AGENDA

MEETING OF THE
SAN ANTONIO WATER SYSTEM
BOARD OF TRUSTEES
October 10, 2017, 9:30 A.M.
6th Floor Board Room #609
Administrative Offices
2800 U. S. Hwy 281 North, San Antonio, Texas 78212

1. MEETING CALLED TO ORDER.

2. Announcements.
   A. The San Antonio Water System Board of Trustees will, during the Meeting, close the Meeting and hold an Executive Session pursuant to and in accordance with Chapter 551 of the Texas Open Meetings Act. The Board of Trustees may, at any time during the Meeting, close the Meeting and hold an Executive Session for consultation with its attorneys concerning any of the matters to be considered during the Meeting pursuant to Chapter 551 of the Texas Open Meetings Act.

3. Minutes.
   A. Approval of the Minutes of the San Antonio Water System Board of Trustees Regular Board Meeting of August 1, 2017.


5. Public Comment.

SAN ANTONIO WATER SYSTEM
HANDICAPPED ACCESSIBILITY STATEMENT
The San Antonio Water System Buildings and Meeting Rooms are accessible to individuals with disabilities. Accessible visitor parking spaces as well as the accessible entrance and ramp are located at the west side main entrance of the SAWS Headquarters Building, Tower I, 2800 U.S. Highway 281 North. Individuals with disabilities in need of auxiliary aids and services, including Deaf interpreters, must request such aids and services forty-eight (48) hours prior to the meeting. For assistance, contact the Board Administrator at 210-233-3690 or 711 (Texas Relay Service for the Deaf).
CONSENT AGENDA ITEMS

Items 6 – 15

ITEMS CONCERNING THE PURCHASE OF EQUIPMENT,
MATERIALS AND SUPPLIES

6. A Resolution accepting recommendations regarding the contracting for certain services, equipment, materials, and supplies, and authorizing the acceptance of bids as follows:

(DOUG EVANSON – YVONNE TORRES)

A. Award of New One Time Purchases of Materials, Equipment and Services.

1. Approving a one-time purchase from Alsay, Incorporated to provide: well plugging services of saline monitor wells, Bid No. 17-17080, for a total of $61,750.00.

2. Approving a one-time purchase from Dealers Electrical Supply to provide: SCADA equipment, Bid No. 17-17084, for a total of $94,513.80.

3. Approving a one-time purchase from Saitech, Inc. to provide: VMware equipment and support, Bid No. 17-17052, for a total of $96,192.00.

4. Approving a one-time purchase from Valve Industries, Inc. to provide: automatic valve shutoff control panels and chlorine cylinder shutoff valves phase 2, Bid No. 17-17093, for a total of $236,725.00.

5. Approving a one-time purchase from Grainger to provide: generators, BuyBoard 501-15, Bid No. 17-17102, for a total of $82,560.00.

B. Award of New and Renewal Annual Goods & Services Requirement Contract and Maintenance Agreements. Estimated annual purchases are based on unit prices bid. Actual totals and quantities may vary from the estimate.

1. Acceptance of the bid of Safety Supply, Inc. to provide: annual contract for plastic barricades & traffic control devices, Bid No. 17-0009, for a total of $99,514.20.

2. Acceptance of the bid of Jet-Vac Equipment Co., LLC to provide: annual contract for sewer cleaning tools, Bid No. 17-1034, for a total of $52,843.00.

3. Acceptance of the bid of Fortiline to provide: annual contract for reduced-wall resilient seated gate and tapping valves, Bid No. 17-0013, for a total of $575,112.00.
4. Acceptance of the single source bid of Shelton Presort, Inc. to provide: annual contract for presort mail service, Bid No. 17-0366, for a total of $69,380.36.

5. Acceptance of the single source bid of Environmental Options, Inc. to provide: annual contract for hazardous waste operations and emergency response (Hazwoper) training, Bid No. 17-17015, for a total of $150,000.00.

6. Acceptance of the single source bid of Ancira Motor Co., Inc. to provide: annual contract for Chrysler, Dodge, Plymouth and Jeep light duty vehicle parts and service, Bid No. 17-0194, for a total of $88,125.00.

7. Acceptance of the single source bid of Freedom Chevrolet to provide: annual contract for GM and Chevrolet cars and light duty vehicle parts and service, Bid No. 17-1057, for a total of $79,200.00.

CAPITAL IMPROVEMENT CONTRACTS

PROJECTS INVOLVING IMPROVEMENTS, EXTENSIONS AND ADDITIONAL CAPACITY

Water and Sewer Line Improvements

7. A Resolution approving Recapitulation Change Order No. 3 in the decreased amount of $107,369.88 to be credited to the construction contract with Atlas Construction Corporation in connection with the 2015 Governmental Water and Sewer Construction Package II Project. (ANDREA BEYMER – GAIL HAMRICK-PIGG)

Production, Transmission and Treatment Improvements

8. A Resolution awarding a construction contract to Archer Western Construction, LLC in an amount not to exceed $1,139,900.00 in connection with the Naco Lime Slurry System Project. (ANDREA BEYMER – MICHAEL MYERS)

MISCELLANEOUS ITEMS

9. A Resolution approving certain actions relating to outstanding obligations designated as City of San Antonio, Texas Water System Commercial Paper Notes, Series B, including authorization of a Second Amendment to the Revolving Credit Agreement relating to the Series B Notes; an amendment to the related fee agreement; approval of an updated offering memorandum relating to the commercial paper notes. (DOUG EVANSON)
10. A Resolution awarding a service contract to CEB, Inc. in an amount not to exceed $136,000.00 for a four-year period in connection with Contact Center Best Practices and Improvement Subscription Services. (AGNES BARARD – EMMA BRIDGES)

11. A Resolution awarding a service contract to Burgess & Niple, Inc. in an amount not to exceed $70,762.36 in connection with the Sanitary Sewer Smoke Testing in the CS38 Sub-Basin Contract. (JEFF HABY – TAMSEN MCNARIE)

12. A Resolution approving the filing of a lawsuit against JT Underground & Utility Construction, Inc. in connection with its damage to SAWS infrastructure; and further authorizing the System’s General Counsel to take all necessary action relating to such lawsuit. (NANCY BELINSKY)

13. A Resolution approving the filing of a lawsuit against K-Bar Services, Inc. in connection with its damage to SAWS infrastructure; and further authorizing the System’s General Counsel to take all necessary action relating to such lawsuit. (NANCY BELINSKY)

14. A Resolution approving the filing of a lawsuit against Signal Service Group, Inc. and CATO Drilling Company in connection with their damage to SAWS infrastructure; and further authorizing the System’s General Counsel to take all necessary action relating to such lawsuit. (NANCY BELINSKY)

15. A Resolution authorizing the intervention of the System in a lawsuit filed by Jesus Mendez-Monita against Juan Gonzalez Gonzalez, Epifania Gonzalez and Omar Soto in connection with damages and worker’s compensation benefits paid to SAWS employee Jesus Mendez; and further authorizing the System’s General Counsel to take all necessary action relating to such lawsuit. (NANCY BELINSKY)

ITEMS FOR INDIVIDUAL CONSIDERATION

CAPITAL IMPROVEMENT CONTRACTS

PROJECTS INVOLVING IMPROVEMENTS, EXTENSIONS AND ADDITIONAL CAPACITY

Developer Customer Contracts

17. A Resolution approving Utility Service Agreements to provide water and/or wastewater service to the tracts listed below requiring potential oversizing of mains (OVR), and/or are located outside the San Antonio Water System water and/or wastewater Certificate of Convenience and Necessity (CCN).

(ANDREA BEYMER – SAM MILLS)

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<tr>
<th>No.</th>
<th>Tract Name</th>
<th>Developer</th>
<th>Acres</th>
<th>W EDUs</th>
<th>WW EDUs</th>
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Production, Transmission and Treatment Improvements

18. A Resolution awarding a professional services contract to Alan Plummer Associates, Inc. in an amount not to exceed $1,321,490.00 for the period of October 16, 2017 to December 31, 2020 in connection with the Mitchell Lake Wetlands Water Quality Treatment Initiatives. (ANDREA BEYMER – SAM MILLS)

19. BRIEFING SESSION.
   A. Briefing and deliberation regarding Vista Ridge
   B. Briefing and deliberation regarding 2018 Proposed Budget Follow-up

20. President/Chief Executive Officer’s Report.
   A. Mitchell Lake

21. Inquiries of the Board of Trustees for future briefings and/or follow-up action.

22. The Regular Session of the October 10, 2017, Regular Board Meeting is hereby recessed to hold an Executive Session and discuss the matters listed pursuant to Sections §551.071 and §551.074 of the Texas Open Meetings Act.
23. EXECUTIVE SESSION.

A. Consultation with attorneys regarding legal matters related to the sewer line project and road collapse on Quintana Road in Bexar County, Texas, pursuant to Tex. Gov’t Code §551.071.

B. Deliberation regarding the employment, evaluation and duties of the President/Chief Executive Officer and consultation with attorneys regarding any related legal matters pursuant to Tex. Gov’t Code §551.074 and §551.071.

24. The Regular Session of the Regular Board Meeting of October 10, 2017, is hereby reconvened.

1. MEETING CALLED TO ORDER.

The meeting of the San Antonio Water System Board of Trustees was held on August 1, 2017, and called to order at 9:08 a.m. by Chairman Berto Guerra.

2. Announcements.
   A. The San Antonio Water System Board of Trustees will, during the Meeting, close the Meeting and hold an Executive Session pursuant to and in accordance with Chapter 551 of the Texas Open Meetings Act. The Board of Trustees may, at any time during the Meeting, close the Meeting and hold an Executive Session for consultation with its attorneys concerning any of the matters to be considered during the Meeting pursuant to Chapter 551 of the Texas Open Meetings Act.

3. Minutes.
   A. Approval of the Minutes of the San Antonio Water System Board of Trustees Regular Board Meeting of June 6, 2017.
Chairman Guerra asked if there were any corrections to the minutes. Hearing none, he stated the minutes were approved as presented.

4. **Ceremonial and Recognition Items.**

Greg Wukasch discussed SAWS intern program. The interns received practical hands-on experience in departments throughout SAWS, and participated in weekly classes called Intern U that was designed to introduce the business of SAWS and to purposely engage the interns with SAWS vision and mission. The expected outcome was to provide these temporary team members with a sense of belonging, to create participatory ambassadors to advocate for SAWS, and to hopefully recruit them to come to work for SAWS in a full-time position.

He recognized SAWS team members, Lynne Christopher, Angelica Zuniga, and Leslie Kirkley, who were instrumental in developing and implementing the program.

Chairman Guerra addressed the interns and thanked the interns for spending quality time at SAWS to learn all about a public utility.

Mayor Nirenberg congratulated the interns on a great summer. He asked them to remember the experience they had at SAWS and to consider a life of service in San Antonio.

Mr. Rowe asked if the interns would introduce themselves and their college or university.

- Daniel Perry, UTSA
- Christopher Atkison, UTSA
- Savanna O'Neal, Tarleton State University
- Daniela Alvarez, St. Mary's University
- Alex Ortiz, Trinity
- Jose Rojas, UTSA
- David Cario
- Cristian Aldrete, Texas Tech
- Numenee Barclay, UTSA
- Danielle Bibles, Texas A&M – San Antonio
- Robert Sigler, UTSA
- Courtney Schmidt, University of Incarnate Word
- Victor Vargas, University of Incarnate Word
- Bradley Johnson, Texas State
- Conner Glenn, Methodist University of North Carolina
- Ryan Smith, Texas A&M Corpus Christi
- Ethan Gonzalez, Trinity
- Aida Nicholson, Texas Woman's University
- Phillip Valladolid, UTSA
- Cole Davila, Austin College
- Ryan Smith, Texas A&M – San Antonio
- Ethan Gonzalez, University of Incarnate Word
Mr. Puente commented on the events of July 26, when a SAWS truck came upon an accident on 1604 and Bandera. One of the vehicles in the accident had caught fire, and the fire department had not arrived yet. Other citizens tried to put out the fire with fire extinguishers with no luck. Operators, Robert Herrera and Joanna Trevino, decided to take matters into their own hands. The truck they were driving had a lot of water in it, and they did what needed to be done. He introduced a video of the news interview.

Chairman Guerra thanked the employees for stepping up to the plate in time of need and saving a life. He stated their service to the organization and to the community was very much appreciated.

Mayor Nirenberg echoed the comments and thanked the employees for going above and beyond.

5. **Public Comment.**

Steve Marceau stated he was a ratepayer in the former BexarMet area. Since the acquisition by SAWS, the administration, maintenance and service had improved enormously. On occasion he had called in for assistance, and the people were friendly, polite and very helpful answering his questions. He commented on the work and maintenance by SAWS staff. He stated it was a tribute to the heritage of SAWS and to the management by staff and oversight by the Board. He thanked SAWS for providing a vital resource to the people of San Antonio and Bexar County.

Terry Burns, chair of the local Alamo Group of the Sierra Club, asked the Mayor, the Board of Trustees and the City of San Antonio to provide the voters and ratepayers of San Antonio with a comprehensive public report on the status of Vista Ridge. He asked for information regarding the changes to the contract, project financing, hydrology studies, the Central Texas Regional Water Supply Corporation, condemnation procedures, and possible Texas Swift funds. He commented on the draft Water Management Plan, and the time spent visiting with Sierra Club members to discuss alternative ideas proposed by the Sierra Club. He asked the Board to incorporate more of these ideas such as low impact development, stormwater management, and slow sink management of water to recharge the aquifer.

