018 and December 2019) showing the percentage of all SAWS customers vs. percentage of ADP customers having service cutoffs for non-payment 9. Geographic information. a. Map images from Tableau system showing distribution of ADP customer accounts in certain parts of service area b. Table showing number of customers receiving ADP discounts by zip code as of December 2018	

ATTACHMENT I (PL-9)

Fixed Fee Proportion vs. Volumetric Charge Proportion

Residential (5/8" Meter, 7,092 Gal. Water, 5,668 Gal. Sewer) - 2019 Rates

	Austin		Dallas		Houston *		SAWS	
	Charge	%	Charge	%	Charge	%	Charge	%
Water Fixed	$ 7.25	13.9%	$ 5.33	21.2%	$ -	0.0%	$ 13.02	35.3%
Water Volumetric	44.80	86.1%	19.81	78.8%	41.40	100.0%	23.91	64.7%
Total Water	$ 52.05	100.0%	$ 25.14	100.0%	$ 41.40	100.0%	$ 36.93	100.0%
Sewer Fixed	$ 10.30	18.0%	$ 4.78	13.6%	$ -	0.0%	$ 14.59	46.0%
Sewer Volumetric	47.01	82.0%	30.38	86.4%	52.97	100.0%	17.10	54.0%
Total Sewer	$ 57.31	100.0%	$ 35.16	100.0%	$ 52.97	100.0%	$ 31.69	100.0%
Total Fixed	$ 17.55	16.0%	$ 10.11	16.8%	$ -	0.0%	$ 27.61	40.2%
Total Volumetric	91.81	84.0%	50.19	83.2%	94.37	100.0%	41.01	59.8%
Total Water/Sewer Charge	$ 109.36	100.0%	$ 60.30	100.0%	$ 94.37	100.0%	$ 68.62	100.0%

* Houston assesses residential sewer volumetric charges on full water consumption, not the winter average.

Commercial (2" Meter, 50,000 Gal. Water, 50,000 Gal. Sewer) - 2019 Rates

	Austin		Dallas		Houston		SAWS	
	Charge	%	Charge	%	Charge	%	Charge	%
Water Fixed	$ 83.40	22.2%	$ 32.54	14.0%	$ 12.71	5.3%	$ 96.79	31.9%
Water Volumetric	293.00	77.8%	199.30	86.0%	227.00	94.7%	206.56	68.1%
Total Water	$ 376.40	100.0%	$ 231.84	100.0%	$ 239.71	100.0%	$ 303.35	100.0%
Sewer Fixed	$ 10.30	2.2%	$ 28.50	12.2%	$ 12.84	3.8%	$ 36.31	15.2%
Sewer Volumetric	462.50	97.8%	205.50	87.8%	321.50	96.2%	201.79	84.8%
Total Sewer	$ 472.80	100.0%	$ 234.00	100.0%	$ 334.34	100.0%	$ 238.10	100.0%
Total Fixed	$ 93.70	11.0%	$ 61.04	13.1%	$ 25.55	4.5%	$ 133.10	24.6%
Total Volumetric	755.50	89.0%	404.80	86.9%	548.50	95.5%	408.35	75.4%
Total Water/Sewer Charge	$ 849.20	100.0%	$ 465.84	100.0%	$ 574.05	100.0%	$ 541.45	100.0%

Link to Matrix

ATTACHMENT II (PL-10 & PL-11)

San Antonio Water System
Schedule 8 - Residential Class Rates (Inside City Limits)

	Fiscal Year									
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Water										
Service Availability Charge by meter size										
5/8"	$ 12.77	$ 11.64	$ 10.72	$ 7.57	$ 7.31	$ 7.14	$ 7.14	$ 6.91	$ 6.91	$ 6.77
3/4"	$ 16.90	$ 15.41	$ 14.19	$ 10.63	$ 10.26	$ 10.01	$ 10.01	$ 9.68	$ 9.68	$ 8.59
1"	$ 25.12	$ 22.90	$ 21.09	$ 16.72	$ 16.14	$ 15.75	$ 15.75	$ 15.23	$ 15.23	$ 12.49
1-1/2"	$ 45.67	$ 41.63	$ 38.33	$ 31.94	$ 30.83	$ 30.09	$ 30.09	$ 29.10	$ 29.10	$ 22.25
2"	$ 70.30	$ 64.08	$ 59.01	$ 50.18	$ 48.44	$ 47.28	$ 47.28	$ 45.73	$ 45.73	$ 33.95
3"	$ 127.83	$ 116.53	$ 107.30	$ 92.80	$ 89.58	$ 87.44	$ 87.44	$ 84.56	$ 84.56	$ 61.27
4"	$ 209.99	$ 191.42	$ 176.26	$ 153.67	$ 148.33	$ 144.78	$ 144.78	$ 140.02	$ 140.02	$ 100.30
6"	$ 415.41	$ 378.67	$ 348.68	$ 305.86	$ 295.23	$ 288.17	$ 288.17	$ 278.69	$ 278.69	$ 197.89
8"	$ 661.90	$ 603.37	$ 555.59	$ 488.47	$ 471.50	$ 460.22	$ 460.22	$ 445.09	$ 445.09	$ 314.96
10"	$ 949.47	$ 865.51	$ 796.97	$ 701.52	$ 677.14	$ 660.95	$ 660.95	$ 639.22	$ 639.22	$ 451.57
12"	$ 1,771.12	$ 1,614.51	$ 1,486.66	$ 1,310.24	$ 1,264.71	$ 1,234.47	$ 1,234.47	$ 1,193.88	$ 1,193.88	$ 841.86
Reduction applied if usage is less than 2,993 gallons	$ (2.55)	$ (2.32)	$ (2.14)							
Usage *(per 100 gallons)*										
First 2,992 Gallons	$ 0.0737	$ 0.0672	$ 0.0619							
Next 1,497 Gallons	$ 0.1290	$ 0.1176	$ 0.1083							
Next 1,496 Gallons	$ 0.1658	$ 0.1511	$ 0.1391							
Next 1,496 Gallons	$ 0.2026	$ 0.1847	$ 0.1701							
Next 2,992 Gallons	$ 0.2395	$ 0.2183	$ 0.2010							
Next 4,489 Gallons	$ 0.2764	$ 0.2520	$ 0.2320							
Next 5,237 Gallons	$ 0.3316	$ 0.3023	$ 0.2784							
Over 20,199 Gallons	$ 0.4790	$ 0.4366	$ 0.4020							
Standard										
First 5,985 gallons				$ 0.1006	$ 0.0971	$ 0.0948	$ 0.0948	$ 0.0917	$ 0.0917	
Next 6,732 gallons				$ 0.1457	$ 0.1406	$ 0.1372	$ 0.1372	$ 0.1327	$ 0.1327	
Next 4,488 gallons				$ 0.2053	$ 0.1982	$ 0.1935	$ 0.1935	$ 0.1871	$ 0.1871	
Over 17,205 gallons				$ 0.3596	$ 0.3471	$ 0.3388	$ 0.3388	$ 0.3277	$ 0.3277	
Seasonal (a)										
First 5,985 gallons				$ 0.1006	$ 0.0971	$ 0.0948	$ 0.0948	$ 0.0917	$ 0.0917	
Next 6,732 gallons				$ 0.1584	$ 0.1529	$ 0.1492	$ 0.1492	$ 0.1443	$ 0.1443	
Next 4,488 gallons				$ 0.2355	$ 0.2273	$ 0.2219	$ 0.2219	$ 0.2146	$ 0.2146	
Over 17,205 gallons				$ 0.4880	$ 0.4710	$ 0.4597	$ 0.4597	$ 0.4446	$ 0.4446	
Standard:										
First 7,481 gallons										$ 0.0906
Next 5,236 gallons										$ 0.1309
Next 4,488 gallons										$ 0.2058
Over 17,205 gallons										$ 0.3288
Seasonal (a)										
First 7,481 gallons										$ 0.0906
Next 5,236 gallons										$ 0.1423
Next 4,488 gallons										$ 0.2217
Over 17,205 gallons										$ 0.4246
Sewer										
Service Availability Charge by meter size (b)										
5/8"	$ 13.15	$ 12.98	$ 12.29	$ 12.69	$ 11.93	$ 11.49	$ 9.86	$ 8.68	$ 8.68	$ 7.76
3/4"	$ 14.79	$ 14.28	$ 13.52	$ 12.69	$ 11.93	$ 11.49	$ 9.86	$ 8.68	$ 8.68	$ 7.76
1"	$ 16.80	$ 16.22	$ 15.36	$ 12.69	$ 11.93	$ 11.49	$ 9.86	$ 8.68	$ 8.68	$ 7.76
1-1/2"	$ 23.53	$ 22.71	$ 21.51	$ 12.69	$ 11.93	$ 11.49	$ 9.86	$ 8.68	$ 8.68	$ 7.76
2"	$ 33.62	$ 32.45	$ 30.73	$ 12.69	$ 11.93	$ 11.49	$ 9.86	$ 8.68	$ 8.68	$ 7.76
3"	$ 67.23	$ 64.89	$ 61.45	$ 12.69	$ 11.93	$ 11.49	$ 9.86	$ 8.68	$ 8.68	$ 7.76
4"	$ 100.84	$ 97.34	$ 92.18	$ 12.69	$ 11.93	$ 11.49	$ 9.86	$ 8.68	$ 8.68	$ 7.76
6"	$ 168.07	$ 162.23	$ 153.63	$ 12.69	$ 11.93	$ 11.49	$ 9.86	$ 8.68	$ 8.68	$ 7.76
8"	$ 268.90	$ 259.56	$ 245.80	$ 12.69	$ 11.93	$ 11.49	$ 9.86	$ 8.68	$ 8.68	$ 7.76
10"	$ 403.38	$ 389.36	$ 368.71	$ 12.69	$ 11.93	$ 11.49	$ 9.86	$ 8.68	$ 8.68	$ 7.76
12"	$ 537.83	$ 519.14	$ 491.61	$ 12.69	$ 11.93	$ 11.49	$ 9.86	$ 8.68	$ 8.68	$ 7.76
Usage per 100 gallons (c)										
1,497 gallons - 2,992 gallons	$ 0.2874	$ 0.2774	$ 0.2627							
Over 2,992 Gallons	$ 0.4312	$ 0.4162	$ 0.3941							
All gallons in excess of 1,496				$ 0.3365	$ 0.3163	$ 0.3017	$ 0.2615	$ 0.2302	$ 0.2302	$ 0.2057

(a) Prior to 2016, Seasonal rates were applied to all billings beginning May 1 and ending on or about September 30 of each year. At all other times, the Standard rate was applied
(b) Includes the first 1,496 gallons
(c) Residential sewer charges are computed on the basis of average winter usage for 90 days during three consecutive billing periods beginning after November 15 and ending on or before March 15 of each year

San Antonio Water System
Schedule 9 - Residential Class Rates (Outside City Limits)

	Fiscal Year									
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Water										
Service Availability Charge by meter size										
5/8"	$ 16.60	$ 15.14	$ 13.94	$ 9.86	$ 9.52	$ 9.29	$ 9.29	$ 8.98	$ 8.98	$ 8.78
3/4"	$ 21.97	$ 20.03	$ 18.44	$ 13.82	$ 13.34	$ 13.02	$ 13.02	$ 12.59	$ 12.59	$ 11.16
1"	$ 32.66	$ 29.78	$ 27.42	$ 21.72	$ 20.97	$ 20.47	$ 20.47	$ 19.80	$ 19.80	$ 16.23
1-1/2"	$ 59.37	$ 54.12	$ 49.83	$ 41.52	$ 40.08	$ 39.12	$ 39.12	$ 37.83	$ 37.83	$ 28.92
2"	$ 91.38	$ 83.30	$ 76.70	$ 63.26	$ 62.99	$ 61.48	$ 61.48	$ 59.46	$ 59.46	$ 44.14
3"	$ 166.18	$ 151.49	$ 139.49	$ 120.66	$ 116.47	$ 113.68	$ 113.68	$ 109.94	$ 109.94	$ 79.65
4"	$ 272.97	$ 248.84	$ 229.13	$ 199.78	$ 192.84	$ 188.23	$ 188.23	$ 182.04	$ 182.04	$ 130.39
6"	$ 540.02	$ 492.27	$ 453.29	$ 397.62	$ 383.80	$ 374.62	$ 374.62	$ 362.30	$ 362.30	$ 257.24
8"	$ 860.45	$ 784.37	$ 722.26	$ 635.03	$ 612.96	$ 598.30	$ 598.30	$ 578.63	$ 578.63	$ 409.45
10"	$ 1,234.30	$ 1,125.16	$ 1,036.06	$ 911.98	$ 880.29	$ 859.24	$ 859.24	$ 830.99	$ 830.99	$ 587.03
12"	$ 2,302.46	$ 2,098.87	$ 1,932.66	$ 1,703.33	$ 1,644.14	$ 1,604.82	$ 1,604.82	$ 1,552.05	$ 1,552.05	$ 1,094.42
Reduction applied if usage is less than 2,993 gallons	$ (3.32)	$ (3.03)	$ (2.79)							
Usage *(per 100 gallons)*										
First 2,992 Gallons	$ 0.0958	$ 0.0873	$ 0.0804							
Next 1,497 Gallons	$ 0.1676	$ 0.1528	$ 0.1407							
Next 1,496 Gallons	$ 0.2156	$ 0.1965	$ 0.1809							
Next 1,496 Gallons	$ 0.2634	$ 0.2401	$ 0.2211							
Next 2,992 Gallons	$ 0.3113	$ 0.2838	$ 0.2613							
Next 4,489 Gallons	$ 0.3593	$ 0.3275	$ 0.3016							
Next 5,237 Gallons	$ 0.4311	$ 0.3930	$ 0.3619							
Over 20,199 Gallons	$ 0.6228	$ 0.5677	$ 0.5227							
Standard										
First 5,985 gallons				$ 0.1310	$ 0.1264	$ 0.1234	$ 0.1234	$ 0.1193	$ 0.1193	
Next 6,732 gallons				$ 0.1894	$ 0.1828	$ 0.1784	$ 0.1784	$ 0.1725	$ 0.1725	
Next 4,488 gallons				$ 0.2671	$ 0.2578	$ 0.2516	$ 0.2516	$ 0.2433	$ 0.2433	
Over 17,205 gallons				$ 0.4675	$ 0.4513	$ 0.4405	$ 0.4405	$ 0.4260	$ 0.4260	
Seasonal (a)										
First 5,985 gallons				$ 0.1310	$ 0.1264	$ 0.1234	$ 0.1234	$ 0.1193	$ 0.1193	
Next 6,732 gallons				$ 0.2060	$ 0.1988	$ 0.1940	$ 0.1940	$ 0.1876	$ 0.1876	
Next 4,488 gallons				$ 0.3062	$ 0.2956	$ 0.2885	$ 0.2885	$ 0.2790	$ 0.2790	
Over 17,205 gallons				$ 0.6341	$ 0.6121	$ 0.5975	$ 0.5975	$ 0.5779	$ 0.5779	
Standard										
First 7,481 gallons										$ 0.1176
Next 5,236 gallons										$ 0.1702
Next 4,488 gallons										$ 0.2674
Over 17,205 gallons										$ 0.4274
Seasonal (a)										
First 7,481 gallons										$ 0.1176
Next 5,236 gallons										$ 0.1850
Next 4,488 gallons										$ 0.2882
Over 17,205 gallons										$ 0.5519
Sewer										
Service Availability Charge by meter size (b)										
5/8"	$ 16.14	$ 15.58	$ 14.75	$ 15.25	$ 14.33	$ 13.81	$ 11.85	$ 10.43	$ 10.43	$ 9.32
3/4"	$ 17.76	$ 17.14	$ 16.23	$ 15.25	$ 14.33	$ 13.81	$ 11.85	$ 10.43	$ 10.43	$ 9.32
1"	$ 20.17	$ 19.47	$ 18.44	$ 15.25	$ 14.33	$ 13.81	$ 11.85	$ 10.43	$ 10.43	$ 9.32
1-1/2"	$ 28.24	$ 27.26	$ 25.81	$ 15.25	$ 14.33	$ 13.81	$ 11.85	$ 10.43	$ 10.43	$ 9.32
2"	$ 40.35	$ 38.95	$ 36.88	$ 15.25	$ 14.33	$ 13.81	$ 11.85	$ 10.43	$ 10.43	$ 9.32
3"	$ 80.67	$ 77.87	$ 73.74	$ 15.25	$ 14.33	$ 13.81	$ 11.85	$ 10.43	$ 10.43	$ 9.32
4"	$ 121.02	$ 116.81	$ 110.62	$ 15.25	$ 14.33	$ 13.81	$ 11.85	$ 10.43	$ 10.43	$ 9.32
6"	$ 201.69	$ 194.68	$ 184.36	$ 15.25	$ 14.33	$ 13.81	$ 11.85	$ 10.43	$ 10.43	$ 9.32
8"	$ 322.70	$ 311.49	$ 294.97	$ 15.25	$ 14.33	$ 13.81	$ 11.85	$ 10.43	$ 10.43	$ 9.32
10"	$ 484.05	$ 467.23	$ 442.45	$ 15.25	$ 14.33	$ 13.81	$ 11.85	$ 10.43	$ 10.43	$ 9.32
12"	$ 645.40	$ 622.97	$ 589.93	$ 15.25	$ 14.33	$ 13.81	$ 11.85	$ 10.43	$ 10.43	$ 9.32
Usage per 100 gallons (c)										
1,497 gallons - 2,992 gallons	$ 0.3450	$ 0.3330	$ 0.3153	$ 0.4038	$ 0.3795	$ 0.3656	$ 0.3138	$ 0.2762	$ 0.2762	$ 0.2468
Over 2,992 Gallons	$ 0.5174	$ 0.4994	$ 0.4729	$ 0.4038	$ 0.3795	$ 0.3656	$ 0.3138	$ 0.2762	$ 0.2762	$ 0.2468

(a) Prior to 2016, Seasonal rates were applied to all billings beginning May 1 and ending on or about September 30 of each year. At all other times, the Standard rate is applied
(b) Includes the first 1,496 gallons
(c) Residential sewer charges are computed on the basis of average winter usage for 90 days during three consecutive billing periods beginning after November 15 and ending on or before March 15 of each year

San Antonio Water System
Schedule 10 - General Class Rates (Inside City Limits)

	Fiscal Year									
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Water										
Service Availability Charge by meter size										
5/8"	$ 13.80	$ 12.58	$ 11.58	$ 10.53	$ 10.16	$ 9.92	$ 9.92	$ 9.59	$ 9.59	$ 9.81
3/4"	$ 19.71	$ 17.97	$ 16.55	$ 15.05	$ 14.53	$ 14.18	$ 14.18	$ 13.71	$ 13.71	$ 13.16
1"	$ 31.53	$ 28.74	$ 26.46	$ 24.08	$ 23.24	$ 22.68	$ 22.68	$ 21.93	$ 21.93	$ 19.21
1-1/2"	$ 61.05	$ 55.65	$ 51.24	$ 46.65	$ 45.03	$ 43.95	$ 43.95	$ 42.50	$ 42.50	$ 35.03
2"	$ 96.40	$ 87.88	$ 80.92	$ 73.74	$ 71.18	$ 69.48	$ 69.48	$ 67.20	$ 67.20	$ 52.83
3"	$ 179.02	$ 163.19	$ 150.27	$ 136.96	$ 132.20	$ 129.04	$ 129.04	$ 124.80	$ 124.80	$ 106.92
4"	$ 297.00	$ 270.74	$ 249.30	$ 227.28	$ 219.38	$ 214.13	$ 214.13	$ 207.09	$ 207.09	$ 176.40
6"	$ 591.95	$ 539.61	$ 496.88	$ 453.06	$ 437.32	$ 426.86	$ 426.86	$ 412.82	$ 412.82	$ 350.03
8"	$ 945.95	$ 862.31	$ 794.02	$ 723.99	$ 698.83	$ 682.12	$ 682.12	$ 659.69	$ 659.69	$ 543.20
10"	$ 1,358.90	$ 1,238.74	$ 1,140.64	$ 1,040.08	$ 1,003.94	$ 979.93	$ 979.93	$ 947.71	$ 947.71	$ 755.89
12"	$ 2,538.80	$ 2,314.31	$ 2,131.04	$ 1,943.21	$ 1,875.69	$ 1,830.83	$ 1,830.83	$ 1,770.63	$ 1,770.63	$ 1,191.85
Usage *(per 100 gallons)*										
Base (a)	$ 0.1803	$ 0.1644	$ 0.1514	$ 0.1218	$ 0.1176	$ 0.1148	$ 0.1148	$ 0.1110	$ 0.1110	
100-125% of base	$ 0.2076	$ 0.1892	$ 0.1742	$ 0.1457	$ 0.1406	$ 0.1372	$ 0.1372	$ 0.1327	$ 0.1327	
125-175% of base	$ 0.2706	$ 0.2467	$ 0.2272	$ 0.2042	$ 0.1971	$ 0.1924	$ 0.1924	$ 0.1861	$ 0.1861	
Over 175% of base	$ 0.3158	$ 0.2879	$ 0.2651	$ 0.2991	$ 0.2887	$ 0.2818	$ 0.2818	$ 0.2725	$ 0.2725	
Usage *(per 100 gallons)*										
Below base (b)										$ 0.1086
100-125% of base										$ 0.1257
125-150% of base										$ 0.1633
150-200% of base										$ 0.2138
Over 200% of base										$ 0.3160
Sewer										
Service Availability Charge by meter size (c)										
By meter size										
5/8"	$ 13.45	$ 12.98	$ 12.29	$ 12.69	$ 11.93	$ 11.49	$ 9.86	$ 8.68	$ 8.68	$ 7.76
3/4"	$ 14.79	$ 14.28	$ 13.52	$ 12.69	$ 11.93	$ 11.49	$ 9.86	$ 8.68	$ 8.68	$ 7.76
1"	$ 16.80	$ 16.22	$ 15.36	$ 12.69	$ 11.93	$ 11.49	$ 9.86	$ 8.68	$ 8.68	$ 7.76
1-1/2"	$ 23.53	$ 22.71	$ 21.51	$ 12.69	$ 11.93	$ 11.49	$ 9.86	$ 8.68	$ 8.68	$ 7.76
2"	$ 33.62	$ 32.45	$ 30.73	$ 12.69	$ 11.93	$ 11.49	$ 9.86	$ 8.68	$ 8.68	$ 7.76
3"	$ 67.23	$ 64.89	$ 61.45	$ 12.69	$ 11.93	$ 11.49	$ 9.86	$ 8.68	$ 8.68	$ 7.76
4"	$ 100.84	$ 97.34	$ 92.18	$ 12.69	$ 11.93	$ 11.49	$ 9.86	$ 8.68	$ 8.68	$ 7.76
6"	$ 168.07	$ 162.23	$ 153.63	$ 12.69	$ 11.93	$ 11.49	$ 9.86	$ 8.68	$ 8.68	$ 7.76
8"	$ 268.90	$ 259.56	$ 245.80	$ 12.69	$ 11.93	$ 11.49	$ 9.86	$ 8.68	$ 8.68	$ 7.76
10"	$ 403.38	$ 389.36	$ 368.71	$ 12.69	$ 11.93	$ 11.49	$ 9.86	$ 8.68	$ 8.68	$ 7.76
12"	$ 537.83	$ 519.14	$ 491.61	$ 12.69	$ 11.93	$ 11.49	$ 9.86	$ 8.68	$ 8.68	$ 7.76
Usage *(per 100 gallons)*										
All gallons in excess of 1,496	$ 0.3851	$ 0.3717	$ 0.3520	$ 0.3365	$ 0.3163	$ 0.3047	$ 0.2615	$ 0.2302	$ 0.2302	$ 0.2057

(a) Since 2010, base has been defined as 100% of the previous year's annual usage divided by 12
(b) Base was defined as 90% of the previous year's annual usage divided by 12
(c) Per 100 gallons. Includes the first 1,496 gallons

San Antonio Water System
Schedule II - General Class Rates (Outside City Limits)

	Fiscal Year									
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Water										
Service Availability Charge by meter size										
5/8"	$ 16.87	$ 15.38	$ 14.16	$ 13.69	$ 13.21	$ 12.89	$ 12.89	$ 12.47	$ 12.47	$ 11.83
3/4"	$ 24.02	$ 21.90	$ 20.17	$ 19.56	$ 18.88	$ 18.43	$ 18.43	$ 17.82	$ 17.82	$ 15.72
1"	$ 38.30	$ 34.91	$ 32.15	$ 31.29	$ 30.20	$ 29.48	$ 29.48	$ 28.51	$ 28.51	$ 22.94
1-1/2"	$ 73.97	$ 67.43	$ 62.09	$ 60.65	$ 58.54	$ 57.14	$ 57.14	$ 55.26	$ 55.26	$ 41.69
2"	$ 116.73	$ 106.41	$ 97.98	$ 95.87	$ 92.54	$ 90.33	$ 90.33	$ 87.36	$ 87.36	$ 63.01
3"	$ 216.60	$ 197.45	$ 181.81	$ 178.06	$ 171.87	$ 167.76	$ 167.76	$ 162.24	$ 162.24	$ 125.31
4"	$ 359.21	$ 327.45	$ 301.52	$ 295.46	$ 285.19	$ 278.37	$ 278.37	$ 269.22	$ 269.22	$ 206.48
6"	$ 715.81	$ 652.52	$ 600.85	$ 588.98	$ 568.51	$ 554.91	$ 554.91	$ 536.66	$ 536.66	$ 409.39
8"	$ 1,143.74	$ 1,042.61	$ 960.05	$ 941.20	$ 908.49	$ 886.76	$ 886.76	$ 857.60	$ 857.60	$ 637.69
10"	$ 1,642.97	$ 1,497.69	$ 1,379.09	$ 1,352.11	$ 1,305.13	$ 1,273.92	$ 1,273.92	$ 1,232.03	$ 1,232.03	$ 891.35
12"	$ 3,069.37	$ 2,797.97	$ 2,576.40	$ 2,526.17	$ 2,438.39	$ 2,380.08	$ 2,380.08	$ 2,301.82	$ 2,301.82	$ 1,444.41
Usage *(per 100 gallons)*										
Base (a)	$ 0.2345	$ 0.2138	$ 0.1969	$ 0.1584	$ 0.1529	$ 0.1492	$ 0.1492	$ 0.1443	$ 0.1443	
100-125% of base	$ 0.2699	$ 0.2460	$ 0.2265	$ 0.1893	$ 0.1827	$ 0.1783	$ 0.1783	$ 0.1724	$ 0.1724	
125-175% of base	$ 0.3519	$ 0.3208	$ 0.2954	$ 0.2654	$ 0.2562	$ 0.2501	$ 0.2501	$ 0.2419	$ 0.2419	
Over 175% of base	$ 0.4105	$ 0.3742	$ 0.3446	$ 0.3887	$ 0.3752	$ 0.3662	$ 0.3662	$ 0.3542	$ 0.3542	
Usage *(per 100 gallons)*										
Below base (b)										$ 0.1410
100-125% of base										$ 0.1635
125-150% of base										$ 0.2121
150-200% of base										$ 0.2778
Over 200% of base										$ 0.4109
Sewer										
Service Availability Charge by meter size (c)										
By meter size										
5/8"	$ 16.14	$ 15.58	$14.75	$15.25	$14.33	$13.81	$11.85	$10.43	$10.43	$9.32
3/4"	$ 17.76	$ 17.14	$16.23	$15.25	$14.33	$13.81	$11.85	$10.43	$10.43	$9.32
1"	$ 20.17	$ 19.47	$18.44	$15.25	$14.33	$13.81	$11.85	$10.43	$10.43	$9.32
1-1/2"	$ 28.24	$ 27.26	$25.81	$15.25	$14.33	$13.81	$11.85	$10.43	$10.43	$9.32
2"	$ 40.35	$ 38.95	$36.88	$15.25	$14.33	$13.81	$11.85	$10.43	$10.43	$9.32
3"	$ 80.67	$ 77.87	$73.74	$15.25	$14.33	$13.81	$11.85	$10.43	$10.43	$9.32
4"	$ 121.02	$ 116.81	$110.62	$15.25	$14.33	$13.81	$11.85	$10.43	$10.43	$9.32
6"	$ 201.69	$ 194.68	$184.36	$15.25	$14.33	$13.81	$11.85	$10.43	$10.43	$9.32
8"	$ 322.70	$ 311.49	$294.97	$15.25	$14.33	$13.81	$11.85	$10.43	$10.43	$9.32
10"	$ 484.05	$ 467.23	$442.45	$15.25	$14.33	$13.81	$11.85	$10.43	$10.43	$9.32
12"	$ 645.40	$ 622.97	$589.93	$15.25	$14.33	$13.81	$11.85	$10.43	$10.43	$9.32
Usage *(per 100 gallons)*										
All gallons in excess of 1,496	$ 0.4622	$ 0.4461	$ 0.4224	$ 0.4038	$ 0.3795	$ 0.3656	$ 0.3138	$ 0.2762	$ 0.2762	$ 0.2468

(a) Since 2010, base has been defined as 100% of the previous year's annual usage divided by 12
(b) Base was defined as 90% of the previous year's annual usage divided by 12
(c) Per 100 gallons. Includes the first 1,496 gallons

San Antonio Water System
Schedule 12 - Wholesale Class Rates

	Fiscal Year									
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Water										
Service Availability Charge by meter size										
6"	$ 536.70	$ 489.24	$ 450.50	$ 397.62	$ 383.80	$ 374.62	$ 374.62	$ 362.30	$ 362.30	$ 257.24
8"	$ 857.15	$ 781.36	$ 719.48	$ 635.03	$ 612.96	$ 598.30	$ 598.30	$ 578.63	$ 578.63	$ 409.45
10"	$ 1,230.99	$ 1,122.14	$ 1,033.28	$ 911.98	$ 880.29	$ 859.24	$ 859.24	$ 830.99	$ 830.99	$ 587.03
12"	$ 2,299.15	$ 2,095.85	$ 1,929.88	$ 1,703.33	$ 1,644.14	$ 1,604.82	$ 1,604.82	$ 1,552.05	$ 1,552.05	$ 1,094.42
Usage *(per 100 gallons)*										
Base (a)	$ 0.2091	$ 0.1906	$ 0.1755							
Over Base	$ 0.6274	$ 0.5719	$ 0.5266							
Usage *(per 100 gallons)*										
Base (a)				$ 0.1098	$ 0.1060	$ 0.1035	$ 0.1035	$ 0.1001	$ 0.1001	
100-125% of base				$ 0.1650	$ 0.1593	$ 0.1555	$ 0.1555	$ 0.1504	$ 0.1504	
125-175% of base				$ 0.2383	$ 0.2300	$ 0.2245	$ 0.2245	$ 0.2171	$ 0.2171	
Over 175% of base				$ 0.3369	$ 0.3252	$ 0.3174	$ 0.3174	$ 0.3070	$ 0.3070	
Below base (b)										
100-125% of base										$ 0.1025
125-150% of base										$ 0.1279
150-200% of base										$ 0.1760
Over 200% of base										$ 0.2346
										$ 0.3075
Sewer										
Service Availability Charge	$ 314.88	$ 303.94	$ 287.82	$ 149.02	$ 140.06	$ 134.93	$ 115.82	$ 101.95	$ 101.95	$ 91.11
Usage *(per 100 gallons)*	$ 0.4109	$ 0.3966	$ 0.3756	$ 0.3641	$ 0.3422	$ 0.3297	$ 0.2830	$ 0.2491	$ 0.2491	$ 0.2226

(a) Base is defined as 100% of the previous year's average annual usage divided by twelve or (effective June 18, 2015) as agreed to by the wholesale customer and approved by the SAWS Board of Trustees.
(b) Base was defined as 90% of the previous year's average annual usage divided by twelve.

San Antonio Water System
Schedule 13 - Irrigation Class Rates

	Fiscal Year									
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Inside City Limits										
Service Availability Charge by meter size:										
5/8"	$ 13.80	$ 12.58	$ 11.58	$ 10.53	$ 10.16	$ 9.92	$ 9.92	$ 9.59	$ 9.59	$ 9.81
3/4"	$ 19.71	$ 17.97	$ 16.55	$ 15.05	$ 14.53	$ 14.18	$ 14.18	$ 13.71	$ 13.71	$ 13.16
1"	$ 31.53	$ 28.74	$ 26.46	$ 24.08	$ 23.24	$ 22.68	$ 22.68	$ 21.93	$ 21.93	$ 19.21
1-1/2"	$ 61.05	$ 55.65	$ 51.24	$ 46.65	$ 45.03	$ 43.95	$ 43.95	$ 42.50	$ 42.50	$ 35.03
2"	$ 96.40	$ 87.88	$ 80.92	$ 73.74	$ 71.18	$ 69.48	$ 69.48	$ 67.20	$ 67.20	$ 52.83
3"	$ 179.02	$ 163.19	$ 150.27	$ 136.96	$ 132.20	$ 129.04	$ 129.04	$ 124.80	$ 124.80	$ 106.92
4"	$ 297.00	$ 270.74	$ 249.30	$ 227.28	$ 219.38	$ 214.13	$ 214.13	$ 207.09	$ 207.09	$ 176.40
6"	$ 591.95	$ 539.61	$ 496.88	$ 453.06	$ 437.32	$ 426.86	$ 426.86	$ 412.82	$ 412.82	$ 350.03
8"	$ 945.95	$ 862.31	$ 794.02	$ 723.99	$ 698.83	$ 682.12	$ 682.12	$ 659.69	$ 659.69	$ 543.20
10"	$ 1,358.90	$ 1,238.74	$ 1,140.64	$ 1,040.08	$ 1,003.94	$ 979.93	$ 979.93	$ 947.71	$ 947.71	$ 755.89
12"	$ 2,538.80	$ 2,314.31	$ 2,131.04	$ 1,943.21	$ 1,875.69	$ 1,830.83	$ 1,830.83	$ 1,770.63	$ 1,770.63	$ 1,191.85
Usage *(per 100 gallons)*										
First 8,229 gallons	$ 0.3279	$ 0.2989	$ 0.2752							
Next 9,725 gallons	$ 0.4589	$ 0.4183	$ 0.3852							
Next 144,362 gallons	$ 0.5901	$ 0.5379	$ 0.4953							
Over 162,316 gallons	$ 0.7540	$ 0.6873	$ 0.6329							
Standard:										
First 6,732 gallons				$ 0.1713	$ 0.1653	$ 0.1613	$ 0.1613	$ 0.1560	$ 0.1560	
Next 10,473 gallons				$ 0.2053	$ 0.1982	$ 0.1935	$ 0.1935	$ 0.1871	$ 0.1871	
Over 17,205 gallons				$ 0.3596	$ 0.3471	$ 0.3388	$ 0.3388	$ 0.3277	$ 0.3277	
Seasonal (a):										
First 6,732 gallons				$ 0.1713	$ 0.1653	$ 0.1613	$ 0.1613	$ 0.1560	$ 0.1560	
Next 10,473 gallons				$ 0.2384	$ 0.2301	$ 0.2246	$ 0.2246	$ 0.2172	$ 0.2172	
Over 17,205 gallons				$ 0.4936	$ 0.4764	$ 0.4650	$ 0.4650	$ 0.4497	$ 0.4497	
First 12,717 gallons										$ 0.1526
Next 4,488 gallons										$ 0.2290
Over 17,205 gallons										$ 0.3160
Outside City Limits										
Service Availability Charge by meter size:										
5/8"	$ 16.87	$ 15.38	$ 14.16	$ 13.69	$ 13.21	$ 12.89	$ 12.89	$ 12.47	$ 12.47	$ 11.83
3/4"	$ 24.02	$ 21.90	$ 20.17	$ 19.56	$ 18.88	$ 18.43	$ 18.43	$ 17.82	$ 17.82	$ 15.72
1"	$ 38.30	$ 34.91	$ 32.15	$ 31.29	$ 30.20	$ 29.48	$ 29.48	$ 28.51	$ 28.51	$ 22.94
1-1/2"	$ 73.97	$ 67.43	$ 62.09	$ 60.65	$ 58.54	$ 57.14	$ 57.14	$ 55.26	$ 55.26	$ 41.69
2"	$ 116.73	$ 106.41	$ 97.98	$ 95.87	$ 92.54	$ 90.33	$ 90.33	$ 87.36	$ 87.36	$ 63.01
3"	$ 216.60	$ 197.45	$ 181.81	$ 178.06	$ 171.87	$ 167.76	$ 167.76	$ 162.24	$ 162.24	$ 125.31
4"	$ 359.21	$ 327.45	$ 301.52	$ 295.46	$ 285.19	$ 278.37	$ 278.37	$ 269.22	$ 269.22	$ 206.48
6"	$ 715.81	$ 652.52	$ 600.85	$ 588.98	$ 568.51	$ 554.91	$ 554.91	$ 536.66	$ 536.66	$ 409.39
8"	$ 1,143.74	$ 1,042.61	$ 960.05	$ 941.20	$ 908.49	$ 886.76	$ 886.76	$ 857.60	$ 857.60	$ 637.69
10"	$ 1,642.97	$ 1,497.69	$ 1,379.09	$ 1,352.11	$ 1,305.13	$ 1,273.92	$ 1,273.92	$ 1,232.03	$ 1,232.03	$ 891.35
12"	$ 3,069.37	$ 2,797.97	$ 2,576.40	$ 2,526.17	$ 2,438.39	$ 2,380.08	$ 2,380.08	$ 2,301.82	$ 2,301.82	$ 1,444.41
Usage *(per 100 gallons)*										
First 8,229 gallons	$ 0.4262	$ 0.3885	$ 0.3577							
Next 9,725 gallons	$ 0.5967	$ 0.5439	$ 0.5008							
Next 144,362 gallons	$ 0.7671	$ 0.6993	$ 0.6439							
Over 162,316 gallons	$ 0.9802	$ 0.8935	$ 0.8227							
Standard:										
First 6,732 gallons				$ 0.2225	$ 0.2148	$ 0.2097	$ 0.2097	$ 0.2028	$ 0.2028	
Next 10,473 gallons				$ 0.2670	$ 0.2577	$ 0.2515	$ 0.2515	$ 0.2432	$ 0.2432	
Over 17,205 gallons				$ 0.4675	$ 0.4513	$ 0.4405	$ 0.4405	$ 0.4260	$ 0.4260	
Seasonal (a):										
First 6,732 gallons				$ 0.2225	$ 0.2148	$ 0.2097	$ 0.2097	$ 0.2028	$ 0.2028	
Next 10,473 gallons				$ 0.3100	$ 0.2992	$ 0.2920	$ 0.2920	$ 0.2824	$ 0.2824	
Over 17,205 gallons				$ 0.6416	$ 0.6193	$ 0.6045	$ 0.6045	$ 0.5846	$ 0.5846	
First 12,717 gallons										$ 0.1982
Next 4,488 gallons										$ 0.2976
Over 17,205 gallons										$ 0.4109

(a) Seasonal rates were applied to all billings beginning May 1 and ending on or about September 30 of each year. At all other times, the Standard rate was applied.

San Antonio Water System
Schedule 14 - Other Fees

	Fiscal Year									
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Water Supply Fee (a):										
Usage *(per 100 gallons)*										
Residential Class										
First 2,992 Gallons	$ 0.0997	$ 0.0954	$ 0.0892							
Next 1,497 Gallons	$ 0.1744	$ 0.1669	$ 0.1561							
Next 1,496 Gallons	$ 0.2242	$ 0.2145	$ 0.2007							
Next 1,496 Gallons	$ 0.2741	$ 0.2623	$ 0.2454							
Next 2,992 Gallons	$ 0.3240	$ 0.3100	$ 0.2900							
Next 4,489 Gallons	$ 0.3738	$ 0.3577	$ 0.3346							
Next 5,237 Gallons	$ 0.4485	$ 0.4292	$ 0.4015							
Over 20,199 Gallons	$ 0.6477	$ 0.6198	$ 0.5798							
First 5,985 gallons				$ 0.1285	$ 0.1223	$ 0.1080	$ 0.1054	$ 0.1023	$ 0.1023	
Next 6,732 gallons				$ 0.1858	$ 0.1768	$ 0.1562	$ 0.1524	$ 0.1480	$ 0.1480	
Next 4,488 gallons				$ 0.2622	$ 0.2495	$ 0.2204	$ 0.2150	$ 0.2087	$ 0.2087	
Over 17,205 gallons				$ 0.4589	$ 0.4366	$ 0.3857	$ 0.3763	$ 0.3653	$ 0.3653	
All usage										$ 0.1529
General Class										
Base (b)	$ 0.1880	$ 0.1799	$ 0.1683	$ 0.1976	$ 0.1880	$ 0.1661	$ 0.1620	$ 0.1573	$ 0.1573	$ 0.1529
100-125% of base	$ 0.2163	$ 0.2070	$ 0.1936	$ 0.1976	$ 0.1880	$ 0.1661	$ 0.1620	$ 0.1573	$ 0.1573	$ 0.1529
125-175% of base	$ 0.2820	$ 0.2699	$ 0.2525	$ 0.1976	$ 0.1880	$ 0.1661	$ 0.1620	$ 0.1573	$ 0.1573	$ 0.1529
Over 175% of base	$ 0.3291	$ 0.3149	$ 0.2946	$ 0.1976	$ 0.1880	$ 0.1661	$ 0.1620	$ 0.1573	$ 0.1573	$ 0.1529
Wholesale Class										
Base (c)	$ 0.2449	$ 0.2344	$ 0.2193	$ 0.1976	$ 0.1880	$ 0.1661	$ 0.1620	$ 0.1573	$ 0.1573	$ 0.1529
Over Base	$ 0.7349	$ 0.7033	$ 0.6579	$ 0.1976	$ 0.1880	$ 0.1661	$ 0.1620	$ 0.1573	$ 0.1573	$ 0.1529
Irrigation Class										
First 8,229 gallons	$ 0.2460	$ 0.2354	$ 0.2202							
Next 9,725 gallons	$ 0.3444	$ 0.3296	$ 0.3083							
Next 144,362 gallons	$ 0.4429	$ 0.4238	$ 0.3964							
Over 162,316 gallons	$ 0.5660	$ 0.5416	$ 0.5066							
First 6,732 gallons				$ 0.1976	$ 0.1880	$ 0.1661	$ 0.1620	$ 0.1573	$ 0.1573	$ 0.1529
Next 10,473 gallons				$ 0.2622	$ 0.2495	$ 0.2204	$ 0.2150	$ 0.2087	$ 0.2087	$ 0.1529
Over 17,205 gallons				$ 0.4976	$ 0.4735	$ 0.4183	$ 0.4081	$ 0.3962	$ 0.3962	$ 0.1529
EAA Fee (d)	$ 0.03533	$ 0.03612	$ 0.04259	$ 0.03311	$ 0.03295	$ 0.03425	$ 0.03901	$ 0.01407	$ 0.01841	$ 0.01222
State-Imposed TCEQ Fees (e)										
Water Connection Fee	$ 0.20	$ 0.18	$ 0.18	$ 0.18	$ 0.18	$ 0.17	$ 0.17	$ 0.19	$ 0.19	
Wastewater Connection Fee	$ 0.06	$ 0.06	$ 0.06	$ 0.06	$ 0.06	$ 0.06	$ 0.06	$ 0.05	$ 0.05	

(a) Applies to all billed potable water.
(b) Base is defined as 100% of the previous year's average annual usage divided by twelve
(c) Base is defined as 100% of the previous year's average annual usage divided by twelve or (effective June 18, 2015) as agreed to by the wholesale customer and approved by the SAWS Board of Trustees.
(d) Per 100 gallons. Applies to all billed potable water. Purpose of fee is to recover fees paid to Edwards Aquifer Authority for permitted water rights. Annual rate takes into account any cumulative deficit or surplus in the recovery, number of EAA water rights, and projected potable water sales in gallons for the year.
(e) Purpose is to recover fees paid to Texas Commission on Environmental Quality (TCEQ). Each fee is assessed monthly to all Residential, General, and Wholesale accounts as well as each apartment account based on the number of units. Annual rate takes into account any cumulative deficit or surplus in the recovery.