**CONSENT AGENDA ITEMS**

**Items 6 – 15**

**ITEMS CONCERNING THE PURCHASE OF EQUIPMENT, MATERIALS AND SUPPLIES**

6. **A Resolution accepting recommendations regarding the contracting for certain services, equipment, materials, and supplies, and authorizing the acceptance of bids as follows:**  

   *(DOUG EVANSON – YVONNE TORRES)*

   **A. Award of New One Time Purchases of Materials, Equipment and Services.**

   1. Approving a one-time purchase and installation from Gillette Air Conditioning Co., Inc. to provide: Heat Recovery A/C System for Bldgs. 16 & 17 at Dos Rios Water Recycling Center, Bid No. 17-17063, for a total
of $551,000.00.

2. Approving a one-time purchase from DN Tanks to provide: cleaning and coating services for Wurzbach Pump Station, Bid No. 17-17040, for a total of $191,893.00.

3. Approving a one-time purchase from SpawGlass Contractors, Inc. to provide: painting and protective pipe coating for Dos Rios Recycling Center, BuyBoard #520-16, Bid No. 17-17075, for a total of $130,770.27.

B. Award of New and Renewal Annual Goods & Services Requirement Contract and Maintenance Agreements. Estimated annual purchases are based on unit prices bid. Actual totals and quantities may vary from the estimate.

1. Authorizing the extension of an existing contract of ASCO Equipment to provide: annual contract for diesel exhaust fluid and pre-mixed two stroke engine fuel, Bid No. 14-14102, Item 2, for a total of $74,484.00.

2. Acceptance of the sole source bid of SmartCover Systems, Inc. to provide: annual contract for SmartClean professional services program overflow monitoring devices, Bid No. 17-17011, for a total of $1,130,153.33.

3. Acceptance of the bid of Bio-Aquatic Testing, Inc. to provide: annual contract for biomonitoring analytical services, Bid No. 17-3014, for a total of $60,140.00.


5. Acceptance of the bid of Weisinger, Incorporated to provide: annual contract for high service pump repair, machining and technical/field support services, Bid No. 17-7033, for a total of $524,612.00.

6. Acceptance of the bid of Q-Haul, Inc. dba QMC Services to provide: annual contract for hauling of spoil materials, Bid No. 17-0648, for a total of $682,700.00.

CAPITAL IMPROVEMENT CONTRACTS
PROJECTS INVOLVING IMPROVEMENTS, EXTENSIONS AND ADDITIONAL CAPACITY
Developer Customer Contracts

7. A Resolution approving Utility Service Agreements to provide water and/or wastewater service to the tracts listed below requiring potential oversizing of mains (OVR), and/or are located outside the San Antonio Water System water and/or wastewater Certificate of Convenience and Necessity (CCN). (ANDREA BEYMER – SAM MILLS)
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<th>Developer</th>
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### Water and Sewer Line Improvements

8. A Resolution approving Contract Amendment No. 1 in the amount not to exceed $140,240.00 to the professional services contract with CDS Muery in connection with the Martinez Creek Project. (ANDREA BEYMER – GAIL HAMRICK-PIGG)

### Production, Transmission and Treatment Improvements

9. A Resolution awarding a professional services contract to Grubb Engineering, Inc., in the amount not to exceed $558,653.00 in connection with the Water Production Facilities Upgrades Phase II Project. (ANDREA BEYMER – MICHAEL MYERS)

### REPLACEMENT AND ADJUSTMENT PROJECTS

#### Governmental Relocation and Replacements

10. A Resolution ratifying the actions of the Vice President of Engineering and Construction in approving Change Order No. 1 in the amount of $13,228.48 and approving Change Order No. 2 in the amount of $38,781.11; authorizing the expenditures of additional funds to Bexar County in the amount not to exceed $59,811.03 in connection with FM 471 Culebra Road Project. (ANDREA BEYMER – GAIL HAMRICK-PIGG)

11. A Resolution approving Contract Amendment No. 1 to the Advance Funding Agreement; authorizing the expenditure of additional funds in the amount not to exceed $234,405.48 payable to the Texas Department of Transportation for the adjustment of water and sewer facilities in connection with the US 281: Loop 1604 to Stone Oak Parkway Project. (ANDREA BEYMER – GAIL HAMRICK-PIGG)

### EASEMENT AND REAL PROPERTY

12. A Resolution declaring a public necessity for public use, the acquisition of certain real property in the City of San Antonio being a permanent easement, the project consisting of rehabilitation of a sewer main along the north property line of a parking lot on S.W. Military Dr. at South Flores St. then within the right of way of South Flores St. in the southwest quadrant of Bexar County, Texas, for the public use of the expansion and operation of the System through the construction of the Flores Street And Pleasanton Road Project; requesting that the City Council of the City of San Antonio adopt an
ordinance reaffirming and declaring that the project is for a public use and a public necessity exists for the acquisition of the easements and authorizing the System to take all appropriate action to acquire the easements by negotiation and/or condemnation. Project located in NCB: 9472 and 9477. (NANCY BELINSKY – BRUCE HABY)

13. A Resolution declaring a public necessity for public use, the acquisition of certain real property in the City of San Antonio being permanent easements, the project consisting of a water main along the southern right of way of U.S. Highway 90 terminating east of Highway 211 in the southwest quadrant of Bexar County, Texas, for the public use of the expansion and operation of the System through the construction of the Highway 90 Water Main Extension Project; requesting that the City Council of the City of San Antonio adopt an ordinance reaffirming and declaring that the project is for a public use and a public necessity exists for the acquisition of the easements and authorizing the System to take all appropriate action to acquire the easements by negotiation and/or condemnation. Property located in CB: 4342, 4342B, 4342C, and 5681. (NANCY BELINSKY – BRUCE HABY)

MISCELLANEOUS ITEMS

14. A Resolution awarding a services contract to MarketPay in the amount not to exceed $108,000.00 in connection with compensation management software services. (SHARON DE LA GARZA)

15. A Resolution ratifying the actions of the Vice President of Customer Service in approving the expenditure of additional funds in the amount of $167,784.96 to Credit Systems International, Inc., and $50,674.02 to Municipal Services Bureau; approving a Full and Final Compromise Agreement with Credit Systems International, Inc. for an additional amount of $25,037.61 in connection with third party collections activities. (DOUG EVANSON – AGNES BARARD)

Chairman Guerra stated Item 7 was pulled for individual discussion. He asked if there were any other items in the Consent Agenda that should be pulled for individual discussion or consideration.

Mr. Arrellano made a motion to approve the Consent Agenda Items, Nos. 6 – 15, except for Item 7. Mr. Rowe seconded the motion.

Consent Agenda Items, Nos. 6 – 15 except for Item 7, were unanimously approved. Verbal voting.

Chairman Guerra stated he would move to the Briefing Session.

22. BRIEFING SESSION.

A. Briefing and deliberation regarding Vista Ridge Project

Linda Bevis gave a brief update on the Large Water Main Pipeline Condition Assessment
Program. The components of the integration program included treatment at the terminus site, the receiving station, a new pump station, some upgrades at existing pump stations, new ground storage tanks, as well as pipeline reassignment and construction, control valves, and SCADA updates at several of the pump stations. Of the 14 miles of pipeline reassignment and construction, over 10 miles was existing pipeline that was part of the former BexarMet system. There was very little history in terms of what that pipeline had been through, or how it was constructed. With the magnitude of the Vista Ridge Project that was coming through, staff thought it was our due diligence to ensure the integrity and the operability of the pipeline. A condition assessment was performed on those existing critical assets.

She described the technologies used that included the Sahara, the SmartBall, and the PipeDiver, and reviewed a summary of the data collected on the pipes inspected. The work was divided into three sections. The first section was a 48-inch existing ductile iron (DI) main that traversed through Hill Country Village and Hollywood Park. This was a former BexarMet main and very little history was available. Some of the data collected showed locations of corrosion along the pipe. Of the 1,248 pipes inspected, one of the pipes was found with the corrosion cell. Basically, twenty feet of the 4.6 miles had potential need for replacement or repair. The second section of the pipeline was a 36-inch concrete steel cylinder (CSC) main that stretched from Bitters Road/West Avenue intersection to the Maltsberger Pump Station. The preliminary results indicated no broken wires or any damage for 99.3 percent, leaving .07 percent of pipeline with potential issues. The third section was the 30-inch DI and CSC main stretching from Maltsberger Pump Station going south towards the Basin Pump Station.

Mr. Rowe asked for an explanation of broken wire wraps. Ms. Bevis replied the concrete steel cylinder pipe had a thin-walled steel cylinder. Inside was a mortar lining, and the outside was wrapped with a wire basically of a certain diameter that provided the integrity to the pipeline. The wire was encased in another mortar lining on the outside, which provided strength to the pipe.

Ms. Bevis reviewed another section that the SmartBall was used. Similar results were received from the draft report. The number of leaks found were two in the 48-inch main; two in the 36-inch main; and three in the 30-inch main. A good preliminary report was received on the integrity of the pipes intended for use in Vista Ridge water. This provided certainty of the operability and provided the ability to truly manage critical assets. Access points along the pipeline were created to give access in the future to get these tools into the pipeline to maintain and monitor the health of these pipelines through the next 30 to 60 years of Vista Ridge. Again, preliminary results indicated that less than one percent of the total pipes of the 10 miles of existing pipe were in need of repair. The engineer’s estimate at this point was approximately $155,000.00 to address those repairs. Once those sections were exposed, staff would be able to look at the pipe from inside so there could be a slight adjustment to the estimate. The assessment cost thus far was about $1.5 million with Pure Technology and the support of SAWS staff. She pointed out that if in fact the main ended up being a very poor condition main, it could have end up being about $9.75 to $10 million to replace or significantly repair the main.

Mayor Nirenberg inquired about the industry standard for the percent of pipes that were in need of replacement or repair. Ms. Bevis replied the industry standard was approximately
Mayor Nirenberg asked if this was new construction as well as existing pipe. Ms. Bevis responded that this was only existing pipe. The new construction had not yet happened, so the assessment was only what was in the ground.

B. **Briefing and deliberation regarding Quarterly Financial and Investment Reports**

Phyllis Garcia presented the Second Quarter Investment Report as required by the Texas Public Funds Investment Act. And total investments at the end of the quarter were $826 million, down from the previous quarter primarily due to the debt service payment of $132 million on May 15. Earnings for the quarter totaled $1.8 million, and the overall portfolio yield was 96 basis points.

The majority of the portfolio was invested in U.S. Government Securities in the form of discount notes and coupon notes, with the remaining funds invested in U.S. Treasury Notes, money market funds, and the investment pools. As required on the Investment Policy and the Texas Public Funds Investment Act, the portfolio was invested in a diverse number of issuers. The benchmark of the portfolio was a six-month and one-year U.S. Treasury Notes. As of the end of June, the portfolio was unfavorable to the benchmark. Treasury rates were based on the rates on a particular day. SAWS portfolio was based on the total portfolio holdings, which did not change as drastically as the benchmark. SAWS portfolio reacted slower to changes in interest rates, which was favorable in a declining interest rate environment.

For the short to intermediate term of the yield curve, the rates continued to increase during the quarter with the exception of the five-year Treasury Note. Current expectations were that short-term rates would continue to increase with one more Fed rate hike expected by end of year. As required by SAWS Investment Policy, deposits at a bank were to be collateralized. As of June 30, all deposits were collateralized. SAWS continued to utilize investment credit at the bank to offset bank fees, and the investment credit was earning 1.15 percent as of the end of June.

Overall, SAWS Investment Portfolio was in compliance with SAWS Investment Policy and with Texas Public Funds Investment Act. All transactions were made in accordance to SAWS investment strategies, and the portfolio was invested for its objectives in order of priority of legality, safety, liquidity, diversification and, finally, yield.

Mary Bailey presented the financial results for the first six months of 2017. The financial results for the first six months have been strong, with favorable variances in non-operating income. Operating expenses and interest expense have more than offset the slightly unfavorable variance in operating revenues for the period. As a result, the increase in net position before capital contributions of $33.9 million was more than double the $16.7 million that was budgeted for the period. While operating revenues were favorable through June by $1.6 million, this trend was expected to reverse in July as a result of the limited rainfall during the last two months and the hot temperatures over the last six weeks or so. The increase in operating revenues for 2016 was due to the above average rainfall during the first six months of 2016, as well as the customer growth experienced and then an average rain
increase of 6.8 percent in January. Operating expenses before depreciation were $5.5 million favorable to budget, largely due to timing differences in certain contractual services, materials and supplies. Operating expenses were $9.8 million more than this time last year. The primary drivers for that increase were salaries and benefits, water options, and also utility costs associated with the operation of the desal plant. Interest and debt related expenses were favorable to budget by $9.4 million, due in part to savings that were achieved through refunding of bonds both in 2016 and earlier this year and, of course, the timing of the planned debt issuances for 2017. She pointed out that the budget assumed new debt would be issued on January 1. In fact, debt issuance may even be delayed until early 2018. As a result, favorable variances would be achieved in interest expense. Impact fees continued to be strong for the first half of 2017 and were greater than this time last year. Developer contributions of infrastructure were lagging a bit behind budget and as the total from last year as well. However, customer growth continued fairly strong at 1.6 percent.

SAWS financial position continued to show improvement year over year with the increase in net position of $212 million over the last 12 months. Particularly the $81 million increase in unrestricted net position were indications of this improvement. Unrestricted investments increased $68 million during the last 12 months, and an increase in unrestricted investments were generally utilized to cash fund future capital projects in order to minimize debt issuances and keep rates low. Capital assets increased $176 million compared to this time last year; however, only $67 million was issued in additional debt.

Cash flows for the six-month period ending June had been strong and increased over the first six months of last year due to the increase in operating revenues as a result of rate increases, customer growth, et cetera, and had more than offset the increase in operating expenses. Capital expenditures for the first six months of this year totaled $132 million, which was about 20 percent less than this time last year. However, in 2016 there was a lot of heavy spending on the desal plant, so expenditures were a bit above the normal rate. The overall cash investment declined for the first six months of 2017, largely due to the withdraw on bond funds associated with capital funds, and was consistent with the prior year.