San Antonio Water System
Schedule 15 - Recycled Water Rates

	Fiscal Year									
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Edwards Exchange Customers (a)										
Service Availability Charge by meter size										
5/8"	$ 12.12	$ 11.24	$ 10.42	$ 9.51	$ 9.26	$ 9.04	$ 9.04	$ 8.74	$ 8.74	$ 8.74
3/4"	$ 15.77	$ 14.63	$ 13.56	$ 12.37	$ 12.05	$ 11.76	$ 11.76	$ 11.37	$ 11.37	$ 11.37
1"	$ 20.55	$ 19.06	$ 17.66	$ 16.11	$ 15.69	$ 15.31	$ 15.31	$ 14.81	$ 14.81	$ 14.81
1-1/2"	$ 32.65	$ 30.29	$ 28.07	$ 25.61	$ 24.95	$ 24.35	$ 24.35	$ 23.55	$ 23.55	$ 23.55
2"	$ 47.74	$ 44.29	$ 41.05	$ 37.45	$ 36.48	$ 35.61	$ 35.61	$ 34.44	$ 34.44	$ 34.44
3"	$ 126.98	$ 117.79	$ 109.17	$ 99.61	$ 97.03	$ 94.71	$ 94.71	$ 91.60	$ 91.60	$ 91.60
4"	$ 188.75	$ 175.09	$ 162.27	$ 148.06	$ 144.22	$ 140.77	$ 140.77	$ 136.14	$ 136.14	$ 136.14
6"	$ 360.05	$ 334.00	$ 309.55	$ 282.44	$ 275.12	$ 268.54	$ 268.54	$ 259.71	$ 259.71	$ 259.71
8"	$ 542.73	$ 503.46	$ 466.60	$ 425.73	$ 414.70	$ 404.78	$ 404.78	$ 391.47	$ 391.47	$ 391.47
10"	$ 744.20	$ 690.35	$ 639.81	$ 583.77	$ 568.64	$ 555.04	$ 555.04	$ 536.79	$ 536.79	$ 536.79
12"	$ 918.22	$ 851.78	$ 789.42	$ 720.27	$ 701.61	$ 684.83	$ 684.83	$ 662.31	$ 662.31	$ 662.31
Usage *(per 100 gallons)*										
Standard:										
Transferred amount	$ 0.0319	$ 0.0296	$ 0.0274	$ 0.0250	$ 0.0244	$ 0.0238	$ 0.0238	$ 0.0230	$ 0.0230	$ 0.0230
In excess of transferred amount	$ 0.1196	$ 0.1109	$ 0.1028	$ 0.0938	$ 0.0914	$ 0.0892	$ 0.0892	$ 0.0863	$ 0.0863	$ 0.0863
Seasonal (b):										
Transferred amount	$ 0.0319	$ 0.0296	$ 0.0274	$ 0.0250	$ 0.0244	$ 0.0238	$ 0.0238	$ 0.0230	$ 0.0230	$ 0.0230
In excess of transferred amount	$ 0.1271	$ 0.1179	$ 0.1093	$ 0.0997	$ 0.0971	$ 0.0948	$ 0.0948	$ 0.0917	$ 0.0917	$ 0.0917
Non-exchange Customers										
Service Availability Charge by meter size										
5/8"	$ 12.12	$ 11.24	$ 10.42	$ 9.51	$ 9.26	$ 9.04	$ 9.04	$ 8.74	$ 8.74	$ 8.74
3/4"	$ 15.77	$ 14.63	$ 13.56	$ 12.37	$ 12.05	$ 11.76	$ 11.76	$ 11.37	$ 11.37	$ 11.37
1"	$ 20.55	$ 19.06	$ 17.66	$ 16.11	$ 15.69	$ 15.31	$ 15.31	$ 14.81	$ 14.81	$ 14.81
1-1/2"	$ 32.65	$ 30.29	$ 28.07	$ 25.61	$ 24.95	$ 24.35	$ 24.35	$ 23.55	$ 23.55	$ 23.55
2"	$ 47.74	$ 44.29	$ 41.05	$ 37.45	$ 36.48	$ 35.61	$ 35.61	$ 34.44	$ 34.44	$ 34.44
3"	$ 126.98	$ 117.79	$ 109.17	$ 99.61	$ 97.03	$ 94.71	$ 94.71	$ 91.60	$ 91.60	$ 91.60
4"	$ 188.75	$ 175.09	$ 162.27	$ 148.06	$ 144.22	$ 140.77	$ 140.77	$ 136.14	$ 136.14	$ 136.14
6"	$ 360.05	$ 334.00	$ 309.55	$ 282.44	$ 275.12	$ 268.54	$ 268.54	$ 259.71	$ 259.71	$ 259.71
8"	$ 542.73	$ 503.46	$ 466.60	$ 425.73	$ 414.70	$ 404.78	$ 404.78	$ 391.47	$ 391.47	$ 391.47
10"	$ 744.20	$ 690.35	$ 639.81	$ 583.77	$ 568.64	$ 555.04	$ 555.04	$ 536.79	$ 536.79	$ 536.79
12"	$ 918.22	$ 851.78	$ 789.42	$ 720.27	$ 701.61	$ 684.83	$ 684.83	$ 662.31	$ 662.31	$ 662.31
Usage *(per 100 gallons)*										
Standard:										
First 748,000 gallons	$ 0.1280	$ 0.1187	$ 0.1100	$ 0.1004	$ 0.0978	$ 0.0955	$ 0.0955	$ 0.0924	$ 0.0924	$ 0.0924
Over 748,000 gallons	$ 0.1308	$ 0.1213	$ 0.1124	$ 0.1026	$ 0.0999	$ 0.0975	$ 0.0975	$ 0.0943	$ 0.0943	$ 0.0943
Seasonal (b										
First 748,000 gallons	$ 0.1376	$ 0.1276	$ 0.1183	$ 0.1079	$ 0.1051	$ 0.1026	$ 0.1026	$ 0.0992	$ 0.0992	$ 0.0992
Over 748,000 gallons	$ 0.1388	$ 0.1288	$ 0.1194	$ 0.1089	$ 0.1061	$ 0.1036	$ 0.1036	$ 0.1002	$ 0.1002	$ 0.1002

(a) Customers that have transferred Edwards Aquifer water rights to SAWS in exchange for recycled water

(b) Prior to 2012, Seasonal rates were applied to all billings beginning July 1 and ending on or about October 31 of each year. At all other times the Standard rate was utilized. Beginning in 2012 rate is applied to all billings beginning May 1 and ending on or about September 30 of each year. At all other times the Standard rate is utilized

San Antonio Water System
Schedule 16 - Impact Fees

	Fiscal Year									
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Water										
Flow - All Areas	$ 1,182.00	$ 1,182.00	$ 1,182.00	$ 1,182.00	$ 1,182.00	$ 1,247.00	$ 1,247.00	$ 1,247.00	$ 1,098.00	$ 1,098.00
System Development										
Low Elevation Service Area	$ 619.00	$ 619.00	$ 619.00	$ 619.00	$ 619.00	$ 579.00	$ 579.00	$ 579.00	$ 668.00	$ 668.00
Middle Elevation Service Area	$ 799.00	$ 799.00	$ 799.00	$ 799.00	$ 799.00	$ 774.00	$ 774.00	$ 774.00	$ 591.00	$ 591.00
High Elevation Service Area	$ 883.00	$ 883.00	$ 883.00	$ 883.00	$ 883.00	$ 966.00	$ 966.00	$ 966.00	$ 1,356.00	$ 1,356.00
Wastewater										
Treatment										
Dos Rios/Leon Creek Service Area	$ 786.00	$ 786.00	$ 786.00	$ 786.00	$ 786.00	$ 552.00	$ 552.00	$ 552.00		
Medio Creek	$ 1,429.00	$ 1,429.00	$ 1,429.00	$ 1,429.00	$ 1,429.00	$ 1,379.00	$ 1,379.00	$ 1,379.00		
Upper and Lower Service Areas									$ 453.00	$ 453.00
Far West-Medio Service Areas									$ 901.00	$ 901.00
Collection										
Medio Creek	$ 838.00	$ 838.00	$ 838.00	$ 838.00	$ 838.00	$ 582.00	$ 582.00	$ 582.00		
Upper Medina	$ 1,565.00	$ 1,565.00	$ 1,565.00	$ 1,565.00	$ 1,565.00	$ 1,053.00	$ 1,053.00	$ 1,053.00		
Lower Medina	$ 475.00	$ 475.00	$ 475.00	$ 475.00	$ 475.00	$ 594.00	$ 594.00	$ 594.00		
Upper Collection	$ 2,520.00	$ 2,520.00	$ 2,520.00	$ 2,520.00	$ 2,520.00	$ 1,795.00	$ 1,795.00	$ 1,795.00		
Middle Collection	$ 1,469.00	$ 1,469.00	$ 1,469.00	$ 1,469.00	$ 1,469.00	$ 1,142.00	$ 1,142.00	$ 1,142.00		
Lower Collection	$ 719.00	$ 719.00	$ 719.00	$ 719.00	$ 719.00	$ 552.00	$ 552.00	$ 552.00		
Lower Service Area									$ 413.00	$ 413.00
Upper Service Area									$ 691.00	$ 691.00
Far West-Medio Service Areas									$ 394.00	$ 394.00
Far West-Portions Big Sons & Lucas Service Area									$ 772.00	$ 772.00
Water Supply - All Areas (a)	$ 2,796.00	$ 2,796.00	$ 2,796.00	$ 2,796.00	$ 1,530.00	$ 1,297.00	$ 1,297.00	$ 1,297.00	$ 1,242.00	$ 1,242.00

Impact fees are assessed per equivalent dwelling unit

Meter Size	EQUIVALENT DWELLING UNITS									
5/8"	1	1	1	1	1	1	1	1	1	1
3/4"	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
1"	2	2	2	2	2	2	2	2	2	2
1 1/2"	5	5	5	5	5	5	5	5	5	5
2"	14	14	14	14	14	14	14	14	14	14
3"	30	30	30	30	30	30	30	30	30	30
4"	50	50	50	50	50	50	50	50	50	50
6"	105	105	105	105	105	105	105	105	105	105
8"	135	135	135	135	135	135	135	135	135	135
10"	190	190	190	190	190	190	190	190	190	190
12"	360	360	360	360	360	360	360	360	360	360

a 2015 rate effective June 1, 2015

Link to Matrix

ATTACHMENT III (PL-11)

PRIOR TO JANUARY 1, 2016, THE FEE WAS BASED ON PARCEL SIZE (NOT BASED ON IMPERVIOUS COVER).

STORM WATER UTILITY FEE
RATE SCHEDULE

	Description	Ordinance 77949 May 13, 1993 original rate	Ordinance 90499 September 16, 1999 15% increase	Ordinance 96515 October 3, 2002 30% increase	Ordinance 98635 December 18, 2003 3.38% increase	Ordinance 100066 December 9, 2004 19.5% increase	Ordinance 2006-11-09-1281 November 9, 2006 6.8% increase	Ordinance 2007-09-20-0968 September 20, 2007 8.24% increase
Residential								
Category	Lot Size (sq. ft.)							
Tier 1	< 5,000	$ 1.50	$ 1.73	$ 2.25	$ 2.33	$ 2.78	$ 2.97	$ 3.22
Tier 2	≥ 5,000	$ 1.99	$ 2.29	$ 2.98	$ 3.08	$ 3.68	$ 3.93	$ 4.25
Multifamily								
Category	Lot Size (sq. ft.)							
Tier 1	< 22,000	$ 3.35	$ 3.85	$ 5.01	$ 5.18	$ 6.19	$ 6.61	$ 7.19
Tier 2	≥ 22,000 - 44,000	$ 10.49	$ 12.06	$ 15.68	$ 16.21	$ 19.37	$ 20.69	$ 22.39
Tier 3	≥ 44,000 - 132,000	$ 31.81	$ 36.58	$ 47.55	$ 49.15	$ 58.73	$ 62.73	$ 67.90
Tier 4	≥ 132,000	$ 151.36	$ 174.06	$ 226.28	$ 233.88	$ 279.49	$ 298.49	$ 323.09
Commercial								
Category	Lot Size (sq. ft.)							
Tier 1	< 22,000	$ 8.58	$ 9.87	$ 12.83	$ 13.26	$ 15.85	$ 16.92	$ 18.32
Tier 2	≥ 22,000 - 44,000	$ 23.48	$ 27.00	$ 35.10	$ 36.28	$ 43.35	$ 46.30	$ 50.12
Tier 3	≥ 44,000 - 87,000	$ 42.08	$ 48.39	$ 62.91	$ 65.02	$ 77.70	$ 82.98	$ 89.82
Tier 4	≥ 87,000 - 132,000	$ 72.52	$ 83.40	$ 108.42	$ 112.06	$ 133.91	$ 143.02	$ 154.81
Tier 5	≥ 132,000	$ 160.23	$ 184.26	$ 239.54	$ 247.59	$ 295.87	$ 315.99	$ 342.03
Public								
Category	Lot Size (sq. ft.)							
Tier 1	< 22,000	$ 8.50	$ 9.78	$ 12.71	$ 13.14	$ 15.70	$ 16.77	$ 18.15
Tier 2	≥ 22,000 - 44,000	$ 23.25	$ 26.74	$ 34.76	$ 35.93	$ 42.94	$ 45.86	$ 49.64
Tier 3	≥ 44,000 - 87,000	$ 42.00	$ 48.30	$ 62.79	$ 64.90	$ 77.56	$ 82.83	$ 89.66
Tier 4	≥ 87,000	$ 71.00	$ 81.65	$ 106.15	$ 109.72	$ 131.12	$ 140.03	$ 151.57

STORM WATER UTILITY FEE
RATE SCHEDULE

RATE STRUCTURE CHANGE EFFECTIVE JANUARY 1, 2016
FEE BASED ON AREA OF IMPERVIOUS COVER

Description		Ordinance 2015-09-10-0761 Effective January 1, 2016 10% Increase	Ordinance 2016-09-29-0737 Effective October 1, 2016 7% Increase	Ordinance 2017-09-14-0656 Effective October 1, 2017 4.22% Increase	FY2019 Effective October 1, 2018 2% Increase	FY2020 Effective October 1, 2019 2.25% Increase
Residential						
Category	Impervious Area (sq. ft.)					
Tier 1	≤ 2,750	$ 3.22	$ 3.45	$ 3.60	$ 3.67	$ 3.75
Tier 2	> 2,750 - 4,220	$ 4.25	$ 4.55	$ 4.74	$ 4.83	$ 4.94
Tier 3	> 4,220	$ 8.98	$ 9.61	$ 10.02	$ 10.22	$ 10.45
Non-Residential						
	Base Fee	55.77	61.92	64.53	65.82	67.30
Category	Percent Impervious Area (%)		Impervious Fee ($ per 1,000 sq. ft. Impervious Area)			
Tier 1	≤ 20%	$ 0.25	$ 0.28	$ 0.29	$ 0.30	$ 0.31
Tier 2	> 20% - 40%	$ 0.37	$ 0.41	$ 0.43	$ 0.44	$ 0.45
Tier 3	> 60% - 65%	$ 0.50	$ 0.54	$ 0.56	$ 0.57	$ 0.58
Tier 4	> 65%	$ 0.62	$ 0.68	$ 0.71	$ 0.72	$ 0.74

Link to Matrix

ATTACHMENT IV (PL-12)

San Antonio Water System
Schedule 27 - Monthly Residential Service Charges for Ten Major Texas Cities - Water
Unaudited

CITY	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Arlington										
6000 Gallons	$25 50	$24 20	$24 20	$22.40	$21.12	$19.49	$19 49	$19.49	$19.47	$18 99
9000 Gallons	$33 87	$32 57	$32 57	$29 78	$27.96	$25.55	$25 55	$25.55	$25 53	$24 84
Austin										
6000 Gallons	$37 02	$38 35	$38 35	$37 37	$37.21	$29.74	$26 16	$26.16	$20.34	$19 18
9000 Gallons	$68 34	$70 30	$70 30	$66 88	$62 60	$51.74	$35 40	$35 40	$28 68	$27 04
Corpus Christi [1]										
6000 Gallons	$44 05	$42 37	$42 37	$34 76	$34.76	$32.25	$30 55	$28.97	$27 76	$25 54
9000 Gallons	$68 93	$66 29	$66 29	$55 78	$55.78	$51.79	$48 76	$45 67	$43 30	$39 10
Dallas										
6000 Gallons	$20 77	$21 69	$21 35	$20 86	$19.87	$19.39	$18 58	$17.62	$16.72	$16 16
9000 Gallons	$32 77	$34 71	$34 10	$33 25	$31.60	$30.70	$29 23	$27.67	$26 17	$25 16
El Paso [2]										
6000 Gallons	$27 19	$25.23	$23 82	$21.62	$17.84	$17.84	$17.01	$16 53	$16 53	$16.53
9000 Gallons	$35 82	$33.21	$31.28	$28.42	$24 10	$24.10	$22 99	$22 34	$22 34	$22.34
Ft. Worth										
6000 Gallons	$30 82	$29.39	$28.60	$26.62	$24 82	$23.32	$23.32	$22 33	$22.25	$21.75
9000 Gallons	$42 73	$41.14	$40 77	$38.49	$36 05	$34.55	$34.55	$33 08	$32 92	$32.42
Houston										
6000 Gallons	$34.46	$33.52	$32.42	$31.97	$30 62	$30.26	$27.78	$25 51	$23 65	$21.91
9000 Gallons	$50 42	$49.03	$47.42	$46.76	$44 78	$44.27	$40.62	$37 30	$34 60	$30.67
Lubbock										
6000 Gallons	$41 09	$44.56	$44.56	$45.18	$43.86	$45.00	$45 00	$40 02	$40 02	$34.02
9000 Gallons	$62 00	$58.84	$58 84	$63.72	$56 79	$57.00	$57 00	$48 03	$48 03	$43.99
Plano										
6000 Gallons	$29 48	$29.48	$25.98	$25.98	$25.41	$23.10	$22.55	$20 50	$20 50	$19.35
9000 Gallons	$40 07	$40.07	$35 28	$35.28	$33 72	$30.66	$29 18	$26 53	$26 53	$25.05
San Antonio (Standard) [2]										
6000 Gallons	$30 72	$28.65	$27 09	$23.50	$22.65	$21.54	$21.67	$19.59	$19 85	$22.11
9000 Gallons	$47 40	$44.37	$41 96	$34.43	$33 16	$31.37	$31 53	$28 44	$28 83	$30.40

Source: Based on rates posted on each respective city's website

Note - Most charges are for a 5/8" meter; Arlington, Lubbock, and Plano charges are for a 3/4" meter

[1] Includes Raw Water Pass Through Charge of $0 992 per 1,000 gallons

[2] Assumes Standard rates for all periods in 2015 and prior and includes Water Supply Fee in all periods

San Antonio Water System
Schedule 29 - Monthly Residential Service Charges for Ten Major Texas Cities - Wastewater
Unaudited

CITY	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Arlington										
6000 Gallons	$38 02	$34 98	$31 56	$31 10	$30 26	$28.03	$28.03	$27 37	$26.89	$25 97
9000 Gallons	$50 56	$47.52	$42 69	$42 20	$41 24	$38 02	$38.02	$37.03	$36 31	$35 03
Austin										
6000 Gallons	$60 66	$62 30	$62 30	$59 86	$55 84	$54.40	$54 30	$50 35	$48 77	$46 28
9000 Gallons	$90 93	$93 35	$93 95	$89.68	$83 23	$81 22	$81 06	$75 49	$73 22	$69 47
Corpus Christi										
6000 Gallons	$45 60	$60 79	$60 79	$52 23	$52 23	$46.96	$43 21	$43 21	$40 80	$35.95
9000 Gallons	$60 15	$80 86	$80 86	$69 48	$69 48	$62 71	$57 69	$57 69	$54 47	$48 01
Dallas										
6000 Gallons	$36 94	$37.06	$36 56	$35.78	$34 15	$33.80	$33 00	$31.70	$29 99	$29 33
9000 Gallons	$53 02	$53 20	$52 49	$51 38	$49 00	$48 50	$47 40	$45 50	$43.01	$42 11
El Paso										
6000 Gallons	$22 82	$21.14	$19 73	$17.79	$16 48	$16.48	$15 68	$15 22	$15 22	$15 22
9000 Gallons	$30 48	$28 23	$26 35	$23 77	$22 01	$22.01	$20 93	$20 31	$20 31	$20 31
Ft. Worth										
6000 Gallons	$38 10	$35 53	$34 49	$30 60	$27 96	$27.96	$26 84	$26 27	$26 27	$25.67
9000 Gallons	$53 90	$50.05	$48 49	$43 16	$39 39	$39.39	$37 70	$36 86	$36 86	$36 26
Houston										
6000 Gallons	$42 39	$41 23	$39 87	$39 31	$37 65	$37.20	$34 15	$31 38	$29 09	$24 84
9000 Gallons	$67 53	$65 68	$63 51	$62 62	$59 97	$59.25	$54 40	$49 98	$46 34	$36 69
Lubbock										
6000 Gallons	$38 26	$35 02	$35 02	$28 70	$27 50	$27 50	$27 50	$24 30	$24 30	$22 10
9000 Gallons	$49 39	$44 53	$44 53	$36 05	$34 25	$34.25	$34 25	$30 45	$30 45	$28 25
Plano										
6000 Gallons	$41 57	$41 57	$39 23	$37 40	$34 40	$33.54	$33 54	$33 54	$33 54	$33 54
9000 Gallons	$58 13	$58.13	$54 86	$52 31	$47 51	$46.32	$46 32	$46 32	$46 32	$46 32
San Antonio										
6000 Gallons	$30 78	$29 71	$28 13	$27.91	$26 24	$25.26	$21 70	$19 12	$19 10	$17 02
9000 Gallons	$43.72	$42.20	$39 96	$38 00	$35 73	$34 40	$29 54	$26 02	$26 00	$23 20

Source: Based on rates posted on each respective city's website

Link to Matrix

ATTACHMENT V (PL-13)

2019

2019 Gross Annual Income Eligibilty Table

Eligibilty is based on Household Family Size and Income at or below 125% Federal Assistance Guidline (updated 2-22-2019)

Affordability Program Discounts						
Family Size	Income at or below 25% Poverty *	Income at or below 50% Poverty *	Income at or below 75% Poverty *	Income at or below 100% Poverty *	Income at or below 125% Poverty *	Income above 125% Poverty *
1	$3,123	$6,245	$9,368	$12,490	**$15,613**	$15,614
2	$4,228	$8,455	$12,683	$16,910	**$21,138**	$21,139
3	$5,333	$10,665	$15,998	$21,330	**$26,663**	$26,664
4	$6,438	$12,875	$19,313	$25,750	**$32,188**	$32,189
5	$7,543	$15,085	$22,628	$30,170	**$37,713**	$37,714
6	$8,648	$17,295	$25,943	$34,590	**$43,238**	$43,239
7	$9,753	$19,505	$29,258	$39,010	**$48,763**	$48,764
8	$10,858	$21,715	$32,573	$43,430	**$54,288**	$54,289
9	$11,963	$23,925	$35,888	$47,850	**$59,813**	$59,814
10	$13,068	$26,135	$39,203	$52,270	**$65,338**	$65,339
11	$14,173	$28,345	$42,518	$56,690	**$70,863**	$70,864
12	$15,278	$30,555	$45,833	$61,110	**$76,388**	$76,389

2019 Discount is based on type of service	**A, K, R**	**B, L, S**	**C, M, T**	**D, N, U**	**Z**
Water and Sewer	**$25.75 (A)**	**$17.95 (B)**	**$11.55 (C)**	**$9.05 (D)**	**None**
Water only	**$11.25 (K)**	**$ 8.15 (L)**	**$5.30 (M)**	**$4.15 (N)**	**None**
Sewer only	**$14.50 (R)**	**$ 9.80 (S)**	**$6.25 (T)**	**$4.90 (U)**	**None**

* Poverty level figures based on U.S. Dept. of Health & Human Services 2019 guidelines.

2018

2018 Gross Annual Income Eligibility Table

Eligibility is based on Household Family Size and Income at or below 125% Federal Assistance Guidelines Updated 1/26/18

Affordability Program Discounts						
Family Size	Income at or below 25% Poverty *	Income at or below 50% Poverty *	Income at or below 75% Poverty *	Income at or below 100% Poverty *	Income at or below 125% Poverty *	Income above 125% Poverty *
1	$3,035	$6,070	$9,105	$12,140	**$15,175**	$15,176
2	$4,115	$8,230	$12,345	$16,460	**$20,575**	$20,576
3	$5,195	$10,390	$15,585	$20,780	**$25,975**	$25,976
4	$6,275	$12,550	$18,825	$25,100	**$31,375**	$31,376
5	$7,355	$14,710	$22,065	$29,420	**$36,775**	$36,776
6	$8,435	$16,870	$25,305	$33,740	**$42,175**	$42,176
7	$9,515	$19,030	$28,545	$38,060	**$47,575**	$47,576
8	$10,595	$21,190	$31,785	$42,380	**$52,975**	$52,976
9	$11,675	$23,350	$35,025	$46,700	**$58,375**	$58,376
10	$12,755	$25,510	$38,265	$51,020	**$63,775**	$63,776
11	$13,835	$27,670	$41,505	$55,340	**$69,175**	$69,176
12	$14,915	$29,830	$44,745	$59,660	**$74,575**	$74,576
13	$15,995	$31,990	$47,985	$63,980	**$79,975**	$79,976
14	$17,075	$34,150	$51,225	$68,300	**$85,375**	$85,376

2018 Discount is based on type of service	A, K, R	B, L, S	C, M, T	D, N, U	Z
Water and Sewer	$24.50 (A)	$17.00 (B)	$11.00 (C)	$8.72 (D)	None
Water only	$11.25 (K)	$8.00 (L)	$5.20 (M)	$4.10 (N)	None
Sewer only	$13.25 (R)	$9.00 (S)	$5.80 (T)	$4.62 (U)	None

* Poverty level figures based on U.S. Dept. of Health & Human Services 2018

2017

l Income Eligibility Table

Eligibility is based on Household Family Size and Income at or below 125% Federal Assistance Guidelines Updated 1/30/17

Family Size	Income at or below 25% Poverty *	Income at or below 50% Poverty *	Income at or below 75% Poverty *	Income at or below 100% Poverty *	Income at or below 125% Poverty *	Income above 125% Poverty *
	Affordability Program Discounts					
1	$3,015	$6,030	$9,045	$12,060	**$15,075**	$15,076
2	$4,060	$8,120	$12,180	$16,240	**$20,300**	$20,301
3	$5,105	$10,210	$15,315	$20,420	**$25,525**	$25,526
4	$6,150	$12,300	$18,450	$24,600	**$30,750**	$30,751
5	$7,195	$14,390	$21,585	$28,780	**$35,975**	$35,976
6	$8,240	$16,480	$24,720	$32,960	**$41,200**	$41,201
7	$9,285	$18,570	$27,855	$37,140	**$46,425**	$46,426
8	$10,330	$20,660	$30,990	$41,320	**$51,650**	$51,651
9	$11,375	$22,750	$34,125	$45,500	**$56,875**	$56,876
10	$12,420	$24,840	$37,260	$49,680	**$62,100**	$62,101
11	$13,465	$26,930	$40,395	$53,860	**$67,325**	$67,326
12	$14,510	$29,020	$43,530	$58,040	**$72,550**	$72,551
13	$15,555	$31,110	$46,665	$62,220	**$77,775**	$77,776
14	$16,600	$33,200	$49,800	$66,400	**$83,000**	$83,001

2017 Discount is based on type of service	**A, K**	**B, L**	**C, M**	**D, N**	**Z**
Water and Sewer	**$21.40 (A)**	**$14.30 (B)**	**$8.81 (C)**	**$6.99 (D)**	**None**
Water only	**$9.32 (K)**	**$6.26 (L)**	**$4.32 (M)**	**$3.73 (N)**	**None**

** Poverty level figures based on U.S. Dept. of Health & Human Services 2017 guidelines*

2016

2016 Gross Annual Income Eligibility Table

Eligibility is based on Household Family Size and Income at or below 125% Federal Assistance Guidelines Updated 2/4/16

Affordability Program Discounts						
Family Size	Income at or below 25% Poverty *	Income at or below 50% Poverty *	Income at or below 75% Poverty *	Income at or below 100% Poverty *	Income at or below 125% Poverty *	Income above 125% Poverty *
1	$2,970	$5,940	$8,910	$11,880	**$14,850**	$14,851
2	$4,005	$8,010	$12,015	$16,020	**$20,025**	$20,026
3	$5,040	$10,080	$15,120	$20,160	**$25,200**	$25,201
4	$6,075	$12,150	$18,225	$24,300	**$30,375**	$30,376
5	$7,110	$14,220	$21,330	$28,440	**$35,550**	$35,551
6	$8,145	$16,290	$24,435	$32,580	**$40,725**	$40,726
7	$9,183	$18,365	$27,548	$36,730	**$45,913**	$45,914
8	$10,223	$20,445	$30,668	$40,890	**$51,113**	$51,114
9	$11,263	$22,525	$33,788	$45,050	**$56,313**	$56,314
10	$12,303	$24,605	$36,908	$49,210	**$61,513**	$61,514
11	$13,343	$26,685	$40,028	$53,370	**$66,713**	$66,714
12	$14,383	$28,765	$43,148	$57,530	**$71,913**	$71,914
13	$15,423	$30,845	$46,268	$61,690	**$77,113**	$77,114
14	$16,463	$32,925	$49,388	$65,850	**$82,313**	$82,314
15	$17,503	$35,005	$52,508	$70,010	**$87,513**	$87,514

2016 Discount is based on type of service	**A, K, R**	**B, L, S**	**C, M, T**	**D, N, U**	**Z**
Water and Sewer	**$18.00 (A)**	**$12.60 (B)**	**$8.25 (C)**	**$6.55 (D)**	**None**
Water only	**$8.00 (K)**	**$5.61 (L)**	**$4.00 (M)**	**$3.73 (N)**	**None**
Sewer only	**$10.00 (R)**	**$7.00 (S)**	**$4.25 (T)**	**$3.63 (U)**	**None**

* Poverty level figures based on U.S. Dept. of Health & Human Services 2016 guidelines

2015

come Eligibility Table

Eligibility is based on Household Family Size and Income at or below 125% Federal Assistance Guidelines Updated 3/5/15

Affordability Program Discounts						
Family Size	Income at or below 25% Poverty *	Income at or below 50% Poverty *	Income at or below 75% Poverty *	Income at or below 100% Poverty *	Income at or below 125% Poverty *	Income above 125% Poverty *
1	$2,943	$5,885	$8,828	$11,770	**$14,712**	$14,713
2	$3,983	$7,965	$11,948	$15,930	**$19,912**	$19,913
3	$5,023	$10,455	$15,068	$20,090	**$25,112**	$25,113
4	$6,063	$12,125	$18,188	$24,250	**$30,312**	$30,313
5	$7,103	$14,205	$21,308	$28,410	**$35,512**	$35,513
6	$8,143	$16,285	$24,428	$32,570	**$40,712**	$40,713
7	$9,183	$18,365	$27,548	$36,730	**$45,912**	$45,913
8	$10,223	$20,445	$30,668	$40,890	**$51,112**	$51,113
9	$11,263	$22,525	$33,788	$45,050	**$56,312**	$56,313
10	$12,303	$24,605	$36,908	$49,210	**$61,512**	$61,513
11	$13,343	$26,685	$40,028	$53,370	**$66,712**	$66,713
12	$14,383	$28,765	$43,148	$57,530	**$71,912**	$71,913
13	$15,423	$30,845	$46,268	$61,690	**$77,112**	$77,113
14	$16,463	$32,925	$49,388	$65,850	**$82,312**	$82,313
15	$17,503	$35,005	$52,508	$70,010	**$87,512**	$87,513

2015 Discount is based on type of service	**A, K, R**	**B, L, S**	**C, M, T**	**D, N, U**	**Z**
Water and Sewer	**$14.35 (A)**	**$10.04 (B)**	**$7.18 (C)**	**$5.72 (D)**	**None**
Water only	**$7.40 (K)**	**$5.17 (L)**	**$3.84 (M)**	**$3.73 (N)**	**None**
Sewer only	**$6.95 (R)**	**$4.86 (S)**	**$3.75 (T)**	**$3.63 (U)**	**None**

* Poverty level figures based on U.S. Dept. of Health & Human Services 2015 guidelines

2014

2014 Federal Assistance Guidelines

Updated 2/28/14

Affordability Program Discounts						
Family Size	Income at or below 25% Poverty *	Income at or below 50% Poverty *	Income at or below 75% Poverty *	Income at or below 100% Poverty *	Income at or below 125% Poverty *	Income above 125% Poverty *
1	$2,918	$5,835	$8,753	$11,670	**$14,588**	$14,589
2	$3,933	$7,865	$11,798	$15,730	**$19,663**	$19,664
3	$4,948	$9,895	$14,843	$19,790	**$24,738**	$24,739
4	$5,963	$11,925	$17,888	$23,850	**$29,813**	$29,814
5	$6,978	$13,955	$20,933	$27,910	**$34,888**	$34,889
6	$7,993	$15,985	$23,978	$31,970	**$39,963**	$39,964
7	$9,008	$18,015	$27,023	$36,030	**$45,038**	$45,039
8	$10,023	$20,045	$30,068	$40,090	**$50,113**	$50,114
9	$11,038	$22,075	$33,113	$44,150	**$55,188**	$55,189
10	$12,053	$24,105	$36,158	$48,210	**$60,263**	$60,264
11	$13,068	$26,135	$39,203	$52,270	**$65,338**	$65,339
12	$14,083	$28,165	$42,248	$56,330	**$70,413**	$70,414
13	$15,098	$30,195	$45,293	$60,390	**$75,488**	$75,489
14	$16,113	$32,225	$48,338	$64,450	**$80,563**	$80,564
15	$17,128	$34,255	$51,383	$68,510	**$85,638**	$85,639

2014 Discount	A, K, R	B, L, S	C, M, T	D, N, U	Z
Water and Sewer	$13.63 (A)	$9.53 (B)	$6.82 (C)	$5.43 (D)	None
Water only	$7.11 (K)	$4.97 (L)	$3.84 (M)	$3.73 (N)	None
Sewer only	$6.53 (R)	$4.57 (S)	$3.75 (T)	$3.63 (U)	None

* Poverty level figures based on U.S. Dept. of Health & Human Services 2014 guidelines

2013

Affordability Program Discounts at 125% Federal Poverty Level Annual Household Income

Family Size	Income at or below 25% Poverty *	Income at or below 50% Poverty *	Income at or below 75% Poverty *	Income at or below 100% Poverty *	Income at or below 125% Poverty *	Over Income above 125% Poverty *
1	$2,873	$5,745	$8,618	$11,490	**$14,363**	$14,363
2	$3,878	$7,755	$11,633	$15,510	**$19,388**	$19,388
3	$4,883	$9,765	$14,648	$19,530	**$24,413**	$24,413
4	$5,888	$11,775	$17,663	$23,550	**$29,438**	$29,438
5	$6,893	$13,785	$20,678	$27,570	**$34,463**	$34,463
6	$7,898	$15,795	$23,693	$31,590	**$39,488**	$39,488
7	$8,903	$17,805	$26,708	$35,610	**$44,513**	$44,513
8	$9,908	$19,815	$29,723	$39,630	**$49,538**	$49,538
9	$10,913	$21,825	$32,738	$43,650	**$54,563**	$54,563
10	$11,918	$23,835	$35,753	$47,670	**$59,588**	$59,588
11	$12,923	$25,845	$38,768	$51,690	**$64,613**	$64,613
12	$13,928	$27,855	$41,783	$55,710	**$69,638**	$69,638
13	$14,933	$29,865	$44,798	$59,730	**$74,663**	$74,663
14	$15,938	$31,875	$47,813	$63,750	**$79,688**	$79,688
15	$16,943	$33,885	$50,828	$67,770	**$84,713**	$84,713

2013 Discount is based on the type of service provided	**A, K, R**	**B, L, S**	**C, M, T**	**D, N, U**	**Z**
Water and Sewer	$12.97 (A)	$9.07 (B)	$6.49 (C)	$5.17 (D)	None
Water only	$6.68 (K)	$4.67 (L)	$3.61 (M)	$3.50 (N)	None
Sewer only	$6.29 (R)	$4.40 (S)	$3.61 (T)	$3.50 (U)	None

2012
Federal Assistance Guidelines

Family Size	Income at or below 25% Poverty *	Income at or below 50% Poverty *	Income at or below 75% Poverty *	Income at or below 100% Poverty *	Income at or below 125% Poverty *	Income above 125% Poverty *
	Affordability Program Discounts					
1	$2,722	$5,445	$8,168	$10,890	$13,613	$13,614
2	$3,677	$7,355	$11,033	$14,710	$18,388	$18,389
3	$4,632	$9,265	$13,898	$18,530	$23,163	$23,164
4	$5,587	$11,175	$16,763	$22,350	$27,938	$27,939
5	$6,542	$13,085	$19,628	$26,170	$32,713	$32,714
6	$7,497	$14,995	$22,493	$29,990	$37,488	$37,489
7	$8,452	$16,905	$25,358	$33,810	$42,263	$42,264
8	$9,407	$18,815	$28,223	$37,630	$47,038	$47,039
9	$10,362	$20,725	$31,088	$41,450	$51,813	$51,814
10	$11,317	$22,635	$33,953	$45,270	$56,588	$56,589
11	$12,272	$24,545	$36,818	$49,090	$61,363	$61,364
12	$13,227	$26,455	$39,683	$52,910	$66,138	$66,139
13	$14,182	$28,365	$42,548	$56,730	$70,913	$70,914
14	$15,137	$30,275	$45,413	$60,550	$75,688	$75,689
15	$16,092	$32,185	$48,278	$64,370	$80,463	$80,464

2012 Discount	A, K, R	B, L, S	C, M, T	D, N, U	Z
Water and Sewer	$11.80 (A)	$8.25 (B)	$5.90 (C)	$4.70 (D)	None
Water only	$6.36 (K)	$4.44 (L)	$3.61 (M)	$3.50 (N)	None
Sewer only	$5.55 (R)	$4.23 (S)	$3.61 (T)	$3.50 (U)	None

* Poverty level figures based on U.S. Dept. of Health & Human Services 2011 guidelines

2011
Federal Assistance Guidelines

Family Size	Income at or below 25% Poverty *	Income at or below 50% Poverty *	Income at or below 75% Poverty *	Income at or below 100% Poverty *	Income at or below 125% Poverty *	Income above 125% Poverty *
		Affordability Program Discounts				
1	$2,722	$5,445	$8,168	$10,890	$13,613	$13,614
2	$3,677	$7,355	$11,033	$14,710	$18,388	$18,389
3	$4,632	$9,265	$13,898	$18,530	$23,163	$23,164
4	$5,587	$11,175	$16,763	$22,350	$27,938	$27,939
5	$6,542	$13,085	$19,628	$26,170	$32,713	$32,714
6	$7,497	$14,995	$22,493	$29,990	$37,488	$37,489
7	$8,452	$16,905	$25,358	$33,810	$42,263	$42,264
8	$9,407	$18,815	$28,223	$37,630	$47,038	$47,039
9	$10,362	$20,725	$31,088	$41,450	$51,813	$51,814
10	$11,317	$22,635	$33,953	$45,270	$56,588	$56,589
11	$12,272	$24,545	$36,818	$49,090	$61,363	$61,364
12	$13,227	$26,455	$39,683	$52,910	$66,138	$66,139
13	$14,182	$28,365	$42,548	$56,730	$70,913	$70,914
14	$15,137	$30,275	$45,413	$60,550	$75,688	$75,689
15	$16,092	$32,185	$48,278	$64,370	$80,463	$80,464

2011 Discount	A, K, R	B, L, S	C, M, T	D, N, U	Z
Water and Sewer	$9.30 (A)	$6.45 (B)	$4.23 (C)	$3.49 (D)	None
Water only	$5.55 (K)	$4.23 (L)	$3.59 (M)	$3.49 (N)	None
Sewer only	$5.55 (R)	$4.23 (S)	$3.59 (T)	$3.49 (U)	None

* Poverty level figures based on U S Dept of Health & Human Services 2011 guidelines

2009
Federal Assistance Guidelines

Affordability Program Discounts						
Family Size	Income at or below 25% Poverty *	Income at or below 50% Poverty *	Income at or below 75% Poverty *	Income at or below 100% Poverty *	Income at or below 125% Poverty *	Income above 125% Poverty *
1	$2,707	$5,415	$8,123	$10,830	$13,538	$13,539
2	$35,642	$7,285	$10,928	$14,570	$18,213	$18,214
3	$4,577	$9,155	$13,733	$18,310	$22,888	$22,889
4	$5,512	$11,025	$16,538	$22,050	$27,563	$27,564
5	$6,447	$12,895	$19,343	$25,790	$32,238	$32,239
6	$7,382	$14,765	$22,148	$29,530	$36,913	$36,914
7	$8,317	$16,635	$24,953	$33,270	$41,588	$41,589
8	$9,252	$18,505	$27,758	$37,010	$46,263	$46,264
9	$10,187	$20,375	$30,563	$40,750	$50,938	$50,939
10	$11,122	$22,245	$33,368	$44,490	$55,613	$55,614
11	$12,057	$24,115	$36,173	$48,230	$60,288	$60,289
12	$12,992	$25,985	$38,978	$51,970	$64,963	$64,964
13	$13,927	$27,855	$41,783	$55,710	$69,638	$69,639
14	$14,862	$29,725	$44,588	$59,450	$74,313	$74,314
15	$15,797	$31,595	$47,393	$63,190	$78,988	$78,989

2009 Discount	A, K, R	B, L, S	C, M, T	D, N, U	Z
Water and Sewer	$8.80 (A)	$6.10 (B)	$4.00 (C)	$3.30 (D)	None
Water only	$5.25 (K)	$4.00 (L)	$3.40 (M)	$3.30 (N)	None
Sewer only	$5.25 (R)	$4.00 (S)	$3.40 (T)	$3.30 (U)	None

* Poverty level figures based on U.S. Dept. of Health & Human Services 2009

Link to Matrix

ATTACHMENT VI (PL-14)

Response to Mr. Meza's water quality questions.

SAWS works with several departments and entities to ensure the highest water quality for our customers, including numerous checks and balances that ensure accurate and transparent data is available to the public and regulators.

The SAWS Resource Protection and Compliance Department (RPC) is responsible for regulatory sampling requirements for SAWS Public Water Systems. RPC is responsible for collecting at least 490 bacteriological samples per month, 5880 samples per year for the drinking water program. Samples are collected throughout the year and are spread throughout numerous locations in the system. A variety of analyses are performed either in the field, at the SAWS lab, or by third party contract laboratory. Besides the sampling performed by SAWS, the TCEQ hires a third-party sampler to take samples at all PWS wells, tanks and other infrastructure. Sampling occurs every quarter for all distribution and source points per TCEQ's schedule. Third party sampling is currently performed by TCEQ's contractor, Third Coast Environmental Services and sent to the Texas Department of Health for analysis. Every three years, TCEQ performs an extensive inspection of all of SAWS Production facility and a detailed review of all monitoring and testing that is required in what is called a Comprehensive Compliance Investigation.

As stated in the federal and state rules, SAWS must also comply with the Lead and Copper Rule. The purpose of this rule is to protect public health by minimizing lead and copper levels in drinking water for safe consumption, primarily by reducing water corrosivity. When a new water source or new treatment technique is added, testing is performed to ensure the changes do not impact the water source(s). In addition to customer sampling, SAWS staff collects approximately 125 samples a month from numerous SAWS water supply sources for this purpose. It is through this sampling that we look at various corrosivity indices for water to recommend operational adjustments to ensure that iron and other metals are not leached from the pipe. Indices were developed by third party consultants in the design phase, and as each water source was brought on line. For additional information regarding the lead and copper rule, visit www.epa.gov/dwreginfo/lead-and-copper-rule.

Over 90% of the samples are received and analyzed by the SAWS Environmental Laboratory Services (ELS) Department which is an accredited laboratory and performs over 200,000 analyses per year in support of both wastewater and potable water. The other 10% of samples are sent to the contract laboratory, Pace Analytical, which has laboratories all over the country. Samples sent to Pace are generally tests that are not performed by SAWS or when sample workload is such that ELS staff is not able to complete testing in a timely manner.

As a part of the accreditation process the state, Texas Commission on Environmental Quality (TCEQ) performs an audit of the SAWS laboratory every other year. In addition to the state audit, the laboratory is audited annually by a third-party contractor, Labtopia, Inc., who is responsible for ensuring the laboratory meets accreditation requirements. Attached are the Draft 2018 Laboratory Management Review Document and a list of tests performed. Additionally, the below websites may be of interest in answering questions regarding regulations that govern potable water.

Consumer Confident Report: https://www.saws.org/your-water/water-quality/

TCEQ regulations regarding Revised Total Coliform Rules, Lead/Copper Rule and Water Quality Parameter Rule: https://www.tceq.texas.gov/drinkingwater/pwss.html

Link to Matrix

SAN ANTONIO WATER SYSTEM
LIST OF ANALYSES PERFORMED

As of 10/10/2019

Matrix: Drinking water

- Aluminum
- Antimony
- Aresenic
- Barium
- Beryllium
- Boron
- Cadmium
- Calcium
- Chromium
- Cobalt
- Copper
- Iron
- Lead
- Lithium
- Magnesium
- Manganese
- Mercury
- Molybdenum
- Nickel
- Potassium
- Selenium
- Silica as SiO2
- Silver
- Sodium
- Strotium
- Thallium
- Uranium
- Vanadium
- Zinc
- Mercury
- Chloride
- Fluoride
- Nitrate
- Nitrite
- Sulfate
- Total Hardness
- Condivity
- Total Dissolve Solids
- Heterotrophic Place Count
- Total Coliforms
- Turbidity
- Esherichia Coli
- Alkalinity
- Volatiles
- Radiological
- Free Chlorine
- Temperature
- pH
- Halo-acetic Acids
- Semi-Volatiles/Pesticides

Matrix: Non-Potable Water (Wastewater, Industrial Waste, etc)

- Fats Oil and Grease
- Turbidity
- Aluminum
- Antimony
- Aresenic
- Barium
- Beryllium
- Boron
- Cadmium
- Chromium
- Cobalt
- Copper
- Iron
- Lead
- Lithium
- Magnesium
- Manganese
- Mercury
- Molybdenum
- Nickel
- Potassium
- Selenium
- Silica as SiO2
- Silver
- Sodium
- Strotium
- Thallium
- Uranium
- Vanadium
- Zinc
- Hexavalent Chromium
- Bromide
- Chloride
- Fluoride
- Nitrate
- Nitrite
- Sulfate
- Total Cyanide
- Ammonia
- Total Cyanide
- Total Organic Carbon
- Total Phenolics
- Volatiles
- Semi-Volatiles/Pesticides
- Esherichia Coli (enumeration)
- Chlorophyll A
- Alkalinity as CaCO3
- Total Hardness as CaCO3
- Conductivity
- Total Solids
- Total Dissovled Solids
- Total Suspended Solids
- Total Kjeldahl Nitrogen
- Phosphorus
- Biological Oxygen Demand
- Carbonaceous Oxygen Demand
- Chemical Oxygen Demand
- Heterotrophic Plate Count
- Biomonitoring
- Radiological
- Ammonia
- pH

DRAFT

Annual Management Review Report
San Antonio Water System
Environmental Laboratory Services Department
January 1 – December 31, 2018

2 Preface

3 Executive Summary

5 Operational Review

8 Performance

15 Appendix A: Value of Laboratory Services

16 Appendix B Workload by Client and Department

17 Appendix C: Training

Preface

In accordance with the requirements of the 2009 TNI Standard we are pleased to submit the Annual Laboratory Management Review for the year ended December 31, 2018. We believe that the information in the report is accurate and that all disclosures are necessary to enable the reader to gain an understanding of the Environmental Laboratory's operational status. The Environmental Laboratory Services (ELS) Department management review process is performed annually in order to determine the suitability and effectiveness of the laboratory's quality management system. The review serves to identify any changes required to meet the needs of clients, and any action needed to ensure the continuation of services provided by ELS. The review shall include executive management, clients and staff members.

Items that shall be discussed during the review include:

- Review of the laboratory quality policy statement.
- The suitability of policies and procedures.
- Reports from managerial and supervisory personnel.
- Resources and staffing levels.
- Changes in volume and type of work.
- The outcome of recent internal audits.
- Non-conformances and corrective/preventive actions.
- Assessment by external organizations.
- Results of proficiency test studies.
- Customer feedback.

Executive Summary

On February 13, 1992, the City council determined that it was in the best interest of the citizens of San Antonio (the City) and the customers served by the water and wastewater systems to consolidate all water systems, agencies and activities into one institution. The final City Council approval for such consolidation was given on April 30, 1992 with the approval of Ordinance No. 75686 which provided for the consolidation of all city owned utilities related to water, including the water, wastewater, and the water reuse systems, into the San Antonio Water System.

SAWS includes all water resources, properties, facilities, and plants owned, operated and maintained by the City relating to supply, storage, treatment, transmission, and distribution of treated potable water; collection and treatment of wastewater; and distribution of recycled water. Additionally, SAWS owns and operates five thermal energy facilities providing chilled water services to governmental and private entities. In 2018, SAWs provided potable water service to over 502,000 customer connections which represents nearly all of the water utility customers in Bexar County while providing wastewater services to more than 449,000 customer connections representing 93% of the wastewater customers in Bexar County not utilizing septic systems.

The management and control of SAWS has been vested in the San Antonio Water System Board of Trustees ("the Board). The Board consists of the Mayor (ex-Officio) and six trustees who are residents of the City of San Antonio or reside within the area serviced by SAWS. With the exception of the Mayor, all other trustees are appointed by the City Council for four-year staggered terms. The general operations of SAWS are under the supervision of the President/Chief Executive Officer who is employed by the Board.

The mission, vision and values of San Antonio *Water System are as follows:*

Mission
Sustainable Affordable Water Services

Vision
To be leaders in delivering responsible water services for life

Values
Excellence, Integrity and Respect

The operations of the Environmental Laboratory Services Department are critical for SAWS to accomplish its mission, vision and values. The mission of the ELS Department is to respond to the needs of SAWS operations by providing reliable, responsive, and accurate analytical services with a strong emphasis on data integrity. ELS maintains a broad scope of analytical expertise in order to provide full-service environmental testing for SAWS. This testing includes a variety of microbiological, inorganic, and organic chemical tests in support of water and wastewater services. The laboratory analyzes samples for monitoring compliance under several programs such as: Texas Pollutant Discharge Elimination System (TPDES) for wastewater, including pretreatment, industrial waste, and stormwater; Environmental Protection Agency (EPA) Part 503 Rule for biosolids, Ground Water Rule (GWR) for groundwater and Revised Total Coliform Rule (RTCR) and Lead and Copper Rule for drinking water. ELS performs analysis to monitor process control for the water recycling centers as well as for water quality research projects undertaken by other SAWS departments. The laboratory may, at the direction of senior management, provide analytical support for research projects sponsored by other organizations.