The financial ratios metrics continued to show improvement. In 2017, the debt coverage ratio was 1.78 times. As a reminder, the target was 1.75 times for this metric. This metric, along with days cash on hand were probably the two most critical assets supporting the AA+ bond rating. The days cash on hand increased significantly primarily because those had been used to issue bond funds as well as impact fees to fund capital expenditures.

23. **President/Chief Executive Officer’s Report.**

A. **Capital Improvements Program**

Mr. Clouse provided a briefing that was requested by the Board to provide some insight on how SAWS spending levels and priorities for the Capital Improvement Program (CIP) had changed over time. SAWS was one of the largest utilities in the U.S. While San Antonio was the seventh largest U.S. city, SAWS was ranked one of the top five when total water and wastewater infrastructure was considered. He reviewed a photo of Dos Rios Water Recycling Center (WRC) that was about 700-acres. Dos Rios WRC would cost about $1.5 billion to replace today. The other plants were the Leon Creek WRC, the Medio Creek WRC,
and the H2Oaks Center that included the desal and ASR operations. All of this infrastructure required significant investments to keep the systems operational. SAWS 2017 CIP was $367.5 million.

He focused the presentation on the pipes that were in the system that make up the majority of the infrastructure value. The plants were above ground, had easy technology to assess, and SAWS had done a very robust job of keeping the plants in good physical condition. Historically, the pipelines’ actual condition had been hard to determine. The good news was that pipeline assessment technology was improving and beginning to give some valuable information. The geographical information system was very robust, and staff had found BexarMet pipes that they didn’t know existed. Infrastructure that was never mapped in the past was still being found, but predominantly the location, size, type and installation of the pipes were known. The pipeline system grew about 200 miles per year. About 70 percent of the system growth was contribution from developers that must build these systems to meet SAWS design and construction standards before turning it over to SAWS to maintain and ultimately renew in the future. Other growth came from system acquisitions such as the merge with BexarMet and wastewater system mergers such as San Antonio Ranch, Lackland City Water, Taft School District, Air Force Village, Water Control and Improvement District 16, and the list goes on. These mergers were done for the right regional reasons. The acquired systems were underperforming and merging with SAWS provided the necessary resources to improve the service. Each of these mergers not only grew SAWS infrastructure, it added additional often substandard infrastructure to be improved.

San Antonio made major investments in wastewater improvements in the 1980’s and early 1990’s, when Dos Rios WRC was built, and other wastewater plants were improved. He discussed a major sewer system upgrade program referred to as the 201 Program, which focused primarily in the downtown area of San Antonio. Over a billion dollars was spent doing wastewater improvement work in the 1980’s. That was the same amount to be invested in the sewer system through the Consent Decree today. This showed that the wastewater improvements were a significant public investment at that time.

Right after the wastewater work was completed in the 1990’s, San Antonio was asked to go in a new direction with water. He discussed the order by Judge Bunton that required San Antonio to diversify off of the Edwards Aquifer. The community needed to invest in new water supplies. SAWS built the largest water recycling system in the U.S., so the wastewater investment was immediately paying off. The next early project was the partnership with Guadalupe Blanco River Authority and the construction of the Canyon Lake Water Supply. The priority on water diversification remained a funding and construction focus for SAWS over the last 20 years. Now there were nine new water supplies for San Antonio.

In the early 1990’s, the public was exhausted with the wastewater investments programs. The City wanted to focus on water diversification. SAWS committed to avoid any wastewater rate increase for a five-year period. This goal was far exceeded and wastewater rate increases were avoided for a ten-year period. SAWS became one of the top performing wastewater operations, and was recognized by the Environmental Protection Agency (EPA) for having the top performing wastewater plants in the U.S. Staff sizes were significantly reduced with all the improvements achieved. In hindsight, the initiative did not have a long-term vision for underground assets. The wastewater collection system continued to
grow and get older, and the system was not progressively rehabilitated. By 2005, the system was in real need for renewal and replacement. Wastewater pipes were subjected to aggressive corrosion. Problems in the wastewater system pipes could develop and go on for many years because the system was not under pressure, and the sewage would continue to move through the pipe even though the pipe was in very poor condition.

The EPA used the Consent Decree process to mandate utilities to address all issues that contribute to sanitary sewer overflows, maintenance issues, condition issues, and capacity issues. SAWS was almost at the half way point of the Consent Decree Program, and the assessment of the entire system had been completed. In early 2019, a report would be provided to the EPA that would outline the work to be done through the end of the Consent Decree. There would be a lot of construction work. SAWS had met all Consent Decree deadlines and would continue to in the future. Most importantly, the sanitary sewer overflow rates had dropped dramatically. The sewer work and public investment in the system could not end after the Consent Decree.

He reviewed the standards used to make the decision to replace pipelines. One of the easy measures to point to was the age of the pipe. Age was only one of the factors to be used in the decision process. He discussed the cast iron mains that were installed in the 1920’s that were very thick and very heavy. The decision was whether the pipe needed to be replaced or not. Samples of the pipe were sent to Southwest Research Institute for some intensive evaluation. The report for that pipe stated the pipe was in phenomenal shape. The decision was made not to replace that pipe. Age was a factor, but it could not be the only factor in the decision process. The material type and maintenance issues would be the most important replacement factors. Today, there were good inspection technologies for wastewater pipes and technology was just getting established for assessing water pipes. Even if a pipe was in good shape, the pipe's capacity had to be considered. This was especially true for the wastewater system. Decisions made many years ago on pipe size may not have considered today's growth or today's infiltration rates from rainfall in a wastewater pipe. Pipes in relatively good shape may not be big enough for today's flow. Finally, SAWS would replace pipes that would need to be replaced based on replacement criteria. SAWS would spend $46 million this year doing governmental projects. This was work with the City, the County and TxDOT as they rebuild streets. Changes in grade or elevation of the street could put the pipelines in conflict or the pipeline may need to be relocated or moved to another site. A significant portion of SAWS work was not being done because the pipe was at the end of its useful life, it was done because the community needed the pipe moved and replaced.

He reviewed the industry recommendation for total pipeline replacement and SAWS rate of replacement. Some folks stated that a pipe should last 50 years; therefore, two percent of the entire system should be replaced every year. If this was done, the full useful life of a pipe would not be used. TCEQ recommended that a minimum pipe life should be 50 years. On the water side, the American Society of Civil Engineers recommended that utility replacement rate should be 1.1 to 1.7 percent per year. SAWS was below that number currently at 0.5 percent. After the Consent Decree was completed and Vista Ridge was in place, this was an area that staff needed to increase focus. On the sewer side, the Society of Engineers recommended 1.0 to 1.3 percent per year. SAWS was doing a good job of sewer replacement and was within that recommended range. By the time the Consent Decree was completed, SAWS total system would have grown by another 1,200 miles.
He discussed the CIP dollars since 2001 for water supply, water delivery and wastewater. The water supply had significant money invested. The water delivery had an increase in trend lines, and was probably an area that needed more focus in the future. On the wastewater side the expenditures were relatively flat until 2006, and there had been a steady increase. Once the 2018 budget was finalized, the five-year forecast for the CIP would be provided. Even with water resources success and the Consent Decree, SAWS was positioned at the low end of the average water and sewer residential bills compared to other Texas cities. There were similar challenges across the various utilities that would raise future rates for the other utilities. Both Corpus Christi and Houston were on the verge of entering Consent Decrees, and they would have significant rate impacts when that work begins.

Another way SAWS provided value was looking at how productivity was improved over time. While the numbers of customers served had consistently grown, there had not been a proportional growth in employees. This was critical giving that employee-related costs made up the majority of the annual operating costs. Even when SAWS had taken on a utility the size of Corpus Christi with the merger of BexarMet in 2012, staff had worked to be more efficient and continued to manage the total number of positions.

In summary, SAWS investment in infrastructure was significant and the essential nature of the system to the health of the community were recognized. Maintaining and renewing the system was an activity that San Antonio must do now and do in the future.

Mr. Rowe inquired about the cities with lower residential bills and the different investments by the cities. Mr. Clouse responded that he was not sure of Dallas’ position. El Paso had some advantages such as very few lawns irrigate and they did not have the range of summer peak through winter minimums. This was not just an infrastructure issue but also how much water had to be in reserve to meet summer peaks. El Paso had sold large tracts of property owned by the water utility to help fund capital work, consequently resulting in lower rates through the sale of property. He stated El Paso was considering rate increases.

Mayor Nirenberg asked how the recommended rate of replacement would be increased. Mr. Clouse replied the CIP was a mix of governmental work, water pipeline work, wastewater pipeline work, and then the major plants. The significant work over the next four years on the Consent Decree would be done, and the spending could then be focused on water delivery pipelines.

Mayor Nirenberg stated that the wastewater collection was on the low end of the range. He inquired about the Consent Decree and when it was scheduled to be completed. Mr. Clouse replied the Consent Decree was a ten-year Consent Decree that started in 2013. Due to some issues around Kelly Air Force Base area, some pipes would need to be relocated. There were some real estate issues associated with Kelly Air Force Base that the Consent Decree contemplated and would allow two additional years. The work would be done either by 2023 or 2025.

Mayor Nirenberg commented on the City’s upcoming 300th anniversary celebration and that San Antonio had some old pipe. He urged staff to push the envelope a little bit and become an industry leader by increasing the rate of replacement. He asked if the use of technology...
was being used outside of the Vista Ridge Integration process and into the total replacement of the system. Mr. Clouse responded this year was the first year the newer water technology was used, and originally was not brought in for Vista Ridge. Once it was put into place, staff realized it was a perfect application for Vista Ridge. Now the program was moving back to what was envisioned in the first place.

Mayor Nirenberg asked that the Board have discussion on infrastructure on a fairly regular basis. Chairman Guerra confirmed. He commented on work in D.C. to help get through Kelly Air Force Base that would save some money. Mr. Burton added that there were regulatory issues and cost issues, but staff was working with our Congressmen. The issue went even beyond the Bexar County delegation; it was a priority both federally and locally.

Mr. Clouse pointed out that because of the timing of the Consent Decree and the deadlines when the work had to be completed, staff was looking at going around the base and continued to look at going through the base. Chairman Guerra inquired about the drop dead date to make a decision. Mr. Clouse replied the drop dead date from the EPA's perspective was January 2019. SAWS perspective was to make decisions in advance of that date to get the reports compiled and pulled together for the EPA by January 2019 so that was probably three months in advance.

Ms. Jasso inquired about the extension of the Consent Decree to 2025. Mr. Clouse responded SAWS would have the option to extend the Consent Decree two years, if the decision was to go around the base.

At this point in the meeting, an Executive Session was held. The time was 10:19 a.m.

25. The Regular Session of the August 1, 2017, Regular Board Meeting is hereby recessed to hold an Executive Session and discuss the matters listed below pursuant to Section §551.071 of the Texas Open Meetings Act.

26. EXECUTIVE SESSION.

C. Deliberation regarding the annual evaluation, performance objectives and duties of the President/Chief Executive Officer; and consultation with attorneys concerning legal matters regarding the annual evaluation, performance objectives and duties of the President/Chief Executive Officer, pursuant to Tex. Gov’t Code §551.074 and §551.071, respectively.

27. The Regular Session of the Regular Board Meeting of August 1, 2017, is hereby reconvened.

The meeting reconvened at 10:48 a.m. The Chairman stated that no decisions were made in Executive Session.

Chairman Guerra stated he would move to Item 28.

28. Deliberation and possible action regarding the compensation for Robert R. Puente,
Chairman Guerra presented Item 28, a compensation package for SAWS CEO, Robert Puente. The item included a five percent salary increase to be effective January 1, 2018, and a bonus of $99,285.71 based on preset goals and objectives that were set and voted upon by each Board Member. He asked Sharon De La Garza to explain the process.

Ms. De La Garza described the process and goals that were established in 2016. Each Board Member weighed in on the goals that were set for Mr. Puente and scored each of those individual goals. Out of a possible $100,000.00 bonus, the bonus was determined at a little over 99 percent as the amount for the overall performance award. The proposed salary adjustment would be voted on today, but would not be implemented until January 1, 2018.

Chairman Guerra commented on some of Mr. Puente’s accomplishments. Mr. Puente steered the Vista Ridge Project last year when it was in major transition, and turned what could have been yet another project failure into a major success story, saving our customers over $500 million. The original projected cost was $3.4 billion, and the project ended up coming in at $2.9 billion. Mr. Puente worked with Texas Commission on Environmental Quality (TCEQ) to avoid a $12 million regulatory requirement, and negotiated with the Edwards Aquifer Authority to obtain $18.6 million over five years to reduce up to 4,500 acre-feet per year in water leaks. He grew our Affordability Programs to over 23,000 people, and solved a major problem with the military bases not having an adequate water supply by securing a grant from the state for $5 million. He commented on the seamless transition of BexarMet, resolving major financial and water crisis without a water rate increase for five years for the BexarMet customers. SAWS had the strongest rating in SAWS history, and there were many more successes and awards won. Mr. Puente more than exceeded our expectations for the 2016 goals, was a role model in our community, and deserved this pat on the back. He thanked Mr. Puente, and called for a motion on Item 28.

Mr. Arrellano made a motion to approve Item 28. Ms. Merritt seconded the motion.

Mayor Nirenberg stated he recognized the metrics used for the CEO’s evaluations put in place by the prior Board that made a commitment to Mr. Puente. He stated he remained deeply troubled by the process and would vote against the bonus. He urged a thorough re-examination of the objectives used in this year’s performance review before applying metrics to future evaluations. He recognized Mr. Puente’s outstanding leadership in the community as well as with municipal utilities nationwide. He asked that a process be put in place to better support the numbers used through salary surveys of the industry as well as transparent metrics used for the public to review. He stated again that Mr. Puente had a great year and hoped he continued his extraordinary leadership to our community.