ELS was originally accredited by the Texas Commission on Environmental Quality (TCEQ) under the National Environmental Laboratory Accreditation Program (NELAP) in 2008 to perform total coliform analysis. In 2012, TCEQ performed a comprehensive audit on the SAWS Pretreatment Program identifying a deficiency that the laboratory was not accredited for the analyses required by the program. In March 2013, the laboratory expanded its accreditation to a total of 174 analyses in potable and non-potable water matrices to address this deficiency. The laboratory's current scope of accreditation stands at 194 analytes.

An annual review of lab services is conducted in order to meet the 2009 NELAC Institute Standard. It also periodically evaluates the continuing suitability and effectiveness of the laboratory management system and testing activities, and provides recommendations for improvement.

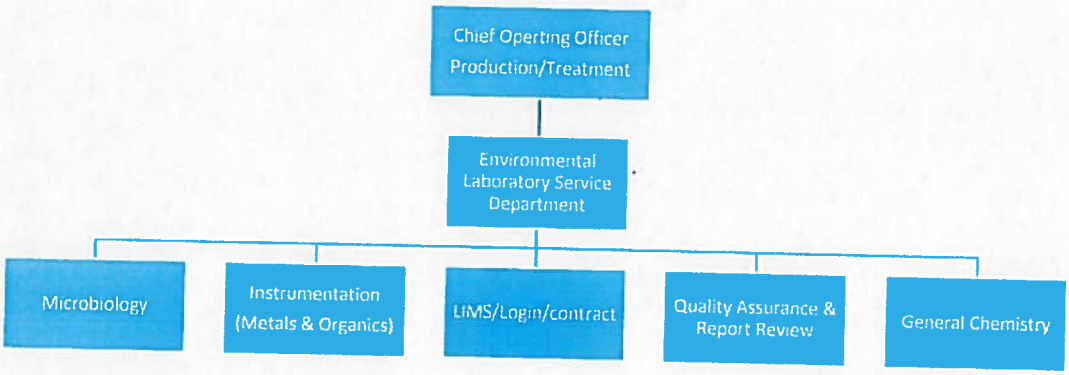
In meeting the standard, ELS is aligned with SAWS value statement of excellence, integrity and respect through continuous improvement and development of staff, processes and procedures used to generate analytical results, as outlined in this document. The laboratory is located at 3610 Valley Road; San Antonio, TX 78221 and measures approximately 15,000 square feet, with 9,000 square feet dedicated to analytical work.

Operational Review

Organization

The Environmental Laboratory Service (ELS) Department provides full-service environmental testing that is accredited by The NELAC Institute (TNI) body for various types of water and wastewater analyses.

ELS is structured with four sections: Login, General Chemistry, Microbiology, and Instrumentation. The Quality Assurance Officers oversees and manages the quality and defensibility of laboratory activities and data.



The three analytical Sections provide:

- Sample analysis to measure various constituents in water, wastewater, soils, and sludges, in support of the production, treatment, distribution and collection of the systems.
- Development and validation of sample preparation and testing methods
- Consult in special projects

The Log in Section provides support to the Analytical Sections by:

- Performing all tasks related to the receipt of samples
- Subcontracting of any work to other laboratories that is not performed by the ELS
- Distributing bottle sets to samplers for all projects.

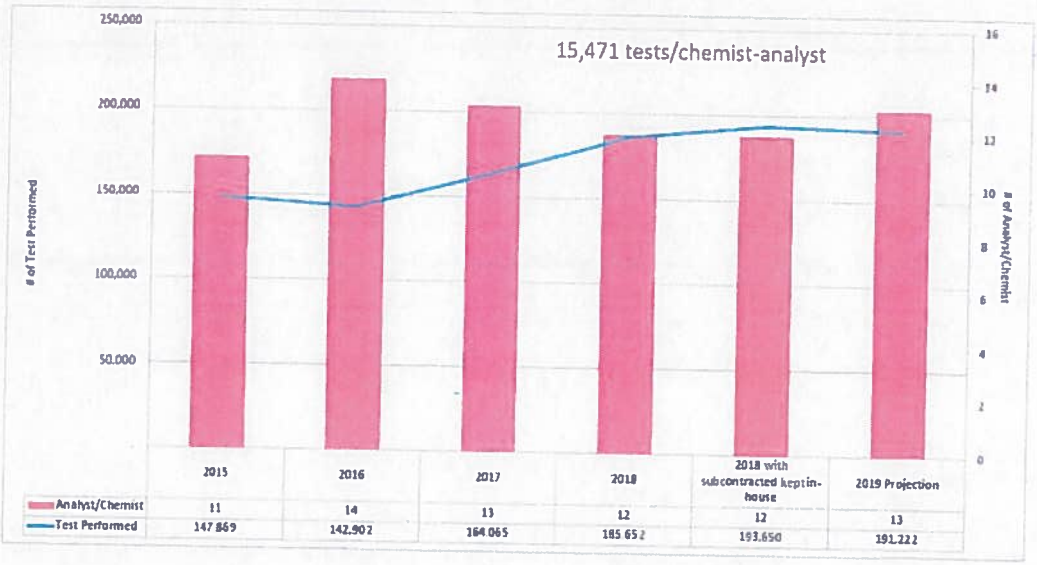
From January through December 2018 the laboratory received 32,548 samples and performed 185,652analyses. The major workload for ELS can be divided into the following areas:

- Wastewater analyses accounts for 56.8% of the overall laboratory workload.
- Water analyses accounts for 43.2% of the overall laboratory workload

Less than 6.6% of the CY 2018 laboratory budget covered analytical costs for work subcontracted to outside laboratories.

As of December 31, 2018, the total number of positions budgeted was 20 Full Time Equivalents (FTE) and 1 intern position. Of the 20 FTE positions, 14 positions were responsible for ensuring that analyses are received, logged in, and analyzed on a daily basis. This staff is responsible for effectively maintaining equipment, documenting information in the Laboratory Information Management System (LIMS), and ensuring that all analyses are

Staffing Performance



performed in accordance with quality assurance plan requirements. The remaining positions are assigned to the technical services team. The technical services team consists of management, quality control/quality assurance, data operations and statistics, and reporting administrative functions.

As the laboratory became fully staffed throughout 2018, the rate of test/analyst increased to 15,471. This increase was due to the copper/lead program and the implementation of the Vista Ridge project.

Instrumentation

Throughout 2018 instrumentation/equipment was added and/or replaced within the laboratory. The major replacement was that of the Analytik Jena Inductively Coupled Plasma Mass Spectrophotometer (ICPMS) with a Thermo-Fisher Scientific ICPMS. The ICPMS is primarily used to analyze metals in drinking water. In addition, the laboratory purchased a Metrohm auto-titrator, replaced a Type I water purification system, and replaced an air incubator. The auto-titrator will be used to perform pH, total hardness, alkalinity, and conductivity analyses.

Training

The work performed in the laboratory could not be accomplished without an effective training program. Currently the laboratory training program consists primarily of technical training on specific analytical methods and is provided in-house. Plans are in development to enhance the training program by creating a more comprehensive formal training curriculum. During 2018, staff received 1,161 training hours, down from 1,366 in 2017 (see appendix C).

To further enhance knowledge, skills and abilities, staff routinely participates in the following professional organizations:

- Alamo Laboratory Analysts' Chapter (ALAC)
- Association of Laboratory Managers (ALMA)
- The NELAC Institute (TNI)

Lab staff also attended the Environmental Trade Fair and the 2018 Public Drinking Water Conference sponsored by TCEQ, the quarterly TCEQ Drinking Water and Water Quality Advisory Work Group (DWAWG and WQAWG) meetings, TNI Assessor training and webinars for the Revised Total Coliform Rule and Lead and Copper Rule.

These organizations provide opportunities to network with professional peers from a variety of environmental laboratories and to stay abreast of current issues related to water and wastewater.

In addition, staff were provided with internal training for safety and professional development sessions related to communication, leadership and conflict management.

During 2018, tours were given to more than 150 visitors to the ELS. Visitors included students and instructors. The tours demonstrate the breadth of testing performed in the fields of microbiology, general chemistry, metals and organics. In addition, staff participates in Confluence, an education conference for local high school students, to inspire students who will be the next generation of scientists and technicians in laboratories such as ELS.

Performance

As part of monitoring activities within the laboratory and identifying areas of improvement, the following key performance indicators were monitored throughout the year:

- Quality
  - Corrective and Preventive Action Reports/Business Process Improvements
  - Standard Operating Procedures
  - Internal/External Audits
  - Proficiency Testing
- Customer Satisfaction
  - Survey

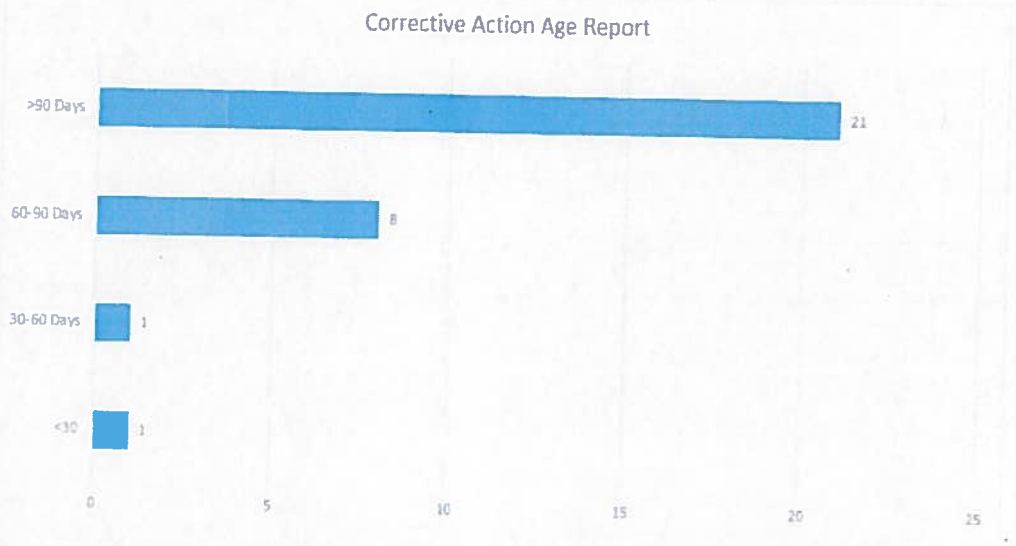
Quality

There are four main areas that are monitored within the quality assurance program: Corrective and Preventive Action Reports, Standard Operating Procedures, Internal/External Audits and Proficiency Testing.

Corrective/Preventive Action Reports

The 2009 TNI standard emphasizes the need to monitor the implementation of corrective and preventive actions and verify their effectiveness. In order to better fulfill this requirement, the laboratory enhanced its procedures for monitoring the timeliness and efficacy of corrective/preventive actions. Therefore, the laboratory tracks the number of days it takes from the time a CAR is opened until a corrective plan is approved, from approval to implementation and from implementation to verification of effectiveness, from which the overall closure rate can be calculated. The average time to close a Corrective Action Report (CAR) was 190 days. It takes an average of 36 days to complete the root cause analysis which is a key step within the process. The root cause analysis leads to the recommended corrective action plan (RCAP). After the RCAP is

approved, the next phase is implementation. The time required to implement recommended corrective actions is highly dependent on the magnitude of the problem. This step takes an average of 110 days, and thus accounts for over half of the total time required to complete a CAR. The time from implementation of the corrective action plan until its effectiveness can be verified is the shortest phase of the process, 46 days on average, but the time required for individual CARs varies significantly, depending on how frequently the relevant processes are performed and the complexity of the corrective action plan.



As part of its responsibilities as an accredited laboratory, SAWS ELS seeks to continuously improve its quality management system, business processes and customer service. The laboratory management team is asked to determine ways to provide cost-effective solutions, meet customer needs and adapt to increasing regulatory requirements and complexity of work (such as lower detection limit requirements). As each area has been addressed, the laboratory continued to identify and implement processes to achieve further effectiveness within that function. This process includes the preventive actions that laboratory staff have submitted for consideration.
Five preventive actions were implemented in 2018:

- Developed detailed technical instructions for preparing control cultures used in *E. coli* analysis.

- Demonstrated through comparison studies that one type of absorbent pad provided improved recovery of *E. coli* in the membrane filtration analytical method and implemented routine use of these absorbent pads.

- Replaced the bottle in which the matrix standard for Chemical Oxygen Demand analysis was stored with a dark bottle to decrease the photosensitivity of the chemical solution, thus improving its stability.

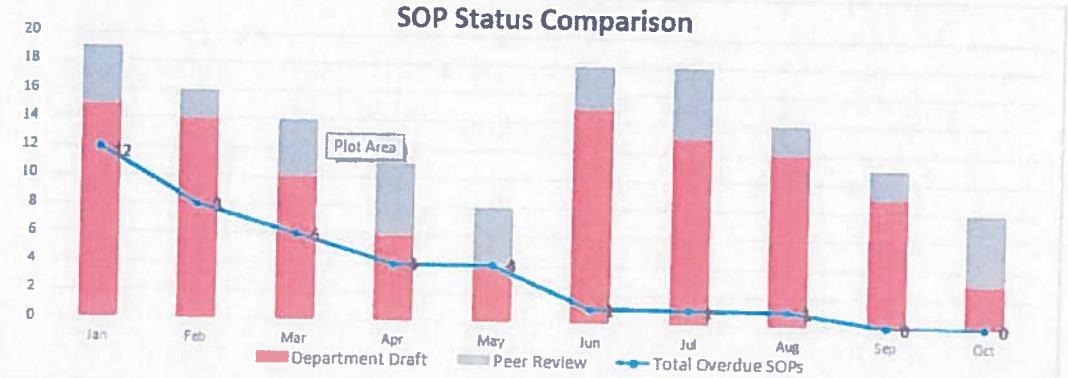
- Revised the SOP and benchsheet for oil and grease method to include documentation of the time pans are placed in and taken out of the desiccator as part of the analytical process. This serves to improve the traceability of the analytical steps as required by the accreditation standard.

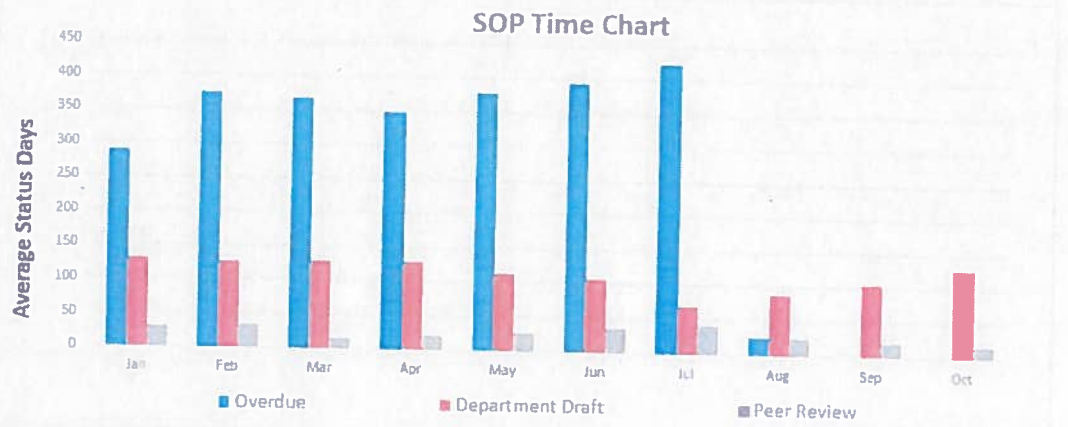
- Created a macro to improve the accuracy and efficiency of the data transfer process from the Ion Chromatograph software to the LIMS, by eliminating a manual entry process.

Standard Operating Procedures (SOPs)

Standard operating procedures are a combination of administrative and technical documents that the laboratory follows. During 2018, trend analysis was developed to assist in identifying bottlenecks in the process, and SOP status was reviewed during the monthly Key Performance Indicator (KPI) meetings. Based on these regular reviews, laboratory management could determine when staff members needed to be scheduled to work on updating procedures that were past due or scheduled for review and revision. As a result of this allocation of resources, 40 SOPs were revised in 2018, up from 26 in 2017, and the backlog of overdue SOPs was eliminated.

Figure 6





Internal/External Audits

The 2009 TNI accreditation standard requires the laboratory to perform internal audits. These audits must incorporate review of the analytical work being done as well as all other elements of the quality management system and assess compliance with the standard.

The consulting firm Labtopia, Inc. is under contract to provide audit services to the laboratory and performed an onsite assessment Nov. 5-8, 2018. There were eight individual findings, down from 13 in 2017, **none** of which were deemed by the assessor to be critical. A corrective action was issued for each finding to document the steps taken to correct the deficiency. Corrective action plans have been developed and approved for all of the findings; two of the CARs have been completed and closed out, three are pending verification of effectiveness, and three are in the process of being implemented. No external audit was performed in 2018.

Proficiency Testing Program

It is essential that accurate and precise results be reported by ELS for decision-making in support of SAWS operations. Tracking performance is one of the ways in which the lab evaluates and documents the quality of the data that is generated. To ensure the quality of reported data, ELS demonstrates the accuracy and precision of its analyses by performing required quality control tests with each batch of samples. In addition to the use of routine quality control measures, the laboratory participates in Performance Evaluation studies twice a year. Because the laboratory is accredited through the National Environmental Laboratory Accreditation Program administered by Texas Commission on Environmental Quality (TCEQ), it must meet the NELAP requirement to pass two of the last three single-blind, proficiency testing studies for each field of testing per year. Laboratories are considered proficient if the score is 80% or above. Over the past five years, ELS has achieved an average overall score of 96.1%. During CY 2018, the overall passing rate was 94.5 percent.

Department	Drinking Water			Wastewater			Soil		
	# Analytes	# Pass	%	# Analytes	# Pass	%	# Analytes	# Pass	%
Microbiology	42	42	100	12	12	100	N/A	N/A	N/A
General Chemistry	26	25	96.2	59	57	96.6	8	8	100
Metals	98	82	83.7	94	92	97.9	28	27	96.4
Organics	52	49	94.2	74	72	97.3	N/A	N/A	N/A

Table 1

Customer Satisfaction

ELS recognizes its role as a provider of analytical support for the successful operation of various groups within SAWS. As such, the lab has continued to make every effort to be proactive in determining customers' needs. Utilizing Survey Monkey again in 2018, the lab sent out the survey to all data users within SAWS.

In 2017 the laboratory introduced the Laboratory Promoter Score which is modeled after the Net Promoter Score. The purpose is to provide an overall score that measures the laboratory customer satisfaction from year to year and to identify areas where trending indicates the laboratory is either exceeding or lacking in a particular area with customers. The model was adapted to suit the laboratory environment due to a lack of a similar performance indicator as an industry standard. In 2017 the results of the overall scoring suggest that the laboratory is consistent in delivering accurate, sound data in the requested turn-around timeframe. The laboratory scores dipped below 80% in the areas of data being in a manageable format, a basic understanding if the laboratory adds value to their department, and if the laboratory's accreditation adds credibility to SAWS. However, the survey also shows that in 2017 there was a 50% decrease in participation than in previous years which is believed to be attributed to personnel changes, departures, or issues with the email messaging.

In 2018 there were only 4 customers who completed the survey which rendered the laboratory unable to calculate the LPS and compare data over the last 4 years. The following comments were made and these will be addressed throughout 2019:

- Technical assessment: The laboratory met and/or exceed expectations of the quality, scope of services, usefulness of report and analytical capabilities. However, 1 respondent with the following statement: Would like the LIMS (LIMSVIEWER) to be expanded so that all results for a particular company or report them all to the same spreadsheet rather than just one event at a time. Notification on when things like MDL or test methods change would also be helpful.
    - Response: Staff will work with I.S. to determine if the LIMS Viewer can be expanded to meet the needs of the customer. This will be a 2020 initiative. Staff will seek clarification regarding the MDLs and changes occurring during the login process. Test methods are generally dictated by the customer or regulations.

Laboratory management reviews and shares these results with lab staff, discusses these concerns with senior management and implements changes if deemed necessary

Challenges

The responsibilities of the laboratory expands outside of just receiving and testing analyses. This includes evaluating and purchasing equipment, complying with regulations, managing human resources, developing safety programs, resolving building

issues, and so on. Throughout 2018, the laboratory was faced with challenges related to the operations of the building, unexpected regulatory requirements and unplanned interruptions. Below outlines some of the challenges faced during 2018.

- Temperature fluctuations with the Biological Oxygen Demand Incubator room
- Replacement of both walk-in coolers
- Replacement of chillers
- Unplanned interruptions
- Implementation of Viacon Software System
- Replacement of chill water pumps.

Appendix A
Value of Laboratory Services
2018 Analytical Cost

Value of service provided to all clients (including expedited costs)	$4,001,504
Total Number of Tests Performed	185,652
Value of service to Water Recycling Centers (WRCs) – Process Control only	
Standard rates >6 Days	$160,714
Premium rates (2x) 3-6 Days	$495,258
Premium rates (3x) <=2 Days	$1,688,874
Total	**$2,344,846**
Total Number of Tests Performed for WRC's	75,279
Value of service for non-process control samples	$1,656,658
Total Number of Tests Performed for non-WRC	110373
Total Value of Analytical Services	$4,001,504
2018 Lab Expenses	$2,284,902
Savings	**$1,716,602**

Appendix B
Workload by Client and Department

CLIENT	Samples			Analyses*		
	2016	2017	2018	2016	2017	2018
ASR	457	326	169	3678	5240	3386
CONSTR_INSP	0	3	3	0	6	6
DOS_RIOS_WRC**	10,407	10,585	10,499	38,354	38,715	38,189
ENGINEERING	672	631	656	2059	1929	2344
LEON_CREEK_WRC**	3961	3884	3819	21,325	20,427	20,188
MEDIO_CREEK_WRC**	2688	3166	3870	13,562	13,681	16,113
RESOURCE_PROT_COMP	7947	8892	9781	44,726	64,921	80,493
SALADO_CREEK_WRC**	366	365	365	2404	2398	2400
SERVICE_CENTERS	342	325	677	1014	982	2682
TRT_TECH_SVCS	283	259	200	3251	2718	2213
WATER RESOURCES	44	44	23	2201	2192	1173
LAB QUALITY ASSURANCE (PT)	148	152	137	907	873	756
DISTRICT SPECIAL PROJECT	2520	2320	2332	9421	9940	14857
Misc.	0	1	17	0	43	852
	29,835	***30,953***	***32,548***	***142,902***	***164,065***	***185,652***

*Includes non-invoiceable analysis codes.

**Includes special project samples that are not part of process control

		2016	2017	2018	% change, 2016-2017	% change, 2017-2018
Samples		29,835	30,953	32,548	3.75%	5.15%
Analyses + QC		264,083	305,641	329,954	15.74%	7.95%
Total Analyses		142,902	164,065	185,652	14.81%	13.16%
	Chemistry	60,074	67,136	68,945	11.76%	2.69%
	Microbiology	59,099	56,298	65,388	-4.74%	16.14%
	Metals	17,690	32,470	41,134	83.55%	26.68%
	Organics	6,039	8,061	10,185	33.48%	26.35%
% Analyses		54.11%	53.68%	56.27%		
% QC		45.89%	46.32%	43.73%		

APPENDIX C
Training Data

Course Title	Date(s) Taken	Hours	Staff #	Total Hrs
Total Phosphorus, SM 4500-P B, F, New Analyst	Jan. 3- May 31, 2018	24.00	1	24.0
Anions by EPA Method 300.0, New Analyst	Jan. 9-Apr. 25, 2018	32.00	1	32.0
TKN, SM 4500 Norg B/4500 NH3 B,C, New Analyst	Jan.11-May 7, 2018	16.00	3	48.0
Quality Manual, Refresher and Updates	January 23, 2018	0.75	5	3.8
Data Entry and Verification, Refresher and Updates	Mar. 27-28, 2018	0.50	5	2.5
Records Management, Refresher and Updates	January 23, 2018	0.25	5	1.3
Laboratory Ethics and Data Integrity	Feb.1-21, 2018	1.00	20	20.0
Mercury by CVAA, EPA 245.1, Refresher and Updates	Feb. 12-Jun. 7, 2018	1.00	4	4.0
Specific Gravity, New Analyst	February 15, 2018	0.25	2	0.5
Data Integrity and Ethics Training (Labtopia)	February 16, 2018	2.00	3	6.0
Metals by ICP-MS, EPA 200.8, Refresher and Updates	February 21, 2018	0.50	2	1.0
Metals by ICP, EPA 200.7, Refresher and Updates	February 21, 2018	0.50	2	1.0
Conductivity SM 2510B, Benchsheet Update	Feb. 21-28, 2018	0.17	7	1.2
Sample Handling SOP, Refresher and Updates	Feb. 22-Mar. 1, 2018	1.00	17	17.0
Introduction to Labworks + Analysis Codes (Training Webcast 1)	February 27, 2018	1.00	2	2.0
ICP-MS Verification Sheet - Liquids, Updates	March 2, 2018	0.25	2	0.5
Calibration of Volumetric Dispensing Devices, New Analyst	March 6, 2018	8.00	1	8.0
Mercury by CVAA, EPA 245.1, New Analyst	Mar. 7-Dec. 13, 2018	24.00	2	48.0
pH SM 4500 H+B/SW846 9045D and Soluble Salts SW 846 9050A, Benchsheet Update	Mar. 13-20, 2018	0.25	5	1.3
Total and Bicarbonate Alkalinity, SM 2320B, New Analyst	Mar. 13-30, 2018	16.00	1	16.0
Total Hardness by Titration, SM 2340C, New Analyst	Mar. 13-Jun. 28, 2018	16.00	1	16.0
Total Phosphorus, SM 4500-P B, F, Refresher and Updates	Mar. 15-23, 2018	1.00	4	4.0
TKN, SM 4500 Norg B/4500 NH3 B,C, Refresher and Updates	Mar. 15-Apr. 12, 2018	1.00	8	8.0

Turbidity, EPA Method 180.1, Nephelometric, New Analyst	Mar. 20-Oct. 24, 2018	4.00	3	12.0
BOD/CBOD, SM 5210B, New Analyst	Mar. 20-Oct. 23, 2018	80.00	3	240.0
COD SM 5220D, New Analyst	Mar. 20-Oct. 22, 2018	16.00	3	48.0
Data Entry and Verification, Refresher and Updates	Mar. 27-28, 2018	0.50	4	2.0
Autoclave Operation, Refresher and Updates	March 28, 2018	0.50	1	0.5
Waste Accumulation Site Weekly Inspection	March 29, 2018	0.25	3	0.8
Hazardous Waste Tracking Form	Mar. 29-30, 2018	0.50	13	6.5
m-ColiBlue24 Counting Procedure, Refresher	March 30, 2018	0.50	1	0.5
Total Hardness by Titration, SM 2340C, Refresher and Updates	Apr. 6-17, 2018	1.00	4	4.0
pH, SM 4500-H+B, Refresher and Updates	Apr. 6-17, 2018	1.00	5	5.0
pH, SM 4500-H+B, New Analyst	April 11, 2018	4.00	1	4.0
Conductivity SM 2510B, New Analyst	Apr. 12-May 10, 2018	4.00	2	8.0
Total Cyanide, EPA Method 335.4, New Analyst	Apr. 12-Jun 15, 2018	24.00	1	24.0
Total Phenolics, EPA Method 420.1, Refresher and Updates	April 23, 2018	1.00	3	3.0
Hexavalent Chromium, SM21 3500-Cr B, New Analyst	Apr. 23-Sept. 13, 2018	16.00	1	16.0
Support Equipment, Refresher and Updates	Apr. 24-28, 2018	1.00	19	19.0
TCEQ Environmental Trade Fair	May 15-16, 2018	16.00	2	32.0
Ammonia, Gas Diffusion SFA, EPA 350.1, Refresher and Updates	May 15-21, 2018	1.00	9	9.0
Ion Chromatography Training	May 17, 2018	8.00	3	24.0
Colilert, Quanti-Tray, SM 9223B, Refresher and Updates	May 24-Jun. 5, 2018	0.50	14	7.0
Volatiles in Drinking Water, EPA 524.2, Refresher and Updates	June 6, 2018	0.50	2	1.0
Subcontracting, Refresher and Updates	June 7, 2018	0.25	3	0.8
Oil and Grease, EPA Method 1664A, New Analyst	Jun. 7-19, 2018	20.00	1	20.0
Ammonia, Titration, Post Distillation SM 4500NH3 B,C, Refresher and Updates	Jun. 11-14, 2018	0.50	11	5.5
Chemicals and Standards Traceability, Refresher and Updates	Jun. 12-20, 2018	1.00	19	19.0
Subsampling, Refresher and Updates	Jun. 12-22, 2018	0.50	17	8.5
Heterotrophic Plate Count, SM 9215B, New Analyst	Jun. 23-Dec. 18, 2018	16.00	3	48.0
Document Control, Refresher and Updates	Jun. 28-July 25, 2018	0.50	18	9.0

Fecal Coliform by Membrane Filtration, SM 9222D, New Analyst	Jul. 23-27, 2018	8.00	1	8.0
Volatiles in Wastewater, EPA 624, Refresher and Updates	July 27, 2018	0.50	1	0.5
BOD/CBOD, SM 5210B, Refresher and Updates	Aug. 2-6, 2018	0.50	9	4.5
Internal Audits and Management Review, Refresher and Updates	August 7, 2018	0.50	2	1.0
Data Validation, Refresher	August 7, 2018	0.75	10	7.5
Sample Handling SOP, Updates (for sample couriers only)	Aug. 6-8, 2018	0.25	4	1.0
TCEQ Laboratory Stakeholders Meeting	August 8, 2018	8.00	3	24.0
Total Phenolics, EPA Method 420.1, New Analyst	Aug. 7-9, 2018	16.00	1	16.0
Basic Assessor Training	Aug. 21-23, 2018	24.00	3	72.0
Total Coliform/E. Coli, SM 9223 (Colilert-24), New Analyst	Aug. 23-30, 2018	8.00	1	8.0
Total Coliform/E. Coli, SM 9223 (Colilert-18), New Analyst	Aug. 23-30, 2018	8.00	1	8.0
Total Coliform/E. Coli, SM 9223 (Colilert-24 and Colilert-18), Benchsheet Update	Aug. 30-Sept. 24, 2018	0.50	14	7.0
Oil and Grease, EPA Method 1664A, Refresher and Updates	September 4, 2018	0.50	3	1.5
Oil and Grease Verification Sheet, Updates	September 6, 2018	0.25	3	0.8
Total Cyanide, EPA Method 335.4, Refresher and Updates	Sept. 19-Oct. 25, 2018	0.50	4	2.0
Anions by EPA Method 300.0, Refresher and Updates	September 11, 2018	1.00	7	7.0
Purchasing SOP, Refresher and Updates	Sept. 12-18, 2018	0.50	15	7.5
Fecal Coliform by Membrane Filtration, SM 9222D, Refresher and Updates	September 13, 2018	0.50	2	1.0
Fecal Streptococcus by Membrane Filtration, SM 9230C, Refresher and Updates	September 13, 2018	0.50	2	1.0
E. coli by Hach m-ColiBlue24, Refresher and Updates	Sept. 13-28, 2018	0.50	15	7.5
Data Entry Into Labworks, Refresher	Sept. 18-19, 2018	0.50	11	5.5
Colilert, Quanti-Tray, SM 9223B, Refresher	Sept. 19-20, 2018	1.00	1	1.0
Quality Assurance Training - Regulations and Standards	September 25, 2018	1.00	17	17.0
Fecal Coliform Verification, Refresher and Updates	September 26, 2018	0.50	2	1.0
Ammonia, Gas Diffusion SFA, EPA 350.1, New Analyst	Oct. 1-4, 2018	32.00	1	32.0
Calibration of Volumetric Dispensing Devices, Refresher and Updates	October 3, 2018	0.50	4	2.0
Thermometer Calibration, Refresher and Updates	October 4, 2018	0.50	2	1.0
Total Coliform/E. Coli, SM 9223-97 (Colilert-24), Refresher and Updates	Oct. 16-30, 2018	0.50	15	7.5

Total Coliform/E. Coli, SM 9223-97 (Colilert-24), Refresher and Updates	Oct. 16-30, 2018	0.50	15	7.5
Oil and Grease, EPA Method 1664A, Returning Analyst	October 26, 2018	8.00	1	8.0
Heterotrophic Plate Count, SM 9215B, Refresher and Updates	October 30, 2018	0.50	5	2.5
Field Chlorine, Benchsheet Update	November 9, 2018	0.25	2	0.5
Colilert, Quanti-Tray, SM 9223B, New Analyst	Nov. 19-26, 2018	8.00	1	8.0
Stock Culture Maintenance, Refresher and Updates	December 18, 2018	1.00	1	1.0
BOD/CBOD, SM 5210B, Troubleshooting Blank Issues	December 20, 2018	0.50	10	5.0
COD SM 5220D, Refresher and Updates	December 20, 2018	0.25	10	2.5
Turbidity, EPA Method 180.1, Nephelometric, Refresher and Updates	December 20, 2018	0.25	10	2.5
Advanced Microsoft Word	December 27, 2018	7.00	4	28.0
			Grand Total 2018	**1161**

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Link to Matrix

ATTACHMENT VII (PL-16)

Response to Mr. Lara's Questions

1. **How are these cities charged and how are the individual meters checked for billing?**
   - Rates. Customer shall be charged the highest bill calculated based on the metered usage on the interconnect line of the Customer applied to the Water Rates of the System and the Water Rates of the Customer, and
   - Standby Charge. Customer shall be charged monthly for the ability of System to provide standby services at the System's meter fee rate on the interconnect meter. If water usage is metered for two consecutive months or for more than three months during a calendar year, then the System shall charge additional standby services of ten times the applicable meter fee rate or Monthly Service Availability Charge for each month of metered usage in the calendar year, and
   - Time and Material Charges. Customer shall be charged monthly for all time and material charges incurred to service the interconnect infrastructure. Such billing shall detail the reason for the charges in addition to the time and unit costs.
   - The meters will be turned on by SAWS staff at the time of activation as well as the entity staff will need to open receiving valves and check the entity's meter.

2. **Can an overview of the agreement and the actual system be briefed at some point?**

   There is only one active agreement in effect today:

   Country Bend (Southwest Water Company) Interconnect Agreement
   - Signed 03/30/2010 – 10 year contract
   - Either party can cancel at any time by providing prior written notice
   - SAWS can deny water if SAWS customers will be adversely impacted
   - All emergency interconnections are charged the interconnect water service rate
   - Use of interconnect is limited to conditions necessitated by mechanical failure and will be temporary
   - Each activation of interconnect cannot exceed 30 days unless granted by SAWS with written request
   - Interconnect water use is limited to domestic indoor use – no landscape watering
   - Interconnect cannot be used to supplement water shortages due to declining supply or unwillingness to find new supplies or build redundant infrastructure
     - If Country Bend can't meet customer demand, regular connection should be requested
     - Regular connection will require engineering study
     - Regular connection will require payment of impact fees

3. **Is there a tier system that regulates the pricing for high volume users?**
   - No. There is no outdoor usage permitted. Only emergency water permitted to sustain human life.
4. **Is there a tier system that regulates more frequent users of the interconnect agreement?**
   - No. Contractually you cannot be a frequent user. Frequent use would constitute a wholesale agreement. Each emergency interconnect activation is limited to 30 calendar days.

EMERGENCY INTERCONNECT AGREEMENT

This Emergency Interconnect Agreement (the "Agreement") is entered into on this 30th day of ~~January~~ March 2010 (the "Effective Date") by and between The San Antonio Water System ("SAWS") and SWWC Utilities, Inc., a Delaware corporation ("SWWC"), with respect to SAWS providing an emergency interconnect to SWWC under the following conditions:

1. The requesting purveyor agrees that SAWS has the obligation to first provide water service to its customers not located in the area to be served through the emergency interconnect. SAWS has the right to not sell water through the emergency interconnect if it has determined that first priority customers would be adversely impacted. The requesting purveyor understands and agrees that SAWS, in its sole discretion, may terminate the emergency interconnect at anytime and reject any future emergency interconnects.

2. All emergency interconnections shall be charged the interconnect water service rate and billed in accordance with City of San Antonio Ordinance # 101684 and as may be amended from time to time. Impact fees will not be charged by SAWS for an emergency interconnect.

3. Physical connections to the SAWS system for the emergency interconnect shall be funded entirely by the requesting purveyor. SAWS must approve the engineering plans and inspect the construction of the connection prior to activating the emergency interconnect.

4. Activation of the connection is temporary and shall be limited to conditions necessitated by mechanical failure.

    a. The emergency connection shall not be used as the mechanism to delay repairs or modifications to the requesting purveyors system.
    b. Activation of the connection shall be performed by SAWS staff.

5. Each activation of the emergency interconnect shall not exceed 30 days. If more than 30 days is needed to repair the mechanical failure with the system, the requesting purveyor shall submit a written request to SAWS. SAWS will then reassess the request to determine if adequate water supply is available for SAWS first priority customers and also for the emergency interconnect.

6. Water use by the requesting purveyor shall be limited to domestic indoor use – not for landscape watering.

7. The emergency interconnect is not intended to serve as a supplemental source due to declining water supply and cannot be used to avoid acquiring additional water supplies or to avoid building redundant infrastructure.

a. The emergency interconnect cannot be used to satisfy any redundancy or back-up infrastructure or water supply requirements, including, those that may be prescribed by TCEQ.
b. If the purveyor does not have an adequate water supply to meet customer demand, a regular connection should be requested.
c. A regular connection will require an engineering study to determine compatibility with the System's master plan, the availability of capacity and if additional facilities will be required.
d. A regular connection will require the payment of impact fees.

8. The term of this Agreement commences on the Effective Date and shall remain in full force and effect for a period of ten (10) years.

9. Either party may terminate this Agreement by providing prior written notice to the other with an immediate effective date.

IN WITNESS WHEREOF, SAWS and SWWC have duly executed this Agreement as of the Effective Date.

SWWC UTITLIES, INC.

By: _____
Name: David Stanton
Title: President

THE SAN ANTONIO WATER SYSTEM

By: _____
Name: Kelley Neumann
Title: Vice President

LB
11/17/05
Item# 3D

AN ORDINANCE 101684

AUTHORIZING THE ADDITION OF AN INTERCONNECT WATER SERVICE RATE TO CITY CODE OF SAN ANTONIO, TEXAS CHAPTER 34, TO BE CHARGED BY THE SAN ANTONIO WATER SYSTEM; AND AMENDING THE CITY CODE ACCORDINGLY.

* * * * *

WHEREAS, Ordinance No. 75686, authorized and approved by the City Council of the City of San Antonio, Texas ("City Council") on April 30, 1992, requires that the San Antonio Water System Board of Trustees (the "Board") determine the rates, fees and charges for services rendered by the San Antonio Water System ("SAWS"); and

WHEREAS, the Board had determined that the rates and charges for water customers are in need of revision to establish a Water Service Interconnect Rate; and

WHEREAS, such revisions will require amendments and additions to certain sections of and accompanying schedules to Chapter 34 of the San Antonio City Code, which must be approved by the City Council of the City of San Antonio; and

WHEREAS, if authorized, the Water Service Interconnect Rate will provide a charge for unscheduled potable water delivered to water purveyors or entities that connect to SAWS system on a temporary or short-term basis; and

WHEREAS, connection to the system and the application of the proposed rate are intended only for the time needed by the customer to resolve or mitigate the situation that caused the customer to request a connection; and

WHEREAS, water purveyors and entities outside of the SAWS system have and will continue to request connections to the system to receive potable water services on a short-term, unscheduled basis and the purveyors then resell the water provided by SAWS to their customers; and

WHEREAS, supplying water under the Water Service Interconnect Rate is not intended to be an indefinite source of water to the customer and, therefore, the rate is structured to provide short term temporary water service, yet encourage long term water service agreements which will help SAWS and the benefiting water purveyor to work together at providing the necessary water supply for the community in need; and

WHEREAS, customers who connect to the SAWS system under the Water Service Interconnect Rate shall pay for all services related to connecting into the infrastructure of the system, including capital and operational costs; and

LB
11/17/05
Item# 3D

WHEREAS, in addition to providing short term relief and encouraging long term relationships, the proposed rate will ensure that the water purveyors purchasing water under this rate schedule will not profit when reselling the water to their own customers; and

WHEREAS, it is in the best interest of the City for the City Council to approve and adopt such rates and charges in order to continue to maintain it covenants and obligations; **NOW THEREFORE:**

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF SAN ANTONIO:

SECTION 1. The Water Service Interconnect Rate set forth in Attachment I to this Ordinance is authorized and approved.

SECTION 2. The rate shall be effective for all SAWS billings on and after January 1, 2006.

SECTION 3. The City Code shall be amended in accordance with Attachment I to this Ordinance.

SECTION 4. This Ordinance shall be effective on and after the tenth day after passage.

PASSED AND APPROVED this 17th day of November, 2005.

M A Y O R
PHIL HARDBERGER

ATTEST: Leticia M. Vacek
City Clerk

APPROVED AS TO FORM: Jim Zestruche
for City Attorney

Attachment
I

ATTACHMENT I

AMENDMENTS TO CHAPTER 34 OF THE SAN ANTONIO CITY CODE

The City Code of the City of San Antonio Chapter 34, Water and Sewers, Article II, Water Service and Rates, Section 34-122, Rate Schedules, is hereby amended by adding the language that is underlined (added) as set forth herein.

Article II. Water Service and Rates

Section 34-122.4. Water Service Interconnect Rate

Section 34-122.4.01 Definitions

For the purpose of this chapter the following terms, phrases, words, and their derivations shall have the meaning in this section.

Customers. The application of the water service interconnect rate shall apply to customers or entities that request to interconnect into the System to receive water services on a temporary basis that: a) do not have a current contract for wholesale water service with the System at the point of service that is included in the request; and b) plan to resell the water provided by the System to its own customers. The System shall have the discretion to determine whether or not a particular request for temporary water service qualifies as either a wholesale water service request or a request for temporary water service under this temporary interconnection rate. In making such a determination, the System may consider whether or not the requirements for service included in the request are within the System's long-term capabilities and consistent with the System's master plan.

Water Rates of the System. The water rates shall be herein defined as those water rates and charges in effect for residential customers as defined under Chapter 34 Article II and amended from time to time. The water rates shall include but not be limited to the Water Supply Fee, all applicable water rates, and Edwards Aquifer Authority Fees.

Water Rates of the Customer. The water rates shall be herein defined as those water rates and charges in effect for residential customers of the Customer at the time of the billing of the water service interconnect rate by the System. The water rates shall include but not be limited to all applicable water rates, surcharges, and charges for the procurement of existing or additional water sources.

Section 34-122.4.02 Application of Water Service Interconnect Rate

a) *Billing of Customer.* The System shall bill Customer in accordance with the provisions in Chapter 34, Article II.

b) *Systems' Right to Sell Water.* System has an obligation to serve its customers who are not under the water service interconnect rate. System shall have the right not to sell to Customer in any event that it deems necessary to preserve the capacity to serve customers who are not under the water service interconnect rate. When possible, System shall

notify Customer in advance that it will not be able serve Customer under the interconnect arrangement for a designated time period.

c) *Required Documentation.* Customer shall provide to System on a monthly basis its monthly forecast for the next twelve-month time period of water usage needs required of the interconnection infrastructure. The forecast documentation is necessary for System to determine its ability to service Customer under the water service interconnect rate.

Customer shall also provide to System on a monthly basis its current rate schedules then in effect for its residential customers, including all applicable charges and fees that would be charged to its residential customers for that month. If billing to Customer is not according to the applicable rate schedules then in effect at time of billing, System reserves the right to bill Customer on the applicable rates for all usage that was applied to the incorrect rate schedules.

d) *System's Ability to Provide Standby Services.* System recognizes that the interconnect services are necessary to provide services that are on a standby basis and the rate should incorporate a provision for the standby service.

e) *Payment for the Interconnection Infrastructure.* Customer shall pay for all services related to connecting into the infrastructure of the System, to include capital and operations costs. Customer shall pay for the pipeline costs in advance of receiving water services from System. In the event System must incur operations costs to service the interconnect infrastructure, System shall bill Customer the current costs of time and materials.

f) *Assignment of Water under Water Service Interconnect Rate.* Water service provided to Customer through the interconnect line is intended for the use of the Customer on a temporary or emergency basis. Customer shall not assign the provisions of the water service to other water purveyors.

Section 34-122.4.03 Water Service Interconnect Rate

The Water Service Interconnect Rate is hereby established and is applicable to the use of potable water.

Customer shall be charged on a monthly basis for the preceding monthly metered usage based on the following calculations:

a) *Rates.* Customer shall be charged the highest bill calculated based on the metered usage on the interconnect line of the Customer applied to the Water Rates of the System and the Water Rates of the Customer, and

b) *Standby Charge.* Customer shall be charged monthly for the ability of System to provide standby services at the System's meter fee rate on the interconnect meter. If water usage is metered for two consecutive months or for more than three months during a calendar year, then the System shall charge additional standby services of ten times the applicable meter fee rate or Monthly Service Availability Charge for each month of metered usage in the calendar year, and

c) *Time and Material Charges.* Customer shall be charged monthly for all time and material charges incurred to service the interconnect infrastructure. Such billing shall detail the reason for the charges in addition to the time and unit costs.

Link to Matrix

ATTACHMENT VIII (PL-17)

Response to Mr. Smyle: (PL-17)

No, making recommendations concerning impact fees is beyond the legal scope of the RAC. The RAC is charged under the bylaws with making recommendations regarding the structures for water, sewer and recycled water rates. State law requires that a Capital Improvement Advisory Committee (CIAC) directly appointed by the City Council oversee the Impact Fee revision process.

The process of determining the maximum impact fee that can be charged is set forth in Chapter 395 of the Texas Local Government Code. The calculation of the maximum Water Supply impact fee is documented in the "*Water and Wastewater Facilities LUAP, CIP and Maximum Impact Fees*" (see Table 1.4.2 on page 9). The maximum fee was calculated by taking the cost associated with capacity available from existing water supplies and adding the cost associated with any additional capacity necessary from new projects (i.e. Vista Ridge) to meet the demands from growth during the next ten years (the period allowed by law.) The Vista Ridge water supply is expected to meet projected growth for much longer than just the next ten years. Approximately, two-thirds of the capacity provided by the Vista Ridge project will support growth beyond the next ten years.

As with any SAWS infrastructure project necessary to meet the demands of future growth, the cost associated to the capacity of that project that pertains to growth beyond the ten year impact fee study period is borne by all ratepayers. However, this excess capacity will be included in the calculation of future impact fees. SAWS updates its impact fees every five years as proscribed by law. These future updates will allocate Vista Ridge costs to the projected growth occurring during each successive ten year periods until the total capacity provided by the project is exhausted, thereby recovering additional portions of the Vista Ridge costs in years beyond this first ten year period.