Chairman Guerra thanked the Mayor for his comments. He understood that the Mayor was not there during the 2016 year, but that he stood behind what Mr. Puente had done and with his recommendation to give the five percent salary adjustment and the bonus. He was proud of what Mr. Puente had done not only for our City, but also what he had done for the Executive Management Team, the entire 1,800 employees, and how he was always ready to serve our community.
Ms. Jasso stated she was totally in support of the motion, and she found the process totally transparent. Whenever she had any kind of questions on any issues, staff immediately reached out to her and explained it. She was impressed by the savings Mr. Puente brought the organization and the model that SAWS was not only across the state but across the nation. She thanked Mr. Puente for his leadership.

Chairman Guerra commented on the Mayor’s request to re-examine the process. He stated he would appoint a compensation task force. As a team, the Board would discuss the goals and objectives for the remainder of the year, and the compensation task force would look to an outside source to assess the value of Mr. Puente’s compensation.

Ms. Merritt stated it was because of good leadership that people stayed on a job as long as they did at SAWS. She added that some of the people who have left SAWS came back because they found out the grass was much greener on this side.

After no further discussion, Item 28 was approved. Guerra, Jasso, Arrellano, Rowe, Merritt, McGee voted in favor and Mayor Nirenberg voted against Item 28. Electronic voting.

At this point in the meeting, an Executive Session was held. The time was 11:00 a.m.

25. The Regular Session of the August 1, 2017, Regular Board Meeting is hereby recessed to hold an Executive Session and discuss the matters listed below pursuant to Section §551.071 of the Texas Open Meetings Act.

26. EXECUTIVE SESSION.
   A. Consultation with attorneys and deliberations regarding security devices or audits pursuant to §551.071 and §551.074 of the Texas Government Code.

27. The Regular Session of the Regular Board Meeting of August 1, 2017, is hereby reconvened.

The meeting reconvened at 11:56 a.m. The Chairman stated that no decisions were made in Executive Session. He moved to Item 21.
ITEMS FOR INDIVIDUAL CONSIDERATION

21. A Resolution awarding a professional services contract to West Monroe Partners, LLC in an amount not to exceed $293,855.00 in connection with Automated Metering Feasibility Analysis and Business Case Development.  

(DOUG EVANSON – SREE PULAPAKA)

Sree Pulapaka present Item 21, the award of professional services for Automated Metering Technology. SAWS manually read more than half a million meters each month. The meters were divided into about 20 billing cycles and were further subdivided into meter routes. Each billing cycle took about three days to complete, and meter reading areas could be up to 80 square miles. He discussed photos that showed examples of the diverse terrain encountered and the disproportionate number of meter reads per cycle.

There was an opportunity to improve the meter reading process and improve operation efficiencies by automating the process with new technology. This would provide superior ratepayer service, and would have a potential cost savings over the years as the technology was implemented. The high impact project would affect not just the way meters were read, but would impact the underlying business in terms of billing at SAWS. It could potentially transform the business operations. As with any project of this magnitude and with this much of an effect, there was some risk associated with it as well. By adopting a phased approach, the risk could be managed and reduced. Additionally, there was a significant potential to collaborate with CPS Energy and leverage a common interest structure that involved a networking in communication equipment. There was also significant opportunity to enhance conservation by implementing this project. This project would enable SAWS to provide real-time leak alerts to reduce the current level of about 14 percent residential water lost due to preventable leaks. SAWS could provide customers with a portal to look at household water usage and be more educated on their water consumption. Conservation staff could provide customers advice based on an analysis of household use.

He reviewed the proposed roadmap that broke the project into three phases. Phase 1 would assess the alternatives and the business case development, and would take about four months. This phase would lead into a second phase called a pilot rollout, and would be a field rollout of actual meters. This would test to make sure all the business processes worked correctly, and would take around one year to complete. Phase 3 would go into a full scale implementation that would take about three to five years to complete. All of these were approximate years, and there had been some variation across the utilities with this technology.

Staff issued an RFP to solicit consulting services on February 17, 2017. The scope of services was to do a strategic assessment and formulation that would define what success meant and to come up with some risk assessment measures. The firm would evaluate the automated solutions and technologies, and provide an assessment of the risk and some strategies to mitigate the risk. The firm would then develop a business case that would include a cost benefit analysis. The firm would have 100 days to complete the scope. Ten firms responded to the RFP, and four were selected for interviews. The companies interviewed were Deloitte Consulting, LLP, EMA, Inc., Exergy Corporation, and West Monroe Partners, LLC. West Monroe Partners, LLC was selected, and the firm’s SMWVB
participation was 20 percent. Staff recommended the award of a professional services contract to West Monroe Partners, LLC, and approval of funds in the amount of $293,855.00 for Phase 1 of the Automated Metering Technology.

Mr. Arrellano made a motion to approve Item 21. Mr. Rowe seconded the motion.

Mr. McGee stated he was in favor of moving forward with this type of exploration. There was a lot of local IT talent in San Antonio. He asked if the scope of the initial phase included collaborating with local talented IT folks to come up with a solution and to engage cyber security assets here in San Antonio. Mr. Pulapaka responded that Phase 1 would go through the automated analysis phases and would look at all these technologies available. This would be an ideal time to engage those local technology firms. Additionally, SAWS was also part of a small collaborative consortium between CPS Energy and Silver Springs Network that was discussing how they had implemented their technologies.

Mr. McGee commented on the opportunity to include local talent in the process of coming up with a solution. Mr. Puente agreed, and stated the local participation was part of the scoring metrics.

Ms. Merritt asked if the City or SAWS could develop an ordinance that would prohibit the meters from being covered. Ms. Belinsky replied she would check to see if there was an ordinance in place with the City that prohibited the interference with the reading of meters or if there was something that could be added.

Mr. Arrellano stated he had been talking about automated meter reading since he had been on the Board. Because it was such a huge project, he asked that the Board have more participation in the process rather than just monthly or quarterly updates.

After no further discussion, Item 21 was unanimously approved. Electronic voting. Mayor Nirenberg was not present for the vote on Item 21.

CAPITAL IMPROVEMENT CONTRACTS

PROJECTS INVOLVING IMPROVEMENTS, EXTENSIONS AND ADDITIONAL CAPACITY

Developer Customer Contracts

7. A Resolution approving Utility Service Agreements to provide water and/or wastewater service to the tracts listed below requiring potential oversizing of mains (OVR), and/or are located outside the San Antonio Water System water and/or wastewater Certificate of Convenience and Necessity (CCN). (ANDREA BEYMER – SAM MILLS)
Sam Mills presented Item 7, the Utility Service Agreements (USA). The three tracts were all within SAWS service area, and none of the tracts were over the recharge zone. The USAs were coming to the Board because of oversizing requirements.

The Masterson Tract was inside the City's ETJ and inside both SAWS water and wastewater CCN. The tract had some fairly significant oversizing to a 24-inch water main. SAWS share was about $4.2 million, and the developer's share was $1.4 million. Staff was also requesting to oversize to a seven-million gallon production facility needed on the west side. SAWS share was $5.1 million for the production facility, and the developer's was $2.3 million. The developer would also get impact fee credits for their share of the work. The tract was not over the recharge zone. The tract would be a phased development. The developer would get a certain number of EDUs before the production facility had to be built. The infrastructure for this tract was also required for the Garcia Tract. The USA was a stand-alone document because it was unknown who would build first, so the participation was applied to each one. He reviewed project maps and proposed infrastructure options for the tract.

The Garcia Tract was right across the street from the Masterson Tract. The tract was inside the City's ETJ, and inside both SAWS water and wastewater CCN. The tract had the same infrastructure requirements and the same oversize ratios, but staff recommended the developer participate in oversizing the sewer main. He reviewed project maps and proposed infrastructure options for the tract.

The CST-Judson Tract was a commercial tract in the city limits and in SAWS water and wastewater CCN. Staff recommended the 12-inch water main to be oversizing to a 16-inch water main. SAWS share was $77,000.00 and the developer’s share was $99,000.00. The tract was not over the recharge zone. The developer was asking for septic systems so there was no SAWS sewer on this particular tract. He reviewed project maps and proposed infrastructure options for the tract.

Staff recommended the approval of the USAs for the Masterson Tract, the Garcia Tract, and the CST-Judson Tract.

Mr. McGee made a motion to approve Item 7. Ms. Merritt seconded the motion.

Ms. Jasso asked if the developer was required to have SAWS wastewater service. Mr. Mills responded the requirements were based on footage. If the developer was within 200 feet of
a sewer main, then a cross benefit analysis was done to see if it would be less expensive to connect to SAWS system or to put in a septic system. In this case, there was not a nearby sewer main to the tract and the tract would be a lower density development.

Mr. Rowe asked how far the tract was from sewer. Mr. Mills replied he would get that information. Ultimately, staff was planning a sewer system out Judson Road. He thought the tract was a couple of miles away, but ultimately SAWS would have something that would cross the tract. At the moment, the connection for the tract would be along Evans Road.

After no further discussion, Item 7 was unanimously approved. Verbal voting. Mayor Nirenberg was not present for the vote on Item 7.

**Water and Sewer Line Improvements**

16. A Resolution awarding a construction contract to Qro Mex Construction Company, Inc. in the amount not to exceed $4,995,569.50 in connection with C5 Culebra – Castroville to Laredo & C28 Zarzamora Creek – San Gabriel to NW 23rd Street, Phase 2 Project. (ANDREA BEYMER – GAIL HAMRICK-PIGG)

Andrea Beymer presented Items 16 – 19 for the Board’s consideration. All of the awards for construction contracts were in support of the SSO program.

Item 16 was the award of a construction contract for the C5 Culebra/Apache Creek project and C28 Zarzamora Creek/San Gabriel to Northwest 23rd Street, Phase 2. Staff recommended the award of a construction contract to Qro Mex Construction Company, Inc. in the amount of $4,995,569.50 in connection with the project.

Item 17 was the award of a construction contract for Broadway Corridor Package B. Staff recommended the award of a construction contract to Oscar Renda Contracting, Inc. in the amount of $15,261,501.00. This project was identified due to condition and capacity. Both this project and the previous project were specifically named within the Consent Decree.

Item 18 was the award of a construction contract for the Early Action Phase 2 Package. Staff recommended the award of a construction contract to Horseshoe Construction, Inc. in the amount of $1,017,299.90. This project was a milestone for SAWS because it was the last of the small diameter condition and remediation contracts required for the Consent Decree.

Item 19 was Phase 4 of the Lift Station Rehabilitation Project. This project would rehab six lift stations. Staff recommended the award of a construction contract to Austin Engineering Company, Inc. in the amount of $3,166,000.00 for Phase 4 of the project.

Mr. McGee made a motion to approve Item 16. Mr. Arrellano seconded the motion.

After no further discussion, Item 16 was unanimously approved. Electronic voting. Mayor Nirenberg was not present for the vote on Item 16.
17. A Resolution awarding a construction contract to Oscar Renda Contracting, Inc., in the amount not to exceed $15,261,501.00 in connection with the C13 Broadway Corridor Project Package B. (ANDREA BEYMER – GAIL HAMRICK-PIGG)

Ms. Merritt made a motion to approve Item 17. Mr. McGee seconded the motion.

After no further discussion, Item 17 was unanimously approved. Electronic voting. Mayor Nirenberg was not present for the vote on Item 17.

18. A Resolution awarding a construction contract to Horseshoe Construction, Inc. in the amount not to exceed $1,017,299.90 in connection with the Early Action Phase 2 Package - 2017 Project. (ANDREA BEYMER – GAIL HAMRICK-PIGG)

Mr. Arrellano made a motion to approve Item 18. Ms. Merritt seconded the motion.

After no further discussion, Item 18 was unanimously approved. Electronic voting. Mayor Nirenberg was not present for the vote on Item 18.

Production, Transmission and Treatment Improvements

19. A Resolution awarding a construction contract to Austin Engineering Company, Inc., in the amount not to exceed $3,166,000.00 in connection with construction of the Lift Stations Rehabilitation - Phase 4 Project. (ANDREA BEYMER – MICHAEL MYERS)

Mr. McGee made a motion to approve Item 19. Ms. Merritt seconded the motion.

Mr. Rowe commented that Item 19 was the only one where the price was over the engineer's estimate. Ms. Beymer confirmed and stated the bid was 5.6 percent over the estimated construction cost.

After no further discussion, Item 19 was unanimously approved. Electronic voting. Mayor Nirenberg was not present for the vote on Item 19.

MISCELLANEOUS ITEMS

20. A Resolution awarding a construction contract to J&P Paving Co., Inc. in an amount not to exceed $1,218,954.25 in connection with the 2017 Bi-Annual Asphalt Overlay Work Order Construction Contract, Package 2. (MIKE BRINKMANN – ALISSA LOCKETT)

Alissa Lockett presented Item 20, the award of the 2017 Bi-Annual Asphalt Overlay Work Order Construction Contract, Package 2. The purpose of the asphalt pavement contracts was to restore the right-of-way after SAWS work. SAWS goal was to put the right-of-way back into great condition so that the community wasn't affected by the work.

The agencies responsible for the right-of-way have certain restoration requirements, and these included City of San Antonio, TxDOT, Bexar County, and some of the suburban cities. The agencies typically required curb to curb mill and overlay for restoration of roadways that
were in good condition. SAWS outsourced specialized work like asphalt paving to outside contractors. The bulk of the pavement restoration was done within the City of San Antonio’s jurisdiction and was governed by the Utility Excavation Criteria Manual. She discussed examples of some of the fees required under the Utility Excavation Criteria Manual that included application and inspection fees. A large project that would last more than 30 days, were charged a tiered fee structure, which started at $60 a day and could go upwards of $150 per day. For example, the Distribution & Collection operations paid about $1 million a year in permit fees from 2015 to 2017 for anywhere between 4,000 and 5,000 permits each year. The manual also had certain inspection and restoration requirements. With respect to the inspection, staff had to coordinate inspection within every work order for backfill and flatwork. Once the City of San Antonio inspector was called, staff had to wait one hour for the inspection and approval of backfill and concrete restoration or flatwork. In terms of restoration when a project impacts the right-of-way, SAWS had to restore within 30 days to avoid a $600 fine. One 15-day extension was available, if needed. Restoration was usually from block to block, curb to curb, especially on a large engineering projects where more than 30 percentage of the roadway was impacted and the pavement condition index (PCI) was greater than 86. Distribution & Collection operations had a standing variance with the City of San Antonio where block to block restoration was not required, since most of SAWS work was small cuts to the street. However, curb to curb restoration was done when a high PCI was present. She reviewed photos of different streets with varying PCIs. Distribution & Collection and Engineering spent over $6.6 million in 2017 on asphalt paving, and that did not include the in-house patching done for 1,500 to 2,000 work orders. Distribution & Collection spent over $14 million since 2011 in asphalt paving. SAWS estimated that asphalt paving requirements for the Consent Decree would cost over $100 million for all the different projects due to the Utility Excavation Criteria Manual requirements. She discussed photos of the asphalt patch work performed by in-house crews and the mill and overlay work performed by contractor crews.

Work orders would be issued and managed by Distribution & Collection and Construction & Maintenance staff. In 2016, $2.2 million was spent on over 400 work orders. The median cost of a work order was about $4,000.00, which was more than double what the City of San Antonio paid for block to block restoration. These work orders would be charged against the contract for up to two years or until the funds were exhausted. The first contract had to be rebid because the lowest bidder withdrew their bid. The second contract would handle some of the peak during main break season.

She reviewed the bid results. J&P Paving Co., Inc. was the lowest responsible bidder with a bid of $1,218,954.25, and the total SMWVB participation was 100 percent. The low bid was 18.7 percent lower than the engineer's estimated construction cost. J&P Paving Co., Inc. was a subcontractor to Zumwalt, when they started out. They were a local, MBE-Hispanic business and had done a great job working for SAWS. Staff recommended the award of a construction contract to J&P Paving Co., Inc., and funds in the amount of $1,218,954.25 for the construction contract.

Mr. Rowe made a motion to approve Item 20. Mr. McGee seconded the motion.

Mr. McGee asked how much SAWS spent on asphalt each year. Ms. Lockett replied this year was estimated at $6.6 million for the mill and overlay work by outside contractors. The
asphalt patch work by in-house crews was a separate cost.

Mr. McGee asked how much was spent every year on all sources of asphalt and inquired about a potential hedging opportunity with asphalt. Ms. Bailey responded there would also be expenditures related to City projects, but she would need to get that information. Ms. Lockett added that SAWS would try to partner with the City because it would be less expensive to use the City’s contracts. SAWS already used the City's asphalt contracts, some of the actual bulk material contracts.

Mr. Puente responded to Mr. McGee that during briefings to the different council members, Councilman Brockhouse asked for a more thorough explanation about these circumstances. Staff was working with his office and he was working with City staff. One of the option would be to have the City actually do this work on their streets, and SAWS would just reimburse the City. Councilman Brockhouse was willing to lead that charge, get the information, and kind of be our spokesperson at the City level. There were a lot of opportunities to drive some of these costs down.

After no further discussion, Item 20 was unanimously approved. Electronic voting. Mayor Nirenberg was not present for the vote on Item 20.

24. Inquiries of the Board of Trustees for future briefings and/or follow-up action.

Chairman Guerra noted the earlier requests from the Trustees and Mayor. He asked that the first briefing on the general infrastructure be focused on the condition and status of the former BexarMet system to include the remaining infrastructure condition, how financial and water problems were resolved, and more details about the integration of the employees into the System.

29. Adjournment. THE SAN ANTONIO WATER SYSTEM BOARD OF TRUSTEES MEETING OF AUGUST 1, 2017, IS HEREBY ADJOURNED.

The San Antonio Water System Board of Trustees Meeting of August 1, 2017, adjourned at 12:32 p.m.

________________________________________
Berto Guerra, Jr., Chairman

ATTEST:

_______________________________________
Ernesto Arrellano, Jr., Secretary
TO: San Antonio Water System Board of Trustees  
FROM: Robert R. Puente, President/Chief Executive Officer  
SUBJECT: Acceptance of Bids for Services, Equipment, Materials and Supplies  

The attached resolution accepts bids and awards contracts for services, equipment and supplies as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>This Board Meeting</th>
<th>Year-to-Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Award of New One Time Purchases of Materials, Equipment or Services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Contracts</td>
<td>(SMWB)</td>
<td>Estimated Amount (SMWB)</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>571,740.80</td>
</tr>
<tr>
<td>B. Award of New and Renewal of Annual Goods &amp; Services Requirements Contracts and Maintenance Agreements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Contracts</td>
<td>(SMWB)</td>
<td>Estimated Amount (SMWB)</td>
</tr>
<tr>
<td>7</td>
<td>2</td>
<td>1,114,174.56</td>
</tr>
<tr>
<td>12</td>
<td>2</td>
<td>$1,685,915.36</td>
</tr>
</tbody>
</table>

SMWB Purchasing Contracts (percentage)  

<table>
<thead>
<tr>
<th>Description</th>
<th>This Board Meeting</th>
<th>Year-to-Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16.67%</td>
<td>27.56%</td>
</tr>
</tbody>
</table>

Approved:  

Robert R. Puente  
President/Chief Executive Officer  

Reviewed:  

Marisol V. Robles  
SMWB Program Manager
RESOLUTION NO.

OF THE SAN ANTONIO WATER SYSTEM BOARD OF TRUSTEES ACCEPTING BIDS AND AWARDING CONTRACTS FOR THE PROCUREMENT OF CERTAIN SERVICES, EQUIPMENT, MATERIALS AND SUPPLIES; AUTHORIZING EXPENDITURES TO PROCURE THE SAID SERVICES, EQUIPMENT, MATERIALS AND SUPPLIES; AUTHORIZING THE DIRECTOR OF THE PURCHASING DIVISION, OR HER DESIGNEE, TO EXECUTE DOCUMENTS RELATED THERETO; FINDING THE RESOLUTION TO HAVE BEEN CONSIDERED PURSUANT TO THE LAWS GOVERNING OPEN MEETINGS; PROVIDING A SEVERABILITY CLAUSE; AND ESTABLISHING AN EFFECTIVE DATE

WHEREAS, the Director of the Purchasing Division of the San Antonio Water System (the “System”) has recommended certain bids be accepted, that certain contracts be awarded, and that certain other actions be taken to procure services, equipment, materials and supplies which are necessary for the operation of the System; and

WHEREAS, the said recommendations are fully set out in "Attachment I" which is attached hereto and made a part hereof, and said recommendations have been approved by the System’s President/Chief Executive Officer; and

WHEREAS, the appropriate bidding procedures regarding the procurement of goods and services have been adhered to in the compiling of the attached recommendations, as reflected in administrative records supporting this resolution; and

WHEREAS, funds are available in the System’s budget to pay for the required services, equipment, materials and supplies; and

WHEREAS, the Board of Trustees of the San Antonio Water System desires (i) to accept the bids and award the contracts as recommended, (ii) to authorize from available funds of the System the expenditures necessary to carry out the recommended procurements, and (iii) to authorize the Director of the Purchasing Division or her designee to execute all contracts and other documents necessary to carry out the recommended procurements; now, therefore:

BE IT RESOLVED BY THE SAN ANTONIO WATER SYSTEM BOARD OF TRUSTEES:

1. That the bids are accepted and the contracts are awarded for procurement of the services, equipment, materials and supplies listed in Attachment I, as recommended by the Director of the Purchasing Division.

2. That the expenditure of the necessary funds from the appropriate budget fund of the System for the procurement of the said services, equipment, materials and supplies is hereby authorized.
3. That the Director of the Purchasing Division, or her designee, is hereby authorized to notify bidders of the acceptance of bids, to execute contracts and other documents, and to carry out all other actions necessary to procure the said services, equipment, materials and supplies.

4. It is officially found, determined and declared that the meeting at which this resolution is adopted was open to the public, and that public notice of the time, place and subject matter of the public business to be conducted at such meeting, including this resolution, was given to all as required by the Texas Codes Annotated, as amended, Title 5, Chapter 551, Government Code.

5. If any part, section, paragraph, sentence, phrase or word of this resolution is for any reason held to be unconstitutional, illegal, inoperative or invalid, or if any exception to or limitation upon any general provision herein contained is held to be unconstitutional, illegal, invalid or ineffective, the remainder of this resolution shall nevertheless stand effective and valid as if it had been enacted without the portion held to be unconstitutional, illegal, invalid or ineffective.

6. This resolution becomes effective immediately upon its passage.

PASSED AND APPROVED this the 10th day of October, 2017

Berto Guerra, Jr., Chairman

ATTEST:

Ernesto Arrellano, Jr., Secretary
Award of New One Time Purchases of Materials, Equipment or Services

A. The following items will establish price and delivery for the one time purchase of Materials, Equipment and Services. These items are included in the current budget. Payment will be made from the applicable fund.

<table>
<thead>
<tr>
<th>VENDOR</th>
<th>DESCRIPTION</th>
<th>ITEM NO(s.)</th>
<th>ESTIMATED TOTAL PURCHASES</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Alsay, Incorporated</td>
<td>Well Plugging Services of SAWS Saline Monitor Wells Bid No. 17-17080</td>
<td>All</td>
<td>$ 61,750.00</td>
<td>This is a one time purchase of Well Plugging Services for Water Quality/Resource Protection. These are System saline monitor wells that are no longer being used and have been abandoned to well conditions.</td>
</tr>
<tr>
<td>2. Dealers Electrical Supply</td>
<td>One Time Purchase of SCADA Equipment Bid No. 17-17084</td>
<td>All</td>
<td>$ 94,513.80</td>
<td>This is a one time purchase of SCADA Equipment. This SCADA Equipment is used on the system water and wastewater to control, monitor and record the systems assets and equipment directly or remotely.</td>
</tr>
<tr>
<td>3. Saitech, Inc.</td>
<td>One Time Purchase of VMware Equipment and Support Bid No. 17-17052</td>
<td>All</td>
<td>$ 96,192.00</td>
<td>This is a one time purchase of VMware Equipment and Support for virtual server environment for System SCADA systems. This will allow System to update existing antiquated SCADA infrastructure as well as allow for centralized administration of the SCADA environment.</td>
</tr>
<tr>
<td>4. Valve Industries, Inc.</td>
<td>One Time Purchase of Automatic Valve Shutoff Control Panels and Chlorine Cylinder Shutoff Valves Phase 2 Bid No. 17-17093</td>
<td>All</td>
<td>$ 236,725.00</td>
<td>This is a one time purchase of an automatic valve shutoff control panels and chlorine cylinder shutoff valves. These control panels and shutoff valves are used on the chlorine system for our water and wastewater facilities.</td>
</tr>
</tbody>
</table>

*Indicates vendor is an SMWB, unless otherwise noted vendor is non minority.

DIRECTOR Comments

The Local Government Purchasing Cooperative (BuyBoard) solicited Request for Proposals. The contract allows cooperative members to request for a better discount than the base discount of 10% and we were able to get approximately a 34% discount. Recommend Award.

Board Date: October 10, 2017
Award of New One Time Purchases of Materials, Equipment or Services

A. The following items will establish price and delivery for the one time purchase of Materials, Equipment and Services. These items are included in the current budget. Payment will be made from the applicable fund.

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<tbody>
<tr>
<td>5. Grainger</td>
<td>One Time Purchase of Generators (BuyBoard 501-15) Bid No. 17-17102</td>
<td>All</td>
<td>$82,560.00</td>
<td>This is a one time System purchase for Generators to support the Broadband Optimization Project for IS. Purchase is in accordance with the Local Government Purchasing Cooperative or BuyBoard Contract No. 501-15 for Building Maintenance, Repair &amp; Operations Supplies and Equipment.</td>
</tr>
</tbody>
</table>

$571,740.80

*Indicates vendor is an SMWB, unless otherwise noted vendor is non minority.
**Award of New and Renewal Annual Goods & Services Requirement Contracts and Maintenance Agreements**

**B.** The following items will establish estimated quantities, unit price and delivery for the Service and Supply Contracts and their extensions. These items are included in the current budget. Payment will be made from the applicable fund. Estimated annual purchase is based on unit price bid; actual total and quantities, may vary from the estimate.