The "Water and Wastewater Facilities LUAP, CIP and Maximum Impact Fees" report provides more details related to the impact fee calculations and can be found at:
https://apps.saws.org/business_center/developer/impactfees/docs/20190410/SAWS%202019%20W_WW%20Impact%20Fee%20Rpt_062019.pdf

SAWS staff is happy to meet with you outside the RAC meetings to further discuss the impact fee calculations.

Link to Matrix

ATTACHMENT IX (PL-25)

San Antonio Water System
SCHEDULE OF REVENUES AND THEIR DISPOSITION
COMPARED TO ANNUAL BUDGET
(amounts in thousands)
For the year ended December 31, 2018

	Actual	Annual Budget	Variance
SOURCES OF FUNDS			
OPERATING REVENUES			
Water delivery system	$ 218,399	$ 219,825	$ (1,426)
Water supply system	202,674	211,626	(8,952)
Wastewater system	259,124	253,440	5,684
Chilled water system	10,849	10,327	522
Total operating revenues	691,046	695,218	(4,172)
NONOPERATING REVENUES			
Interest earned and miscellaneous	21,411	11,350	10,061
Other financing sources (draw on equity)	1,400	1,400	-
Total nonoperating revenues	22,811	12,750	10,061
CAPITAL CONTRIBUTIONS			
Capital Recovery Fees	79,794	72,877	6,917
Contributions in Aid of Construction	6,435	-	6,435
Total capital contributions	86,229	72,877	13,352
TOTAL SOURCES OF FUNDS	$ 800,086	$ 780,845	$ 19,241
USES OF FUNDS			
OPERATION AND MAINTENANCE			
Salaries and fringe benefits	$ 157,375	$ 158,729	$ 1,354
Contractual services	171,031	181,534	10,503
Materials and supplies	23,485	23,538	53
Other charges	9,956	10,048	92
Less: Costs capitalized to Construction in Progress	(31,612)	(33,997)	(2,385)
Total operation and maintenance	330,235	339,852	9,617
OPERATING RESERVE REQUIREMENT	2,499	1,277	(1,222)
DEBT REQUIREMENTS			
Interest costs	113,105	134,630	21,525
Retirement of bonds	90,146	99,242	9,096
Other Debt Expense	1,957	2,363	406
Total debt requirements	205,208	236,235	31,027
TRANSFER TO THE CITY'S GENERAL FUND	18,287	18,103	(184)
AMOUNT AVAILABLE FOR TRANSFER TO THE RENEWAL AND REPLACEMENT FUND:			
CAPITAL CONTRIBUTIONS	86,229	74,002	(12,227)
GENERAL	157,628	111,376	(46,252)
Total amount available for Renewal and Replacement Funds	243,857	185,378	(58,479)
TOTAL USES OF FUNDS	$ 800,086	$ 780,845	$ (19,241)

The accompanying notes to the supplemental schedules is an integral part of this schedule.

San Antonio Water System
SCHEDULE OF REVENUES AND THEIR DISPOSITION COMPARED TO ANNUAL BUDGET
(amounts in thousands)
For the year ended December 31, 2017

	Actual	Annual Budget	Variance
SOURCES OF FUNDS			
OPERATING REVENUES			
Water delivery system	$ 202,264	$ 197,985	$ 4,279
Water supply system	202,143	200,427	1,716
Wastewater System	250,977	243,073	7,904
Chilled water and steam system	11,368	10,236	1,132
Total operating revenues	666,752	651,721	15,031
NONOPERATING REVENUES			
Interest earned and miscellaneous	10,407	8,035	2,372
Other financing sources (draw on equity)	1,541	4,850	(3,309)
Total nonoperating revenues	11,948	12,885	(937)
CAPITAL CONTRIBUTIONS			
Capital Recovery Fees	72,846	56,103	16,743
Contributions in Aid of Construction	7,925	-	7,925
Total capital contributions	80,771	56,103	24,668
TOTAL SOURCES OF FUNDS	$ 759,471	$ 720,709	$ 38,762
USES OF FUNDS			
OPERATION AND MAINTENANCE			
Salaries and fringe benefits	$ 149,874	$ 152,694	$ 2,820
Contractual services	168,350	175,566	7,216
Materials and supplies	23,159	24,417	1,258
Other charges	9,156	10,647	1,491
Less: Costs capitalized to Construction in Progress	(32,219)	(38,464)	(6,245)
Total operation and maintenance	318,320	324,860	6,540
OPERATING RESERVE REQUIREMENT	1,864	1,499	(365)
DEBT REQUIREMENTS			
Interest costs	109,359	125,925	16,566
Retirement of bonds	87,953	95,426	7,473
Other Debt Expense	2,697	2,701	4
Total debt requirements	200,009	224,052	24,043
TRANSFER TO THE CITY'S GENERAL FUND	17,276	16,847	(429)
AMOUNT AVAILABLE FOR TRANSFER TO THE RENEWAL AND REPLACEMENT FUND:			
CAPITAL CONTRIBUTIONS	80,771	56,103	(24,668)
GENERAL	141,231	97,348	(43,883)
Total amount available for Renewal and Replacement Funds	222,002	153,451	(68,551)
TOTAL USES OF FUNDS	$ 759,471	$ 720,709	$ (38,762)

The accompanying notes to the supplemental schedules is an integral part of this schedule.

San Antonio Water System
SCHEDULE OF REVENUES AND THEIR DISPOSITION COMPARED TO ANNUAL BUDGET
(amounts in thousands)
For the year ended December 31, 2016

	Actual	Annual Budget	Variance
SOURCES OF FUNDS			
OPERATING REVENUES			
Water delivery system	$ 190,913	$ 188,825	$ 2,088
Water supply system	185,037	186,670	(1,633)
Wastewater System	234,966	228,006	6,960
Chilled water and steam system	11,541	10,236	1,305
Total operating revenues	622,457	613,737	8,720
NONOPERATING REVENUES			
Interest earned and miscellaneous	8,146	5,613	2,533
Other financing sources (draw on equity)	1,400	1,400	-
Total nonoperating revenues	9,546	7,013	2,533
CAPITAL CONTRIBUTIONS			
Capital Recovery Fees	67,991	57,029	10,962
Grant Revenue	3,866	-	3,866
Total capital contributions	71,857	57,029	14,828
TOTAL SOURCES OF FUNDS	$ 703,860	$ 677,779	$ 26,081
USES OF FUNDS			
OPERATION AND MAINTENANCE			
Salaries and fringe benefits	$ 142,795	$ 147,992	$ 5,197
Contractual services	170,845	175,318	4,473
Materials and supplies	21,959	22,306	347
Other charges	12,269	10,311	(1,958)
Less: Costs capitalized to Construction in Progress	(32,629)	(42,251)	(9,622)
Total operation and maintenance	315,239	313,676	(1,563)
OPERATING RESERVE REQUIREMENT	519	2,837	2,318
DEBT REQUIREMENTS			
Interest costs	106,524	121,183	14,659
Retirement of bonds	84,784	87,007	2,223
Other Debt Expense	2,121	2,358	237
Total debt requirements	193,429	210,548	17,119
TRANSFER TO THE CITY'S GENERAL FUND	14,228	13,870	(358)
AMOUNT AVAILABLE FOR TRANSFER TO THE RENEWAL AND REPLACEMENT FUND:			
CAPITAL CONTRIBUTIONS	71,857	57,029	(14,828)
GENERAL	108,588	79,819	(28,769)
Total amount available for Renewal and Replacement Funds	180,445	136,848	(43,597)
TOTAL USES OF FUNDS	$ 703,860	$ 677,779	$ (26,081)

The accompanying notes to the supplemental schedules is an integral part of this schedule.

San Antonio Water System
SCHEDULE OF REVENUES AND THEIR DISPOSITION
COMPARED TO ANNUAL BUDGET
(amounts in thousands)
For the year ended December 31, 2015

	Actual	Annual Budget	Variance
SOURCES OF FUNDS			
OPERATING REVENUES			
Water delivery system	$ 123,895	$ 131,026	$ (7,131)
Water supply system	142,950	157,369	(14,419)
Wastewater System	213,833	221,024	(7,191)
Chilled water and steam system	11,102	10,236	866
Total operating revenues	491,780	519,655	(27,875)
NONOPERATING REVENUES			
Interest earned and miscellaneous	6,097	5,420	677
Other financing sources (draw on equity)	1,400	1,400	-
Total nonoperating revenues	7,497	6,820	677
CAPITAL CONTRIBUTIONS			
Capital Recovery Fees	56,153	46,403	9,750
Grant Revenue	-	-	-
Total capital contributions	56,153	46,403	9,750
TOTAL SOURCES OF FUNDS	$ 555,430	$ 572,878	$ (17,448)
USES OF FUNDS			
OPERATION AND MAINTENANCE			
Salaries and fringe benefits	$ 123,562	$ 126,751	$ 3,189
Contractual services	132,510	145,168	12,658
Materials and supplies	21,158	19,648	(1,510)
Other charges	7,243	10,382	3,139
Less: Costs capitalized to Construction in Progress	(32,843)	(36,165)	(3,322)
Total operation and maintenance	251,630	265,784	14,154
OPERATING RESERVE REQUIREMENT	912	1,893	981
DEBT REQUIREMENTS			
Interest costs	100,513	110,937	10,424
Retirement of bonds	72,399	74,833	2,434
Other Debt Expense	1,906	2,577	671
Total debt requirements	174,818	188,347	13,529
TRANSFER TO THE CITY'S GENERAL FUND	12,683	13,275	592
AMOUNT AVAILABLE FOR TRANSFER TO THE RENEWAL AND REPLACEMENT FUND:			
CAPITAL CONTRIBUTIONS	56,153	46,403	(9,750)
GENERAL	59,234	57,176	(2,058)
Total amount available for Renewal and Replacement Funds	115,387	103,579	(11,808)
TOTAL USES OF FUNDS	$ 555,430	$ 572,878	$ 17,448

The accompanying notes to the supplemental schedules is an integral part of this schedule.

San Antonio Water System - District Special Project
SCHEDULE OF SOURCES AND USES OF FUNDS
Twelve months ended December 2015

SOURCES OF FUNDS	Total System	Budget Current Allotments	Favorable (Unfavorable)	Variance
OPERATING REVENUES				
EAA/TCEQ Passthrough Fees	2,604,038	3,186,032	(581,994)	-18.27%
Metered Water - Water Delivery	41,958,512	44,472,376	(2,513,864)	-5.65%
Water Supply Fee	18,654,774	19,935,201	(1,280,427)	-6.42%
Miscellaneous Fees	2,662,670	2,796,231	(133,561)	-4.78%
Less: Uncollectible Accounts	(627,433)	(901,568)	274,135	30.41%
Total operating revenues	65,252,561	69,488,272	(4,235,711)	-6.10%
NON-OPERATING REVENUES				
Interest earned	78,480	105,000	(26,520)	-25.26%
Total non-operating revenues	78,480	105,000	(26,520)	-25.26%
CAPITAL CONTRIBUTIONS				
Capital Recovery and Service Extension Fees	7,903,323	5,250,000	2,653,323	50.54%
TOTAL SOURCES OF FUNDS	$ 73,234,364	$ 74,843,272	$ (1,608,908)	-2.15%
USES OF FUNDS				
OPERATION AND MAINTENANCE				
Salaries and fringe benefits	$ 16,614,193	$ 16,628,564	$ 14,371	0.09%
Contractual services	31,353,863	32,288,758	934,895	2.90%
Materials and supplies	2,331,757	2,557,502	225,745	8.83%
Other charges	258,122	441,877	183,755	41.59%
Capitalized cost	(5,670,534)	(5,447,262)	223,272	-4.10%
Total operation and maintenance	44,887,401	46,469,441	1,582,040	3.40%
OPERATING RESERVE REQUIREMENT	180,348	180,348	-	0.00%
DEBT REQUIREMENTS				
Revenue Bonds:				
Interest costs	7,862,855	8,186,301	323,446	3.95%
Retirement of bonds	7,022,652	7,104,992	82,340	1.16%
Flexible Rate Note interest	621,725	426,718	(195,007)	-45.70%
Other Debt Expense	64,116	85,569	21,453	25.07%
Total debt requirements	15,571,348	15,803,580	232,232	1.47%
AMOUNT AVAILABLE FOR R&R FUNDS:				
CAPITAL RECOVERY AND SERVICE EXT. FEES	7,903,323	5,250,000	2,653,323	50.54%
GENERAL	4,691,944	7,139,903	(2,447,959)	-34.29%
Total amount available for R&R Funds	12,595,267	12,389,903	205,364	1.66%
TOTAL USES OF FUNDS	$ 73,234,364	$ 74,843,272	$ (1,608,908)	-2.15%

San Antonio Water System
SCHEDULE OF REVENUES AND THEIR DISPOSITION
COMPARED TO ANNUAL BUDGET
(amounts in thousands)
For the year ended December 31, 2014

	Actual	Annual Budget	Variance
SOURCES OF FUNDS			
OPERATING REVENUES			
Water delivery system	$ 127,708	$ 129,299	$ (1,591)
Water supply system	150,079	151,421	(1,342)
Wastewater System	210,704	210,986	(282)
Chilled water and steam system	11,152	11,816	(664)
Total operating revenues	499,643	503,522	(3,879)
NONOPERATING REVENUES			
Interest earned and miscellaneous	5,793	5,377	416
Other financing sources (draw on equity)	1,400	1,400	-
Total nonoperating revenues	7,193	6,777	416
CAPITAL CONTRIBUTIONS			
Capital Recovery Fees	51,973	36,000	15,973
Grant Revenue	60	-	60
Total capital contributions	52,033	36,000	16,033
TOTAL SOURCES OF FUNDS	$ 558,869	$ 546,299	$ 12,570
USES OF FUNDS			
OPERATION AND MAINTENANCE			
Salaries and fringe benefits	$ 117,522	$ 126,805	$ 9,283
Contractual services	127,685	135,437	7,752
Materials and supplies	20,930	19,427	(1,503)
Other charges	12,269	11,073	(1,196)
Less: Costs capitalized to Construction in Progress	(31,387)	(32,429)	(1,042)
Total operation and maintenance	247,019	260,313	13,294
OPERATING RESERVE REQUIREMENT	2,729	952	(1,777)
DEBT REQUIREMENTS			
Interest costs	99,661	112,410	12,749
Retirement of bonds	68,142	67,589	(553)
Other Debt Expense	2,725	2,501	(224)
Total debt requirements	170,528	182,500	11,972
TRANSFER TO THE CITY'S GENERAL FUND	13,089	12,927	(162)
AMOUNT AVAILABLE FOR TRANSFER TO THE RENEWAL AND REPLACEMENT FUND:			
CAPITAL CONTRIBUTIONS	52,033	36,000	(16,033)
GENERAL	73,471	53,607	(19,864)
Total amount available for Renewal and Replacement Funds	125,504	89,607	(35,897)
TOTAL USES OF FUNDS	$ 558,869	$ 546,299	$ (12,570)

The accompanying notes to the supplemental schedules is an integral part of this schedule.

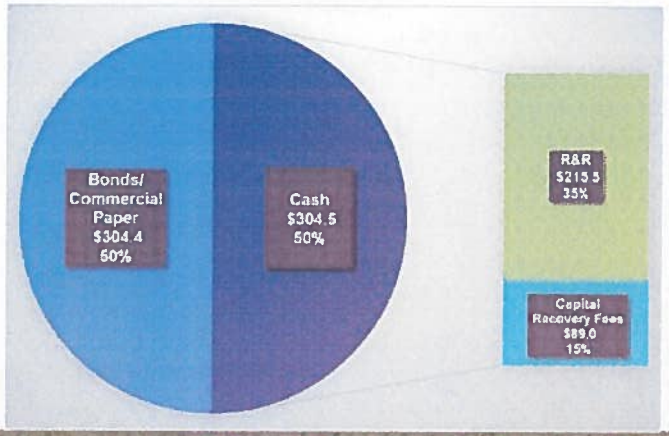
Link to Matrix

San Antonio Water System - District Special Project
SCHEDULE OF SOURCES AND USES OF FUNDS
Twelve months ended December 2014

SOURCES OF FUNDS	Total System	Budget: Current Allotments	Budget: Favorable (Unfavorable)	Variance
OPERATING REVENUES				
EAA/TCEQ Passthrough Fees	3,098,900	3,202,500	(103,600)	-3.23%
Metered Water - Water Delivery	43,804,113	44,927,475	(1,123,362)	-2.50%
Water Supply Fee	19,451,215	20,308,884	(857,669)	-4.22%
Miscellaneous Fees	2,901,391	3,439,076	(537,685)	-15.63%
Less: Uncollectible Accounts	(592,296)	(918,468)	326,172	35.51%
Total operating revenues	68,663,323	70,959,467	(2,296,144)	-3.24%
NON-OPERATING REVENUES				
Interest earned	61,591	162,500	(100,909)	-62.10%
Total non-operating revenues	61,591	162,500	(100,909)	-62.10%
CAPITAL CONTRIBUTIONS				
Capital Recovery and Service Extension Fees	6,471,705	2,584,010	3,887,695	150.45%
TOTAL SOURCES OF FUNDS	$ 75,196,619	$ 73,705,978	$ 1,490,641	2.02%
USES OF FUNDS				
OPERATION AND MAINTENANCE				
Salaries and fringe benefits	$ 15,209,604	$ 17,034,543	$ 1,824,939	10.71%
Contractual services	35,515,751	33,053,351	(2,462,400)	-7.45%
Materials and supplies	2,701,548	2,779,783	78,235	2.81%
Other charges	522,484	499,239	(23,245)	-4.66%
Capitalized cost	(4,947,070)	(4,966,337)	(19,267)	0.39%
Total operation and maintenance	49,002,317	48,400,578	(601,739)	-1.24%
OPERATING RESERVE REQUIREMENT	150,715	150,715	-	0.00%
DEBT REQUIREMENTS				
Revenue Bonds:				
Interest costs	8,126,224	8,126,223	(1)	0.00%
Retirement of bonds	6,723,334	6,723,334	-	0.00%
Flexible Rate Note interest	501,047	965,997	464,950	48.13%
Other Debt Expense	82,172	85,569	3,397	3.97%
Total debt requirements	15,432,777	15,901,123	468,346	2.95%
AMOUNT AVAILABLE FOR R&R FUNDS:				
CAPITAL RECOVERY AND SERVICE EXT. FEES	6,471,705	2,584,010	3,887,695	150.45%
GENERAL	4,139,105	6,669,550	(2,530,446)	-37.94%
Total amount available for R&R Funds	10,610,810	9,253,561	1,357,249	14.67%
TOTAL USES OF FUNDS	$ 75,196,619	$ 73,705,978	$ 1,490,641	2.02%

ATTACHMENT X (PL-39)

2020 Capital Improvement Program Funding



2020 Revenue Requirements

San Antonio Water System

CAPITAL IMPROVEMENT PROGRAM
2020 SOURCES OF FUNDS BY CORE BUSINESS

($ in millions)	Water Supply	Water Delivery	Wastewater	Chilled Water	Total
Sources of Funds					
Cash - R&R	$ 71.1	$ 60.8	$ 83.6	$ -	$ 215.5
Cash - Capital Recovery Fees	29.0	30.0	30.0	-	89.0
Bonds/Commercial Paper	-	4.0	299.1	1.3	304.4
Total Sources of Funds	**$ 100.1**	**$ 94.8**	**$ 412.7**	**$ 1.3**	**$ 608.9**

Link to Matrix

ATTACHMENT XI (PL-40)

SAWS Services to Other Municipalities

	Water Service			*Sewer Service*			
Municipality	**Description**	**Agreement Date**	**ICL or OCL SAWS Rates**	**Description**	**Agreement Date**	**SAWS Wholesale Sewer Customer?**	**ICL or OCL SAWS Rates**
Balcones Heights	Water Franchise Agreement	10/4/1972	ICL	Balcones Heights Sewer Service		Yes	
Castle Hills	Retail Water		OCL	Sewer Franchise Agreement	9/8/1998	No	ICL
China Grove	Water Franchise Agreement	9/9/1969	OCL	No Sewer Service		No	
Converse	Retail Water		OCL	SARA Sewer Service		No	
Hollywood Park	Retail Water		OCL	Hollywood Park Sewer Service		Yes	
Helotes	Water & Sewer Franchise Agreement	9/29/2000	ICL	Water & Sewer Franchise Agreement	9/29/2000	No	ICL
Hill Country Village	Retail Water		OCL	Hill Country Village Sewer Service		Yes	
Leon Valley	Water Franchise Agreement	3/25/1999	ICL	Leon Valley Sewer Service		Yes	
Live Oak	Water Franchise Agreement	1/11/1979	ICL	CCMA Sewer Service		No	
Olmos Park	Water Franchise Agreement	5/15/1969	ICL	Olmos Park Sewer Service		Yes	
Shavano Park	Water Franchise Agreement	10/28/1999	ICL	SAWS Retail Sewer		No	ICL
Somerset	Retail Water		OCL	Somerset Sewer Service		No	
Terrell Hills	Retail Water		ICL	Sewer Franchise Agreement	6/11/2008	No	ICL
Windcrest	Water & Sewer Franchise Agreement	5/5/2009	ICL	Water & Sewer Franchise Agreement	5/5/2009	No	ICL

Link Matrix

ATTACHMENT XII (PL-42)

Mr. Smyle,

Please find a short description and explanation of the reports below. Please let us know if you have any questions or comments.

Excel Reports*

Code	Service Type	Poverty Level
A	Water and Sewer	50%
B	Water and Sewer	75%
C	Water and Sewer	100%
D	Water and Sewer	125%
K	Water Only	50%
L	Water Only	75%
M	Water Only	100%
N	Water Only	125%
R	Sewer Only	50%
S	Sewer Only	75%
T	Sewer Only	100%
U	Sewer Only	125%
*Z***	N/A	*Customers are no longer in the program*

*Discount codes listed on all summaries are current values. The 2018 discount code values are no longer available. All monthly totals are based on the bill month associated with each bill.
**Customers with code "Z" were active in the discount program in 2018 but are no longer in the program.

Maps

There are 29,235 points on these maps which denote the 29,235 Affordability customers that received discounts as of December 2018. Below is a short description of what each map is showing:

Map#1 – Counts, by zip code, of Affordability customers

- The shading denotes the ADP customer count in that zip code. The darker the shading denotes more customers received the discount in that zip code.

Map#2 – Map of all affordability customers by their geographic location across the SAWS service area

Map#3 – An example of a specific zip code to show the detail of higher concentration areas of affordability customers.

*The mapping software used will not allow the viewer to zoom in to gain additional detail, however, additional maps are available if you are interested in a particular geographic location or detail level.