<table>
<thead>
<tr>
<th>VENDOR</th>
<th>DESCRIPTION</th>
<th>NO(s.)</th>
<th>PURCHASES</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Safety Supply, Inc. (SBE)</td>
<td>Annual Contract for Plastic Barricades &amp; Traffic Control Devices Bid No. 17-0009</td>
<td>All</td>
<td>$99,514.20</td>
<td>This is a new contract. This contract will be utilized by the System warehouse for the purchase of plastic barricades and traffic control devices to provide for street and lane closures and control traffic flow direction for the System work crews on an as needed basis. This contract will be effective Date of Award (October 10, 2017) through September 30, 2018. If determined that an extension is favorable to System, price and service considered, the award includes the availability of four (4) additional one-year options to extend as provided for and approved in future year's budgets.</td>
</tr>
<tr>
<td>2. Jet-Vac Equipment Co., LLC</td>
<td>Annual Contract for Sewer Cleaning Tools Bid No. 17-1034</td>
<td>All</td>
<td>$52,843.00</td>
<td>This is a new contract. This contract will be utilized by the System for the purchase of Sewer Cleaning Tools on an as needed basis. These various tools will be used by System combine units in support of our sewer cleaning process. This contract will be effective Date of Award (October 10, 2017) through September 30, 2018. If determined that an extension is favorable to System, price and service considered, the award includes the availability of four (4) additional one-year options to extend as provided for and approved in future year's budgets.</td>
</tr>
<tr>
<td>3. Fortiline</td>
<td>Annual Contract for Reduced-Wall Resilient Seated Gate &amp; Tapping Valves Bid No. 17-0013</td>
<td>All</td>
<td>$575,112.00</td>
<td>This is a new contract. This contract will be utilized by System for the purchase of reduced-wall resilient seated gate and tapping valves on an as needed basis to be used by maintenance crews for water and wastewater line repairs. This contract will be effective Date of Award (October 10, 2017) through September 30, 2018. If determined that an extension is favorable to System, price and service considered, the award includes the availability of four (4) additional one-year options to extend as provided for and approved in future year's budgets.</td>
</tr>
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Board Date: October 10, 2017
**Award of New and Renewal Annual Goods & Services Requirement Contracts and Maintenance Agreements**

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<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Shelton Presort, Inc. (WBE)</td>
<td>Annual Contract for Presort Mail Service</td>
<td>All</td>
<td>$ 69,380.36</td>
<td>This is a new contract. This contract will be utilized to provide System with pick-up and delivery services for System billing statements, special projects to include postage and fees and other presorted metered mail. This contract will be effective Date of Award (October 10, 2017) through September 30, 2018. If determined that an extension is favorable to System, price and service considered, the award includes the availability of three (3) additional one-year options to extend as provided for and approved in future year's budgets.</td>
</tr>
<tr>
<td>5. Environmental Options, Inc.</td>
<td>Annual Contract for Hazardous Waste Operations and Emergency Response (Hazwoper) Training</td>
<td>All</td>
<td>$ 150,000.00</td>
<td>This is a new contract. This contract will be utilized to provide System employees on how to respond to incidental releases of hazardous chemical such as: gaseous-chlorine, sulfur dioxide, nitrogen and carbon dioxide; liqueous sulfuric acid, antiscalant, sodium hydroxide, sodium bisulfide and solid calcium carbonate, citric acid. This contract will be effective Date of Award (October 10, 2017) through September 30, 2018. If determined that an extension is favorable to System, price and service considered, the award includes the availability of three (3) additional one-year options to extend as provided for and approved in future year's budgets.</td>
</tr>
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Board Date: October 10, 2017
Award of New and Renewal Annual Goods & Services Requirement Contracts and Maintenance Agreements

B. The following items will establish estimated quantities, unit price and delivery for the Service and Supply Contracts and their extensions. These items are included in the current budget. Payment will be made from the applicable fund. Estimated annual purchase is based on unit price bid; actual total and quantities, may vary from the estimate.

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<th>DESCRIPTION</th>
<th>NO(s)</th>
<th>PURCHASES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ancira Motor Co., Inc.</td>
<td>Annual Contract for Chrysler, Dodge, Plymouth and Jeep Light Duty Vehicles</td>
<td>All</td>
<td>$88,125.00</td>
</tr>
<tr>
<td></td>
<td>Parts and Service</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bid No. 17-0194</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DIRECTOR Comments

Thirteen vendors were invited to bid, but only one bid was received from Environmental Options Inc. Vendors are offering classes online as an alternative to training onsite as cost for lodging and travel have increased. Unfortunately, System doesn’t allow for online training as employees will require field training and/or hands-on application, demonstration, and performance evaluations that are specifically created for System. This is done to ensure safety concerns are brought forward and addressed to qualified training instructors during training. Price is in line with what we would expect to pay for training. Recommend award.

This is a new contract. This contract will be utilized for the purchase of Chrysler, Dodge and Jeep Parts and Service for passenger cars and light duty vehicles. This contract will be effective Date of Award (October 10, 2017) through September 30, 2018. If determined that an extension is favorable to System, price and service considered, the award includes the availability of three (3) additional one-year options to extend as provided for and approved in future year’s budgets.

DIRECTOR Comments

The bid was issued to all local dealerships. Only one bid was received from Ancira Motor Company. Ancira is offering a 25% markup from dealer cost for parts which is consistent with previous bids and labor rate of $112/hr is below other rates for similar services. Recommend award.

*Indicates vendor is an SMWB unless otherwise noted vendor is non minority.

Board Date: October 10, 2017
Award of New and Renewal Annual Goods & Services Requirement Contracts and Maintenance Agreements

B. The following items will establish estimated quantities, unit price and delivery for the Service and Supply Contracts and their extensions. These items are included in the current budget. Payment will be made from the applicable fund. Estimated annual purchase is based on unit price bid; actual total and quantities, may vary from the estimate.

B. VENDOR DESCRIPTION NO(s.) PURCHASES REMARKS
7. Freedom Chevrolet Annual Contract for GM and Chevrolet Cars and Light Duty Vehicle Parts and Service Bid No. 17-1057 All $ 79,200.00 This is a new contract. This contract will be utilized for GM and Chevrolet Cars and Light Duty Vehicle Parts and Service for passenger cars and light duty vehicles. This contract will be effective Date of Award (October 10, 2017) through September 30, 2018. If determined that an extension is favorable to System, price and service considered, the award includes the availability of three (3) additional one-year options to extend as provided for and approved in future year's budgets.

DIRECTOR Comments

The bid was issued to all local dealerships. Two bids were received, however one bid could not provide the services, only parts. This bid was deemed to be non-responsive as all items were not bid on. The other bid was received from Freedom Chevrolet. Freedom Chevrolet is offering a 9% mark-up from Dealer cost on parts which is consistent with previous bids and the labor rate of $96.00/hour is within the range of other rates for similar service. Recommend award.

$ 1,114,174.56

*Indicates vendor is an SMWB unless otherwise noted vendor is non minority.
## SAN ANTONIO WATER SYSTEM

P. O. BOX 2449  
SAN ANTONIO, TEXAS  78298-2449  

**TABULATION OF BIDS**

**PROPOSAL FOR:** Plugging of SAWS Saline Monitor Wells  
**TIME & DATE:** 3:00 p.m., August 9, 2017

<table>
<thead>
<tr>
<th>ITEM NO</th>
<th>DESCRIPTION AND APPROXIMATE QUANTITY</th>
<th>UNIT</th>
<th>PRICE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1</td>
<td>Mobilization/Demobilization (includes all three sites)</td>
<td>1 LS</td>
<td>4,000.00</td>
<td>4,100.00</td>
</tr>
<tr>
<td>A-1</td>
<td>Remove and dispose of head works</td>
<td>1 LS</td>
<td>750.00</td>
<td>1,270.00</td>
</tr>
<tr>
<td></td>
<td>40 ea. 38 sacks of Class A Cement</td>
<td></td>
<td>350.00</td>
<td>320.00</td>
</tr>
<tr>
<td></td>
<td>Remove Electrical Equipment</td>
<td>1 ea.</td>
<td>100.00</td>
<td>5,920.00</td>
</tr>
<tr>
<td></td>
<td>Remove Sealing block and casing 5' below grade</td>
<td>1 LS</td>
<td>1,500.00</td>
<td>1,300.00</td>
</tr>
<tr>
<td></td>
<td>Site Restoration</td>
<td></td>
<td>900.00</td>
<td>7,200.00</td>
</tr>
<tr>
<td>A-2</td>
<td>Remove and dispose of head works</td>
<td>1 LS</td>
<td>750.00</td>
<td>1,270.00</td>
</tr>
<tr>
<td></td>
<td>40 ea. 38 sacks of Class A Cement</td>
<td></td>
<td>350.00</td>
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</tr>
<tr>
<td></td>
<td>Site Restoration</td>
<td></td>
<td>900.00</td>
<td>7,200.00</td>
</tr>
<tr>
<td>A-3</td>
<td>Remove and dispose of head works</td>
<td>1 LS</td>
<td>750.00</td>
<td>1,270.00</td>
</tr>
<tr>
<td></td>
<td>40 ea. 38 sacks of Class A Cement</td>
<td></td>
<td>350.00</td>
<td>320.00</td>
</tr>
</tbody>
</table>

*Note: The table above lists the units, prices, and totals for each item included in the proposal for plugging of SAWS Saline Monitor Wells.*
SAN ANTONIO WATER SYSTEM
P. O. BOX 2449
SAN ANTONIO, TEXAS 78298-2449
TABULATION OF BIDS

Plugging of SAWS Saline Monitor Wells
3:00 p.m., August 9, 2017

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION AND APPROXIMATE QUANTITY</th>
<th>UNIT PRICE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ea.</td>
<td>Remove Electrical Equipment</td>
<td>100.00</td>
<td>5,920.00</td>
</tr>
<tr>
<td>1 LS</td>
<td>Remove Sealing block and casing 5’ below grade</td>
<td>1,500.00</td>
<td>1,300.00</td>
</tr>
<tr>
<td>1 LS</td>
<td>Site Restoration</td>
<td>900.00</td>
<td>7,200.00</td>
</tr>
<tr>
<td>90 ea.</td>
<td>Additional sacks of Class A Cement</td>
<td>60.00</td>
<td>5,400.00</td>
</tr>
<tr>
<td>1 ea.</td>
<td>Traffic Safety Plan Equipment/Installation/Personnel</td>
<td>600.00</td>
<td>3,000.00</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL</strong></td>
<td><strong>61,750.00</strong></td>
<td><strong>97,970.00</strong></td>
</tr>
</tbody>
</table>

Terms: 2% Net

Delivery Days: 10 days 30 days

LOW BIDDER

BIDS WERE E-MAILED TO AND/OR PICKED UP BY:

Alsay Inc.
Andrews Foster
AWW Tech
Conhagen
Davenport Drilling
DXP

Layne Peerless Equipment
Layne Pump Solutions
Layne Smith Pump
Layne Weisinger Inc.

Demandstar
SAWS Website
## SAN ANTONIO WATER SYSTEM

P. O. BOX 2449  
SAN ANTONIO, TEXAS 78298-2449

### PROPOSAL

**For:**

- Purchase of SCADA Equipment

**Time & Date:**

- 3:00 p.m., August 9, 2017

### TABULATION OF BIDS

**Purchase of SCADA Equipment**

3:00 p.m., August 9, 2017

<table>
<thead>
<tr>
<th>DESCRIPTION AND APPROXIMATE QUANTITY</th>
<th>ITEM NO.</th>
<th>UNIT</th>
<th>PRICE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>44 ea. 171CBU98091-Momentum CPU</td>
<td>1</td>
<td>UNIT</td>
<td>730.00</td>
<td>32,120.00</td>
</tr>
<tr>
<td>29 ea. Trio JR900-00002EH0- IP Radio</td>
<td>2</td>
<td>UNIT</td>
<td>960.00</td>
<td>27,840.00</td>
</tr>
<tr>
<td>10 ea. 170AD154050-Discrete input module</td>
<td>3</td>
<td>UNIT</td>
<td>345.00</td>
<td>3,450.00</td>
</tr>
<tr>
<td>15 ea. 170AD034000-Discrete output module</td>
<td>4</td>
<td>UNIT</td>
<td>208.00</td>
<td>3,120.00</td>
</tr>
<tr>
<td>10 ea. 170AD053050-Discrete output module</td>
<td>5</td>
<td>UNIT</td>
<td>345.00</td>
<td>3,450.00</td>
</tr>
<tr>
<td>15 ea. 170AD135000-Discrete input module</td>
<td>6</td>
<td>UNIT</td>
<td>218.00</td>
<td>3,270.00</td>
</tr>
<tr>
<td>15 ea. 170AA92100-Analog output module</td>
<td>7</td>
<td>UNIT</td>
<td>630.00</td>
<td>9,450.00</td>
</tr>
<tr>
<td>15 ea. 170AA103000-Differential input module</td>
<td>8</td>
<td>UNIT</td>
<td>630.00</td>
<td>9,450.00</td>
</tr>
<tr>
<td>40 ea. 170XTS00100-Screw terminal</td>
<td>9</td>
<td>UNIT</td>
<td>37.00</td>
<td>1,480.00</td>
</tr>
<tr>
<td>30 ea. RH2B-ULDC24V-24v relay</td>
<td>10</td>
<td>UNIT</td>
<td>9.50</td>
<td>285.00</td>
</tr>
<tr>
<td>30 ea. RH2B-ULAC110-120V-120v relay</td>
<td>11</td>
<td>UNIT</td>
<td>9.96</td>
<td>298.80</td>
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<tr>
<td>60 ea. SH2B-05-relay base</td>
<td>12</td>
<td>UNIT</td>
<td>5.00</td>
<td>300.00</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td>94,513.80</td>
<td>135,783.90</td>
</tr>
</tbody>
</table>

**Terms**

- 1% 30 days  
- 0.5% 10 days  

**Delivery Days**

- 45 days  
- 60 days

*DENOTES LOW BIDDER*

**BIDS WERE E-MAILED TO AND/OR PICKED UP BY:**

- 8A Electric  
- Alaron Supply Co.  
- Anubis Power and Electric  
- Arias Enterprises, Inc.  
- Baytech Supply  
- Belco Supply  
- CB Solutions  
- Consolidated Telecom Service  
- D&R Electric Co.  
- Dealers Electrical Supply  
- ExpoTech USA  
- Firetrol Protection System  
- Global Electric Supply Co.  
- Grainger  
- Graybar  
- Instrumart  
- Mapa Dist.  
- Mead Westvaco  
- Meister Supply  
- Mid-Coast Electric Supply  
- Moore Supply  
- MSC Direct  
- Schneider Electric  
- Silmar Electronics  
- Structure Works  
- Summus Industries  
- TEC Sales  
- Tero Technologies  
- WASSCO Government  
- WESCO  
- Demandstar  
- SAWS Website
## SAN ANTONIO WATER SYSTEM

P.O. BOX 2449
SAN ANTONIO, TEXAS  78298-2449

### TABULATION OF BIDS

<table>
<thead>
<tr>
<th>BID NO.</th>
<th>DESCRIPTION AND APPROXIMATE QUANTITY</th>
<th>UNIT PRICE</th>
<th>QUANTITY</th>
<th>TOTAL PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VMware vSphere 6 Enterprise Plus for 1 processor VMware Inc. - VS6-EPL-C</td>
<td>UNIT PRICE</td>
<td>12 ea.</td>
<td>$2,757.00</td>
</tr>
<tr>
<td></td>
<td>Production Support/Subscription VMware vSphere 6 Enterprise Plus for 1 processor for 1 year VMware Inc. - VS6-EPL-P-SSC-C</td>
<td>UNIT PRICE</td>
<td>60 ea.</td>
<td>$4,729.00</td>
</tr>
<tr>
<td></td>
<td>VMware vCenter Server 6 Standard for vSphere 6 (Per Instance) VMware, Inc. - VC60-STD-C</td>
<td>UNIT PRICE</td>
<td>30 ea.</td>
<td>$1,195.00</td>
</tr>
<tr>
<td></td>
<td>Production Support/Subscription VMware vCenter Server 6 Standard for vSphere 6 (Per Instance) for 1 year VMware Inc. - VC60-STD-P-SSC-C</td>
<td>UNIT PRICE</td>
<td>10 ea.</td>
<td>$11,830.00</td>
</tr>
<tr>
<td>TOTAL</td>
<td>TOTAL</td>
<td>TOTAL PRICE</td>
<td>96,192.00</td>
<td>$9,760.00</td>
</tr>
<tr>
<td>Terms</td>
<td>Net</td>
<td>30 days</td>
<td>Net</td>
<td>30 days</td>
</tr>
<tr>
<td></td>
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<td>Net</td>
<td>30 days</td>
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<td>30 days</td>
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<tr>
<td></td>
<td></td>
<td>30 days</td>
<td>Net</td>
<td>30 days</td>
</tr>
<tr>
<td><em>LOW BIDDER</em></td>
<td></td>
<td>5 days</td>
<td>1 day</td>
<td>7 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 days</td>
<td>2-3 days</td>
<td>3 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30 days</td>
<td>5 days</td>
<td>7-14 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30 days</td>
<td>30 days</td>
<td>30 days</td>
</tr>
</tbody>
</table>

*BID INVITATIONS WERE E-MAILED TO AND/OR PICKED UP BY:

- BIT Direct
- Avid Systems
- Blue Eye Soft Corp.
- Bluetsource
- Centre Technologies
- Cona Solutions Group
- Computer Solutions
- Critical Start LLC
- Dell Marketing
- GovConnection

- Howard Technology Solutions
- Hyperic USA, Inc.
- Lumename
- M&S Technologies
- Optiv Security Inc.
- Presidio
- Saiotech Inc.
- Solid Networks
- Taborda Solutions
- VMware

- Demandstar
- SAWS Website
## SAN ANTONIO WATER SYSTEM
P. O. BOX 2449
SAN ANTONIO, TEXAS 78298-2449

### TABULATION OF BIDS

**Purchase of Automatic Valve Shutoff Control Panels and Chlorine Cylinder Shutoff Valves Phase 2**

**3:00 p.m., August 23, 2017**

<table>
<thead>
<tr>
<th>ITEM NO</th>
<th>DESCRIPTION AND APPROXIMATE QUANTITY</th>
<th>UNIT PRICE</th>
<th>TOTAL</th>
<th>UNIT PRICE</th>
<th>TOTAL</th>
<th>TOTAL</th>
<th>TOTAL</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>15 ea. Automatic Valve Shutoff Control Panel, Robo-Controls P/N RCP002UPS10 or approved equal</td>
<td>5,865.00</td>
<td>87,975.00</td>
<td>5,831.00</td>
<td>87,465.00</td>
<td>6,200.00</td>
<td>93,000.00</td>
<td>6,322.00</td>
</tr>
<tr>
<td>2.</td>
<td>34 ea. Chlorine Cylinder Shutoff Valves; Robo-Controls P/N U150-LD-CL or approved equals</td>
<td>4,375.00</td>
<td>148,750.00</td>
<td>4,348.77</td>
<td>147,858.18</td>
<td>4,600.00</td>
<td>156,400.00</td>
<td>4,578.00</td>
</tr>
</tbody>
</table>

**TOTAL Discount Price** | | | 236,725.00 | | | 235,323.18 | | 249,400.00 | | 250,482.00 | | 243,550.00 | | 262,567.00 |

<table>
<thead>
<tr>
<th>Terms</th>
<th>Net</th>
<th>1% Net</th>
<th>1/2% Net</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery Days</td>
<td>160 days</td>
<td>150 days</td>
<td>120 days</td>
</tr>
</tbody>
</table>

*LOW BIDDER*

**BID INVITATIONS WERE E-MAILED TO AND/OR PICKED UP BY:**

- Alterman, Inc.
- CAPP, Inc.
- EIZ
- Global Treat
- JCS Industries, Inc.
- Macaulay Controls Co.
- Moody Bros.
- Technology International, Inc.
- Valve Industries Inc.
This is a new one-time purchase awarded utilizing the Local Government Purchasing Cooperative, or BuyBoard #501-15. This purchase will be for eight 15 kW Generators and eight Automatic Transfer Switches.

The Local Government Purchasing Cooperative solicited Request for Proposals (RFP) to include the purchase of Building Maintenance, Repair & Operations Supplies and Equipment. The contract allows for purchases to be made by a Cooperative member at any time during the contract term of December 1, 2015 through November 30, 2018. As a Cooperative member we were allowed to request for a better discount than the base discount of 10% proposed, and were able to get approximately a 34% discount. The prices received are as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Qty</th>
<th>BuyBoard Price</th>
<th>Extended Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generac Protector® 15kW Automatic Standby Diesel Generator (120/240V Single-Phase)</td>
<td>8</td>
<td>$9,995.00</td>
<td>$79,960.00</td>
</tr>
<tr>
<td>Generac 100-Amp Outdoor Automatic Transfer Switch w/ Power Management</td>
<td>8</td>
<td>$325.00</td>
<td>$2,600.00</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>$82,560.00</td>
</tr>
</tbody>
</table>

Recommend Award.
# SAN ANTONIO WATER SYSTEM
## P. O. BOX 2449
## SAN ANTONIO, TEXAS 78298-2449
### TABULATION OF BIDS

**PROPOSAL:** Annual Contract for Plastic Barricades and Traffic Control Devices  
**FOR:** Traffic Control Devices  
**TABLE:** (Date of Award through September 30, 2018)  
**DATE:** 3:00 p.m., August 10, 2017

## DESCRIPTION AND AMOUNT (Quantity)

### GROUP 1: BARRICADES

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Model Quoting</th>
<th>Quantity</th>
<th>Unit</th>
<th>Price (Each)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500 ea.</td>
<td>Barriers (plastic) (SAWS #9386) (SAWS minimum order quantity will be 100 units)</td>
<td><strong>SAWS</strong> 1500</td>
<td>1</td>
<td>UNIT</td>
<td>39.63</td>
<td>59,445.00</td>
</tr>
</tbody>
</table>

**Manufacturer & Part No.**

<table>
<thead>
<tr>
<th>Item</th>
<th>Manufacturer &amp; Part No.</th>
<th>MPN/Part No.</th>
<th>Description</th>
<th>Unit Price (Each)</th>
<th>Total Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500 ea.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### GROUP 2: TRAFFIC CONTROL DEVICES

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Model Quoting</th>
<th>Quantity</th>
<th>Unit</th>
<th>Price (Each)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 ea.</td>
<td>Stand Traffic (SAWS #16176) 12.25&quot; x 50&quot; x 47.75&quot;</td>
<td><strong>Traffic Devices</strong></td>
<td>1</td>
<td>UNIT</td>
<td>125.60</td>
<td>139.50</td>
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</tbody>
</table>

**Manufacturer & Part No.**

<table>
<thead>
<tr>
<th>Item</th>
<th>Manufacturer &amp; Part No.</th>
<th>MPN/Part No.</th>
<th>Description</th>
<th>Unit Price (Each)</th>
<th>Total Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 ea.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### GROUP 3: TRAFFIC CONTROL DEVICES

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Model Quoting</th>
<th>Quantity</th>
<th>Unit</th>
<th>Price (Each)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 ea.</td>
<td>Sidewalk Closed 24&quot; x 24&quot; (SAWS #40304) Printed on 7/16&quot; thick corrugated plastic with 3&quot; black lettering on a white reflective background</td>
<td><strong>Traffic Devices</strong></td>
<td>1</td>
<td>UNIT</td>
<td>1,098.00</td>
<td>1,256.00</td>
</tr>
</tbody>
</table>

**Manufacturer & Part No.**

<table>
<thead>
<tr>
<th>Item</th>
<th>Manufacturer &amp; Part No.</th>
<th>MPN/Part No.</th>
<th>Description</th>
<th>Unit Price (Each)</th>
<th>Total Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 ea.</td>
<td></td>
<td></td>
<td></td>
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</table>

## EXTENSION 1

### EXTENSION 2

### EXTENSION 3

### EXTENSION 4

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Model Quoting</th>
<th>Quantity</th>
<th>Unit</th>
<th>Price (Each)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>25&quot;</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Model Quoting</th>
<th>Quantity</th>
<th>Unit</th>
<th>Price (Each)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>25&quot;</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### LOW BIDDER

**BID INVITATIONS WERE E-MAILED TO AND/OR PICKED UP BY:**

- Centerline Supply
- Hwy Tech
- A&W
- American Signal Equipment Co.
- Demandstar
- CMC
- SAW Website
- Comrade, Inc.
- Pathmark Traffic Products
- Roadrunner Traffic Supply
- Royal Martinson
- Safety Equipment, Inc.
- Safety Zone Specialists, Inc.
- Fisher Equipment
- Safety Supply, Inc.
- Granger
SAN ANTONIO WATER SYSTEM  
P. O. BOX 2449  
SAN ANTONIO, TEXAS 78298-2449  
TABULATION OF BIDS  

**Annual Contract for Sewer Cleaning Tools**  
(October 1, 2017 through September 30, 2018)  

**DATE:** 3:00 p.m., August 22, 2017  

<table>
<thead>
<tr>
<th>GROUP</th>
<th>Item Description</th>
<th>Make and Model</th>
<th>UNIT PRICE</th>
<th>TOTAL</th>
<th>Make and Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>15 ea. Cleaning tool versicolor 6 ft max-life MHC 6 w/12 inch bucket, Mfg: Max Life; P/N MHC 6, SAWS #10501</td>
<td>Southland SHC-6</td>
<td>165.00</td>
<td>2,475.00</td>
<td>Southland SHC-6</td>
</tr>
<tr>
<td>2.</td>
<td>10 ea. Cleaning tool versicolor 10 ft max-life MHC 10 w/12 inch bucket, Mfg: Max Life; P/N MHC 10, SAWS #10497</td>
<td>Southland SHC-10</td>
<td>202.00</td>
<td>2,020.00</td>
<td>Southland SHC-10</td>
</tr>
<tr>
<td>3.</td>
<td>4 ea. Cleaning tool versicolor 14 ft max-life MHC 14 w/12 inch bucket, Mfg: Max Life; P/N MHC 14, SAWS #10499</td>
<td>Southland SHC-12</td>
<td>255.00</td>
<td>1,020.00</td>
<td>Southland SHC-12</td>
</tr>
<tr>
<td>4.</td>
<td>5 ea. Cleaning tool versicolor 18 ft max-life MHC 18 w/12 inch bucket, Mfg: Max Life; P/N MHC 18, SAWS #10500</td>
<td>Southland SHC-14</td>
<td>300.00</td>
<td>1,500.00</td>
<td>Southland SHC-14</td>
</tr>
<tr>
<td>5.</td>
<td>3 ea. Cleaning tool versicolor 20 ft max-life MHC 20 w/12 inch bucket, Mfg: Max Life; P/N MHC 20, SAWS #10409</td>
<td>Southland SHC-18</td>
<td>355.00</td>
<td>1,065.00</td>
<td>Southland SHC-18</td>
</tr>
<tr>
<td>6.</td>
<td>7 ea. Cleaning tool versicolor 25 ft max-life MHC 25 w/12 inch bucket, Mfg: Max Life; P/N MHC 25, SAWS #104020</td>
<td>Southland Tools SHC-20</td>
<td>420.00</td>
<td>2,940.00</td>
<td>Southland Tools SHC-20</td>
</tr>
<tr>
<td>7.</td>
<td>12 ea. Shovel west patt spoon 12 ft ash handle oshkosh 2027 Mfg: Oshkosh Master P/N 2027, SAWS #15940</td>
<td>Oshkosh 2027</td>
<td>600.00</td>
<td>7,200.00</td>
<td>Oshkosh 2027</td>
</tr>
<tr>
<td>8.</td>
<td>8 ea. Grabber easy reach 32 in, Mfg: Easyreach; P/N 32RE, SAWS #10503</td>
<td>Same</td>
<td>31.00</td>
<td>248.00</td>
<td>General Wire Easyreach 32RE</td>
</tr>
<tr>
<td>9.</td>
<td>5 ea. Grabber easy reach 601N, Mfg: Easyreach; P/N 60RE, SAWS #10504</td>
<td>Same</td>
<td>54.00</td>
<td>270.00</td>
<td>General Wire Easyreach 60RE</td>
</tr>
</tbody>
</table>