General Class Meters by Meter Size
December 2019

Meter Size (Inches)	Number of Meters
0.625	10,887
0.75	1,615
1	4,706
1.5	4,718
2	4,590
3	1,108
4	774
6	397
8	108
10	22
TOTAL	**28,925**

2018 General Class Usage by Decile Summary

Cumulative Usage Band	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	% of Total
General Class Total											
Billed Usage (million gallons)											
Multi-Family	-	800	2,488	4,257	5,851	7,124	7,955	8,541	8,885	9,308	38.5%
Industrial	1,540	2,146	2,288	2,382	2,418	2,444	2,467	2,487	2,497	2,503	10.4%
Commerical/Municipal	871	1,875	2,465	3,033	3,819	4,944	6,510	8,323	10,388	12,365	51.1%
Total Cummulative Usage	2,411	4,820	7,242	9,672	12,088	14,512	16,932	19,351	21,769	24,176	100.0%
Number Accounts											
Multi-Family	-	33	141	294	485	718	966	1,282	1,730	4,584	15.4%
Industrial	16	36	45	53	57	62	69	80	93	147	0.5%
Commerical/Municipal	9	42	81	130	228	445	929	1,944	4,691	25,016	84.1%
Total Accumulated Accounts	25	111	267	477	770	1,225	1,964	3,306	6,514	29,747	100.0%
Cumulative % of Customers	0.1%	0.4%	0.9%	1.6%	2.6%	4.1%	6.6%	11.1%	21.9%	100.0%	
Average Monthly Usage per Decile (million gallons)	8.04	2.33	1.29	0.96	0.69	0.44	0.27	0.15	0.06	0.01	
Multi-Family only											
Billed Usage (million gallons)	932	1,857	2,785	3,722	4,659	5,587	6,518	7,449	8,381	9,308	
Number Accounts	39	95	163	242	335	447	593	800	1,171	4,584	
Cumulative % of Customers	0.9%	2.1%	3.6%	5.3%	7.3%	9.8%	12.9%	17.5%	25.5%	100.0%	
Average Monthly Usage per Decile (million gallons)	1.99	1.38	1.14	0.99	0.84	0.69	0.53	0.37	0.21	0.02	
General Class, excluding Multi-family											
Billed Usage (million gallons)	1,401	2,951	4,462	5,947	7,438	8,928	10,415	11,902	13,388	14,868	
Number Accounts	10	38	105	244	518	979	1,735	3,125	6,122	25,163	
Cumulative % of Customers	0.0%	0.2%	0.4%	1.0%	2.1%	3.9%	6.9%	12.4%	24.3%	100.0%	
Average Monthly Usage per Decile (million gallons)	11.68	4.61	1.88	0.89	0.45	0.27	0.16	0.09	0.04	0.01	

Affordability Discount Program Bills by Block*									
2018	**Block 1**	**Block 2**	**Block 3**	**Block 4**	**Block 5**	**Block 6**	**Block 7**	**Block 8**	**Total**
JAN	7,630	4,721	4,213	3,113	3,469	1,606	390	149	**25,291**
FEB	8,791	5,082	4,240	2,935	2,844	1,202	266	100	**25,460**
MAR	8,677	5,127	4,332	2,948	2,894	1,188	227	90	**25,483**
APR	8,030	5,115	4,426	3,194	3,094	1,318	260	94	**25,531**
MAY	7,674	5,052	4,401	3,304	3,704	1,642	378	133	**26,288**
JUN	6,302	4,541	4,275	3,652	4,449	2,449	693	242	**26,603**
JUL	6,356	4,512	4,386	3,536	4,498	2,563	649	272	**26,772**
AUG	6,846	4,728	4,499	3,682	4,339	2,328	606	247	**27,275**
SEP	6,885	4,904	4,622	3,687	4,477	2,458	637	259	**27,929**
OCT	9,309	5,548	4,519	3,244	3,376	1,545	349	141	**28,031**
NOV	9,642	5,522	4,177	2,777	2,706	1,179	251	111	**26,365**
DEC	9,684	5,747	4,782	3,444	3,419	1,631	364	164	**29,235**

*These are the number of affodability customers' bills that ended in each block.

Affordability Bill Count by Discount Code	
Discount Codes	**December 2018**
A	7,605
B	6,490
C	7,537
D	6,079
K	329
L	279
M	334
N	243
Z	339
Grand Total	**29,235**

	2018 Affordability Discount Program Average Consumption By Bill Month (in gallons)												
	Month	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Discount Codes	**A**	6,299	5,733	5,715	5,948	6,238	7,093	7,051	6,841	6,906	6,019	5,603	5,966
	B	5,801	5,268	5,241	5,455	5,790	6,524	6,573	6,368	6,417	5,408	5,012	5,444
	C	5,154	4,740	4,712	4,927	5,264	6,011	6,146	5,884	5,898	4,953	4,622	4,981
	D	5,110	4,614	4,601	4,811	5,137	5,896	5,970	5,879	5,842	4,847	4,474	4,867
	K	7,177	5,597	5,672	5,484	6,037	7,377	6,960	7,025	6,938	5,881	5,976	6,430
	L	5,867	5,675	5,377	5,159	5,847	7,662	6,420	6,256	6,557	4,981	4,957	5,650
	M	6,055	4,999	5,483	5,130	5,630	7,191	6,734	6,213	6,605	5,254	4,997	5,502
	N	5,197	4,449	4,488	4,693	4,996	6,261	5,907	5,857	5,876	4,659	4,725	4,747
	T	3,740	4,489	2,992									
	Z	7,445	6,643	6,607	7,102	7,161	7,772	7,637	6,896	7,390	6,688	5,996	6,552

*There was one customer with discount code "T" in 2018 and that account was closed in April 2018.

2018 Affordability Discount Program Average Bill By Bill Month

Discount Code	Average Bill Amounts	1	2	3	4	5	6	7	8	9	10	11	12
A	Avg. Bill Amount Before Discount	$ 69.20	$ 74.30	$ 70.00	$ 71.00	$ 72.50	$ 77.80	$ 77.20	$ 75.80	$ 76.40	$ 71.30	$ 69.10	$ 71.30
	Avg. Bill Amount After Discount	$ 48.20	$ 50.60	$ 45.90	$ 46.90	$ 48.40	$ 53.70	$ 53.10	$ 51.70	$ 52.30	$ 47.20	$ 45.00	$ 47.20
B	Avg. Bill Amount Before Discount	$ 64.90	$ 70.40	$ 65.00	$ 65.70	$ 67.50	$ 71.70	$ 72.00	$ 70.70	$ 71.20	$ 65.50	$ 63.90	$ 66.60
	Avg. Bill Amount After Discount	$ 50.70	$ 53.50	$ 48.10	$ 48.80	$ 50.60	$ 54.80	$ 55.10	$ 53.80	$ 54.30	$ 48.60	$ 46.90	$ 49.60
C	Avg. Bill Amount Before Discount	$ 59.50	$ 65.90	$ 60.30	$ 61.10	$ 62.80	$ 67.00	$ 68.10	$ 66.10	$ 66.30	$ 61.60	$ 60.10	$ 62.00
	Avg. Bill Amount After Discount	$ 50.40	$ 54.60	$ 49.00	$ 49.80	$ 51.60	$ 55.80	$ 56.90	$ 54.90	$ 55.10	$ 50.40	$ 48.90	$ 50.80
D	Avg. Bill Amount Before Discount	$ 58.80	$ 64.40	$ 59.30	$ 59.90	$ 61.90	$ 65.80	$ 66.40	$ 65.70	$ 65.80	$ 60.70	$ 59.10	$ 61.40
	Avg. Bill Amount After Discount	$ 51.50	$ 55.40	$ 50.30	$ 50.90	$ 52.90	$ 56.80	$ 57.40	$ 56.80	$ 56.90	$ 51.80	$ 50.20	$ 52.50
K	Avg. Bill Amount Before Discount	$ 72.90	$ 68.60	$ 66.90	$ 63.00	$ 66.60	$ 76.20	$ 76.30	$ 76.10	$ 75.10	$ 66.20	$ 70.10	$ 73.80
	Avg. Bill Amount After Discount	$ 63.70	$ 57.70	$ 55.90	$ 52.00	$ 55.50	$ 65.10	$ 65.20	$ 65.00	$ 64.00	$ 55.10	$ 59.10	$ 62.90
L	Avg. Bill Amount Before Discount	$ 56.50	$ 68.50	$ 58.00	$ 57.10	$ 60.20	$ 76.90	$ 66.80	$ 65.50	$ 67.80	$ 56.40	$ 58.60	$ 62.50
	Avg. Bill Amount After Discount	$ 50.30	$ 60.60	$ 50.10	$ 49.10	$ 52.20	$ 68.80	$ 58.70	$ 57.40	$ 59.70	$ 48.30	$ 50.50	$ 54.50
M	Avg. Bill Amount Before Discount	$ 60.20	$ 67.70	$ 60.60	$ 58.80	$ 60.50	$ 72.60	$ 70.80	$ 64.70	$ 68.50	$ 58.60	$ 58.80	$ 61.90
	Avg. Bill Amount After Discount	$ 55.70	$ 62.30	$ 55.20	$ 53.40	$ 55.10	$ 67.30	$ 65.50	$ 59.40	$ 63.20	$ 53.30	$ 53.40	$ 56.60
N	Avg. Bill Amount Before Discount	$ 51.80	$ 53.60	$ 50.80	$ 52.30	$ 55.70	$ 62.40	$ 62.10	$ 60.90	$ 60.30	$ 54.60	$ 60.30	$ 56.40
	Avg. Bill Amount After Discount	$ 48.10	$ 49.50	$ 46.50	$ 47.90	$ 51.50	$ 58.30	$ 58.00	$ 56.70	$ 56.00	$ 50.40	$ 56.10	$ 52.10
T	Avg. Bill Amount Before Discount	$ 60.30	$ 65.20	$ 56.20	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Avg. Bill Amount After Discount	$ 56.00	$ 60.00	$ 51.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Z	Avg. Bill Amount Before Discount	$ 82.80	$ 84.40	$ 79.80	$ 82.90	$ 82.00	$ 84.80	$ 84.60	$ 78.00	$ 81.60	$ 77.40	$ 73.10	$ 77.10
	Avg. Bill Amount After Discount	$ 69.00	$ 68.10	$ 63.30	$ 66.40	$ 65.50	$ 68.20	$ 67.80	$ 61.10	$ 64.90	$ 60.60	$ 56.40	$ 60.80

*There was one customer with discount code "T" in 2018 and that account was closed in April 2018.

2018 Uplift Participation by Program					
2018	**ADP Program Recipients**	**Senior Program Participants**	**Disability Program Participants**	**Project Agua Recipients**	**Project Agua Assistance Provided**
January	25,291	112,769	1,243	236	$ 22,968
February	25,460	114,922	1,247	324	$ 30,196
March	25,483	115,537	1,229	315	$ 29,587
April	25,531	116,214	1,225	203	$ 18,174
May	26,288	117,163	1,212	240	$ 23,132
June	26,603	118,044	1,215	343	$ 34,604
July	26,772	118,955	1,205	408	$ 39,922
August	27,275	119,858	1,202	542	$ 61,691
September	27,929	120,716	1,199	472	$ 68,617
October	28,031	121,650	1,210	475	$ 76,884
November	26,365	122,400	1,220	178	$ 18,297
December	29,235	122,901	1,527	59	$ 6,015
				3,795	**$ 430,087**

ADP - eligible recipients receive a credit on their water bill based on the services they receive and their level of poverty

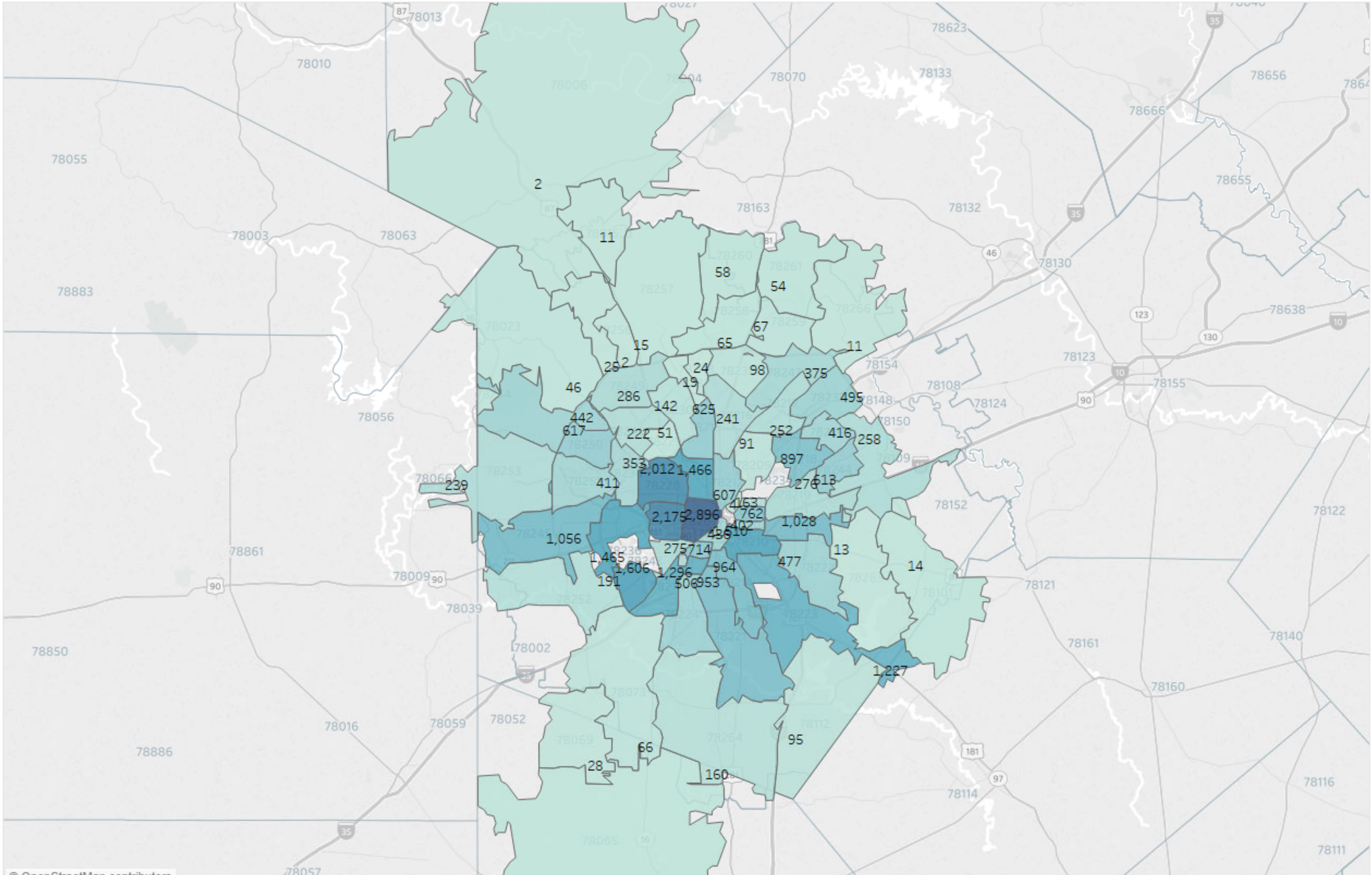
Senior Citizen Program - customers age 60 or older have late penalties waived

Disability/Disabled Veteras - 10 day payment extension to eligible customers who receive disability income

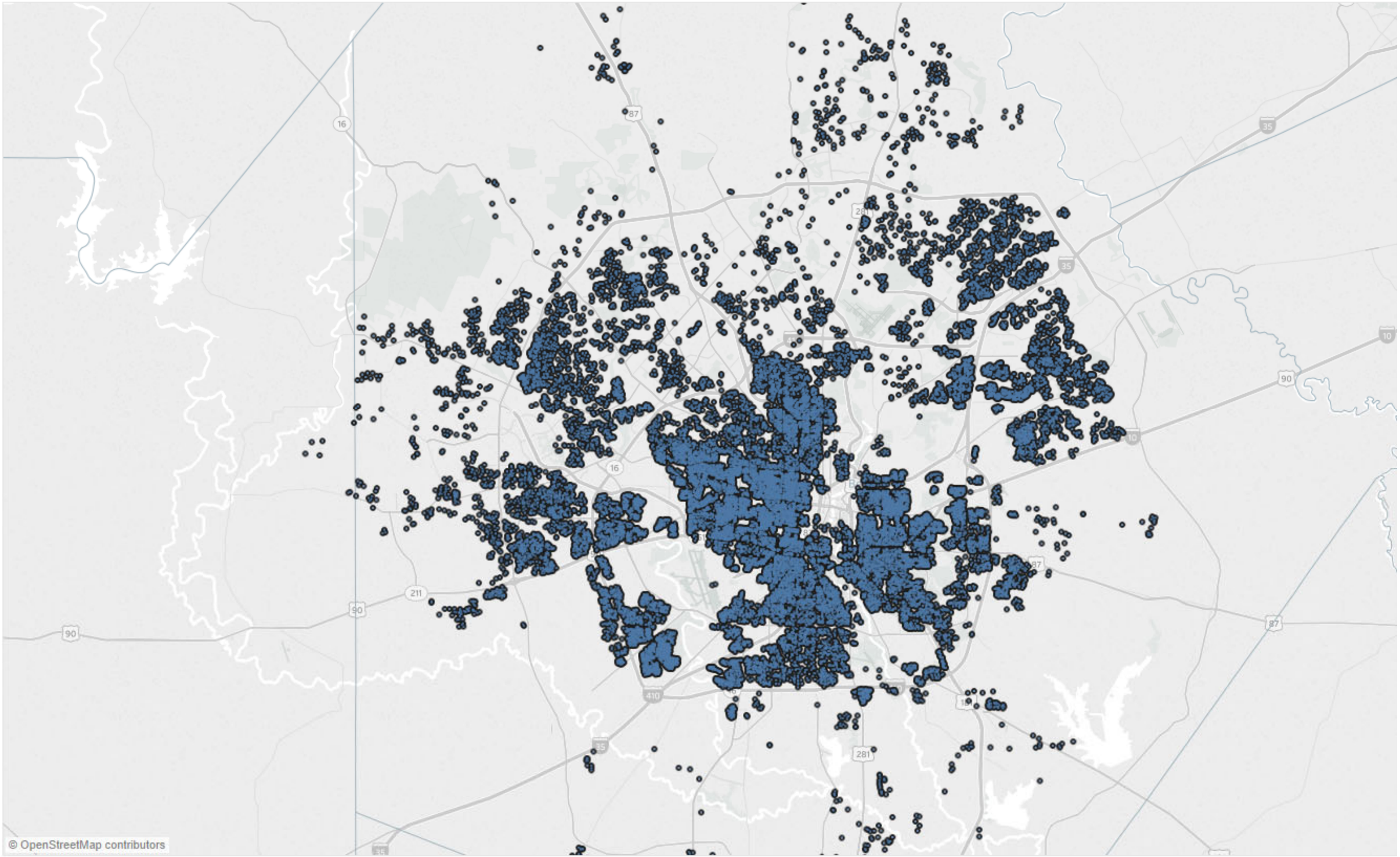
Project Agua- eligible recipients receive emergency payment assistance up to two times a year

Accounts Turned Off for Non-Payment ADP vs Non-ADP Customers						
December 2018	**ADP Customers**		**Non-ADP Customers**		**Total Customers**	
	Count	**%**	**Count**	**%**	**Count**	**%**
Accounts Turned Off for Non-Payment	7,277	24.9%	62,307	14.0%	69,584	14.7%
Total Customers	29,235	100.0%	444,098	100.0%	473,333	100.0%
December 2019	**ADP Customers**		**Non-ADP Customers**		**Total Customers**	
	Count	**%**	**Count**	**%**	**Count**	**%**
Accounts Turned Off for Non-Payment	7,464	23.3%	50,238	10.4%	57,702	11.2%
Total Customers	32,083	100.0%	481,994	100.0%	514,077	100.0%

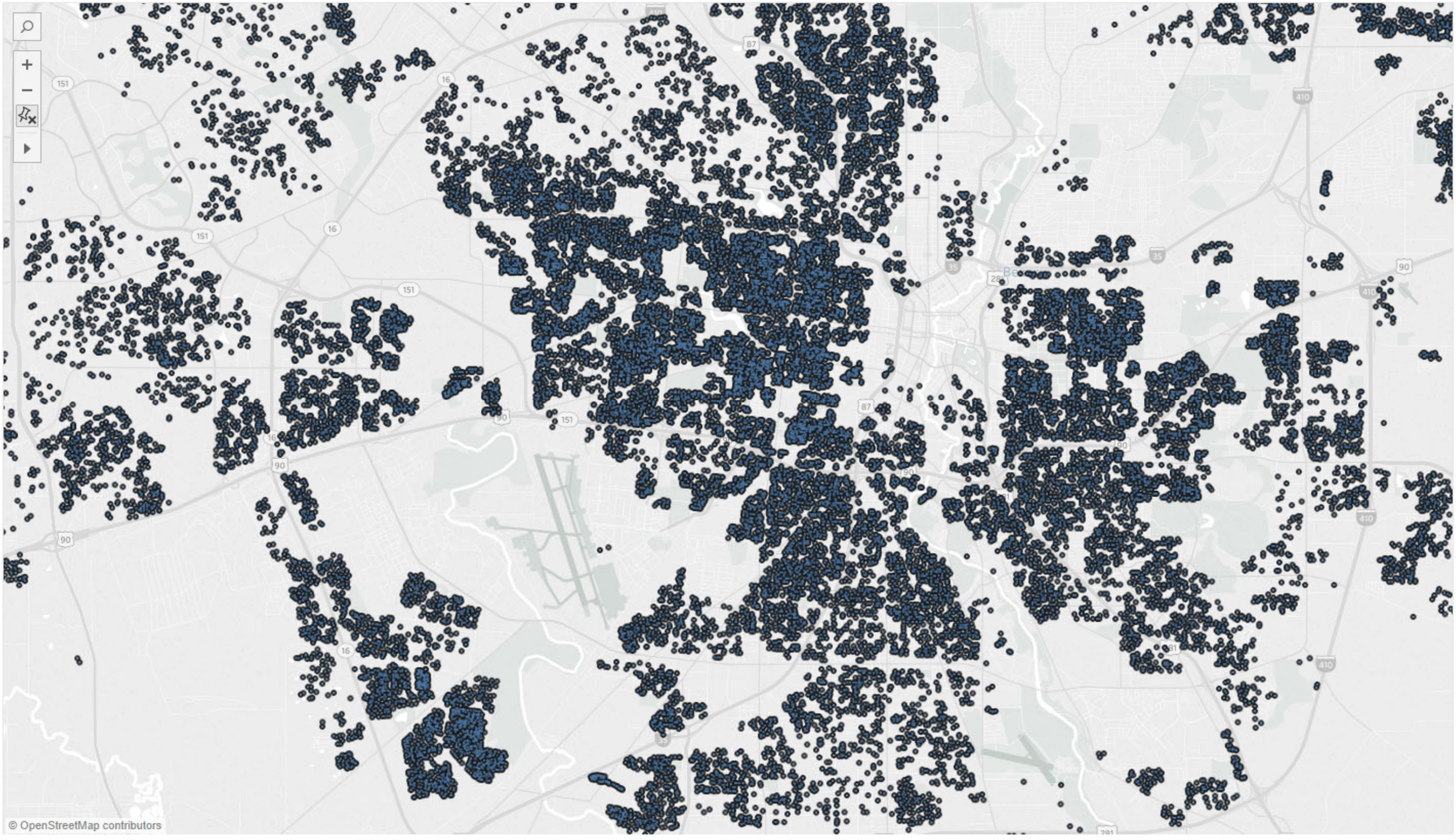
Affordability (ADP) Accounts Zip Code Map



All Current ADP Customers



All Current ADP Customers



Customers Receiving ADP Discounts By Zip Code as of December 2018	
Zip	**Count**
78015	8
78023	28
78065	13
78069	23
78073	52
78101	15
78109	165
78112	69
78201	1,445
78202	781
78203	392
78204	407
78207	2,830
78208	174
78209	74
78210	1,478
78211	1,176
78212	599
78213	577
78214	917
78215	4
78216	218
78217	217
78218	873
78219	262
78220	994
78221	842
78222	404
78223	1,084
78224	469
78225	685
78226	266
78227	1,292
78228	1,801
78229	39
78230	117
78231	15
78232	87
78233	420

Customers Receiving ADP Discounts By Zip Code as of December 2018	
Zip	**Count**
78237	2,034
78238	328
78239	304
78240	156
78242	1,507
78244	477
78245	799
78247	310
78248	19
78249	212
78250	520
78251	327
78252	124
78253	147
78254	324
78255	22
78256	2
78257	14
78258	48
78259	50
78260	35
78261	38
78263	7
78264	113
78266	6
Total	**29,235**

Link to Matrix