**Note:** Make and Model quoting is based on the model and specifications provided.
### TABULATION OF BIDS

**SAN ANTONIO WATER SYSTEM**

**P. O. BOX 2449**

**SAN ANTONIO, TEXAS 78208-2449**

**PROPOSAL**

**Annual Contract for**

**Sewer Cleaning Tools**

**(October 1, 2017 through September 30, 2018)**

**DATE & TIME:** 3:00 p.m., August 22, 2017

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION AND APPROXIMATE QUANTITY</th>
<th>UNIT PRICE</th>
<th>TOTAL PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.</td>
<td>Grit Catcher 8 in 1/2 moon CVR, used with Fiberglass Poles</td>
<td>$196.00</td>
<td>$180.00</td>
</tr>
<tr>
<td>13.</td>
<td>Guide roller shoe lower shamrock 729A with galv pipes</td>
<td>$1,071.00</td>
<td>$1,155.00</td>
</tr>
<tr>
<td>14.</td>
<td>Hose flex tiger tail 21 in, 34 in long with 3/8 in polyrope</td>
<td>$3,618.75</td>
<td>$3,300.00</td>
</tr>
<tr>
<td>15.</td>
<td>Hose flex tiger tail 3 in 40 in long with 3/8 in polyrope</td>
<td>$3,645.00</td>
<td>$3,300.00</td>
</tr>
<tr>
<td>16.</td>
<td>Guide roller upper manhole aluminum max life TMHR I</td>
<td>$243.00</td>
<td>$237.50</td>
</tr>
<tr>
<td>17.</td>
<td>Grabber easy reach 92 in folding, Mfg: Easyreach; P/N 92RE, SAWS #10505</td>
<td>$70.00</td>
<td>$112.00</td>
</tr>
<tr>
<td>18.</td>
<td>Grit Catcher 10 in 1/2 moon CVR, used with Fiberglass Poles</td>
<td>$203.00</td>
<td>$268.75</td>
</tr>
<tr>
<td>19.</td>
<td>Grit Catcher 12 in 1/2 moon CVR, used with Fiberglass Poles</td>
<td>$246.00</td>
<td>$297.50</td>
</tr>
<tr>
<td>20.</td>
<td>Grit Catcher 15 in 1/2 moon CVR used with Fiberglass Poles</td>
<td>$288.00</td>
<td>$331.25</td>
</tr>
<tr>
<td>21.</td>
<td>Grit Catcher 8 in 1/2 Moon CVR used with 25 Foot Rope</td>
<td>$175.00</td>
<td>$237.50</td>
</tr>
<tr>
<td>22.</td>
<td>Grit Catcher 10 in 1/2 Moon CVR used with 25 Foot Rope</td>
<td>$203.00</td>
<td>$248.75</td>
</tr>
</tbody>
</table>

**J & V Equipment Co., LLC**

**5496 Broad Street**

**Summer, AL 35754**

**Texas Municipal Equipment**

**P.O. Box 121261**

**Arlington, TX 76012**

**Kuntz Equipment & Supply**

**Inc.**

**220 Pasadena Blvd.**

**Pasadena, TX 77503**

**TOTAL QUANTITY**

**TOTAL PRICE**

**GENERAL WEATHER STORE**

**905 Weather Street**

**San Antonio, TX 78209-2449**
## SAN ANTONIO WATER SYSTEM
### P. O. BOX 2449
### SAN ANTONIO, TEXAS 78298-2449
### TABULATION OF BIDS

**Annual Contract for**

**Sewer Cleaning Tools**

(October 1, 2017 through September 30, 2018)

**DATE:** 3:00 p.m., August 22, 2017

### DESCRIPTION AND APPROXIMATE QUANTITY

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION</th>
<th>UNIT PRICE</th>
<th>TOTAL PRICE</th>
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<tbody>
<tr>
<td>2. ca.</td>
<td>Grit Catcher 12IN 1/2 Moon CVR used with 25 Foot Rope</td>
<td>UNIT 236.00</td>
<td>TOTAL 288.00</td>
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<tr>
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<td>Southland DBR-12</td>
<td>Southland Tools DBR-12S</td>
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<tr>
<td>23.</td>
<td>Grit Catcher 15 in 1/2 moon CVR used with Fiberglass Poles</td>
<td>UNIT 260.00</td>
<td>TOTAL 328.50</td>
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<td>Southland DBR-15</td>
<td>Southland Tools DBR-15S</td>
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<td>20 ea.</td>
<td>Extension Proofer Nozzle 6IN 1IN Fix Flex 10LEG 15IN Short</td>
<td>UNIT 180.00</td>
<td>TOTAL 216.00</td>
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<td>Southland S-6</td>
<td>Southland S-6</td>
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<tr>
<td>26.</td>
<td>Extension proofer nozzle 8 in 1 in fix flex 10 leg 15 in long,</td>
<td>UNIT 200.00</td>
<td>TOTAL 220.50</td>
</tr>
<tr>
<td></td>
<td>Make and Model quoting</td>
<td>Southland L-6</td>
<td>Southland S-8</td>
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<td>27.</td>
<td>Extension proofer nozzle 10 in 1 in fix flex 10 leg 15 in long</td>
<td>UNIT 225.00</td>
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<td>Southland L-10</td>
<td>Southland Tools S-10</td>
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<tr>
<td>28.</td>
<td>Extension proofer nozzle 12 in 1 in fix flex 10 leg 15 in long</td>
<td>UNIT 215.00</td>
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<td>Southland Tools S-12</td>
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<td>29.</td>
<td>Extension proofer nozzle 15 in 1 in fix flex 10 leg 15 in long</td>
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<td>Southland Tools S-15</td>
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<td>30.</td>
<td>Rod, sewer 3/8 in x 39 in STL, Mfg: Max Life; P/N MSD398</td>
<td>UNIT 14.00</td>
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<td>Southland STB-17</td>
<td>Southland Tools STB-17</td>
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<td>31.</td>
<td>Rod, sewer 3/8 in x 72 in STL, Black Diamond MSD728</td>
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<td>Southland STB-110</td>
<td>Southland Tools STB-110</td>
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<td>10 ea.</td>
<td>DIE Swage Tool 1 in for aeroquip hose only</td>
<td>UNIT 80.00</td>
<td>TOTAL 120.00</td>
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<td>Make and Model quoting</td>
<td>Same</td>
<td>Shamrock 1.149A</td>
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<tr>
<td>10 st.</td>
<td>DIE Swage Pusher 1 in male</td>
<td>UNIT 60.00</td>
<td>TOTAL 85.00</td>
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<td>Make and Model quoting</td>
<td>Same</td>
<td>Shamrock 16P</td>
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</table>

**SAN ANTONIO WATER SYSTEM**

P. O. BOX 2449

SAN ANTONIO, TEXAS 78298-2449

**Texas Municipal Equipment**

P. O. Box 17208

Austin, TX 78760

**Kinlock Equipment & Supply, Inc.**

1320 Pasanella Blvd.

Pasadena, TX 77503
SAN ANTONIO WATER SYSTEM  
P. O. BOX 2449  
SAN ANTONIO, TEXAS 78298-2449  
TABULATION OF BIDS  

PROPOSAL  
FOR  
Sewer Cleaning Tools  
(October 1, 2017 through September 30, 2018)  
DATE:  
3:00 p.m., August 22, 2017  

<table>
<thead>
<tr>
<th>ITEM NO.</th>
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<th>UNIT</th>
<th>PRICE</th>
<th>TOTAL</th>
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</thead>
<tbody>
<tr>
<td>34.</td>
<td>Extension Nozzle 4 Fins 1 in, 13.5 inches, 5000 PSI</td>
<td>Make and Model quoting</td>
<td>12 ea.</td>
<td>Same</td>
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<tr>
<td></td>
<td>Mfg: Southland Tools; P/N FE-41, SAWS #37784</td>
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<td></td>
<td>Same</td>
<td>47.00</td>
<td>592.50</td>
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<td></td>
<td>Same</td>
<td>564.00</td>
<td>711.00</td>
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<tr>
<td>35.</td>
<td>Extension Nozzle Puma 1 in 11 inches, 5000 PSI</td>
<td>Make and Model quoting</td>
<td>12 ea.</td>
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<td>Mfg: Southland Tools; P/N TSE-11, SAWS #37785</td>
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<td></td>
<td>Same</td>
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<td></td>
<td>Same</td>
<td>1,044.00</td>
<td>1,125.00</td>
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<td>36.</td>
<td>Hook Manhole Cover Tool 30 inches Long</td>
<td>Make and Model quoting</td>
<td>100 ea.</td>
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<tr>
<td></td>
<td>Mfg: Max Life; P/N TPOP-30R, SAWS #13131</td>
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<td></td>
<td>Same</td>
<td>27.00</td>
<td>40.00</td>
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<tr>
<td></td>
<td>Same</td>
<td>2,700.00</td>
<td>4,000.00</td>
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</tr>
<tr>
<td></td>
<td>Same</td>
<td>52,843.00</td>
<td>61,449.53</td>
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**LOW BIDDER**

**BID INVITATIONS E-MAILED TO AND/OR PICKED UP BY:**

- Balar Holding
- Cobra Technologies
- Hydra Equipment
- Jet-Vac Equipment Co.
- Kinloch Equipment & Supply
- Pipe Hunter
- Professional Sewer Tools
- Sewer Tools
- SunSource
- Texas Municipal Equipment
- Texas Underground
- Trident Supply

- Demandstar Website
- SAWS Website
## SAN ANTONIO WATER SYSTEM

**P. O. BOX 2449**

**SAN ANTONIO, TEXAS 78298-2449**

**PROPOSAL**

Annual Contract for Reduced-Wall Resilient-Seated Gate and

**KO**

Tapping Valves

**TIME AND PLACE**

(October 1, 2017 through September 30, 2018)

**DATE**

3:00 p.m., August 7, 2017

**ITEM NO.**

DESCRIPTION AND APPARENT QUANTITY

---

### GROUP 1: GATE VALVES, REDUCED-WALL, RESILIENT-SEATED, MJ X MJ

<table>
<thead>
<tr>
<th>Model</th>
<th>Manufacturer</th>
<th>Model</th>
<th>Quantity</th>
<th>Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>FlowMaster</td>
<td>A2361-2500</td>
<td>20 ea.</td>
<td>14,950.00</td>
<td>56,250.00</td>
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<td>A2361-2500</td>
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<td>3.</td>
<td>FlowMaster</td>
<td>A2361-2500</td>
<td>50 ea.</td>
<td>30.200.00</td>
<td>1,510.00</td>
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<td>4.</td>
<td>FlowMaster</td>
<td>A2361-2500</td>
<td>10 ea.</td>
<td>943.00</td>
<td>9,475.00</td>
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<td>A2361-2500</td>
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<td>1,193.00</td>
<td>17,895.00</td>
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<td>6.</td>
<td>FlowMaster</td>
<td>A2361-2500</td>
<td>6 ea.</td>
<td>3,980.00</td>
<td>7,520.00</td>
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<td>7.</td>
<td>FlowMaster</td>
<td>A2361-2500</td>
<td>6 ea.</td>
<td>7,520.00</td>
<td>45,120.00</td>
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### TOTAL FOR GROUP 1

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<th>Quantity</th>
<th>Price</th>
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<tr>
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</table>

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### GROUP 2: GATE VALVES, REDUCED-WALL, RESILIENT-SEATED, MJ X FLANGE

<table>
<thead>
<tr>
<th>Model</th>
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<th>Model</th>
<th>Quantity</th>
<th>Price</th>
<th>Total</th>
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<tbody>
<tr>
<td>1.</td>
<td>Kennedy, Clow</td>
<td>A2361-2500</td>
<td>10 ea.</td>
<td>270.00</td>
<td>2,700.00</td>
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<tr>
<td>2.</td>
<td>FlowMaster</td>
<td>A2361-2500</td>
<td>25 ea.</td>
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<td>178,125.00</td>
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<td>3.</td>
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<td>A2361-2500</td>
<td>25 ea.</td>
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<td>99,725.00</td>
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### TOTAL FOR GROUP 2

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<tbody>
<tr>
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</tr>
</tbody>
</table>
# SAN ANTONIO WATER SYSTEM

**P. O. BOX 2449**

**SAN ANTONIO, TEXAS 78298-2449**

**TABULATION OF BIDS**

## PROPOSAL
Annual Contract for Reduced-Wall Resilient-Seated Gate and Tapping Valves

## FOR:
Tapping Valves

## DATE:
(October 1, 2017 through September 30, 2018)

## TIME:
3:00 p.m., August 7, 2017

### ITEM NO. | DESCRIPTION AND APPROXIMATE QUANTITY | UNIT | PRICE | EACH | UNIT PRICE | EACH | PRICE |
<table>
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<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>4.</td>
<td>8&quot; Gate Valve</td>
<td>UNIT</td>
<td>593.00</td>
<td>14,825.00</td>
<td>Mueller/AFC</td>
<td>Clow</td>
<td>2,361.00</td>
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<td>EACH</td>
<td>1,160.00</td>
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<td>Mueller/AFC</td>
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<tr>
<td>5.</td>
<td>10&quot; Gate Valve</td>
<td>UNIT</td>
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<td>4,715.00</td>
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<td>Mueller/AFC</td>
<td>Clow</td>
<td>2,658.00</td>
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<tr>
<td>6.</td>
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<td>800.00</td>
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<td>7.</td>
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<td>8,000.00</td>
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<tr>
<td>8.</td>
<td>20&quot; Gate Valve</td>
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<td>FlowMaster</td>
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### TOTAL FOR GROUP 2

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<th>UNIT</th>
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### GROUP 3

**GATE VALVES, REDUCED-WALL, RESILIENT-SEATED, FLANGE X FLANGE**

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<th>ITEM NO.</th>
<th>DESCRIPTION AND APPROXIMATE QUANTITY</th>
<th>UNIT</th>
<th>PRICE</th>
<th>EACH</th>
<th>UNIT PRICE</th>
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<th>PRICE</th>
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<td>1.</td>
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<td>UNIT</td>
<td>266.00</td>
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<td>Mueller/AFC</td>
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<td>1,270.00</td>
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<td>Mueller/AFC</td>
<td>Clow</td>
<td>2,532.00</td>
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<tr>
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<td>Model</td>
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<td>FlowMaster</td>
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<td>2.</td>
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<td>FlowMaster</td>
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<td>Clow</td>
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<td>FlowMaster</td>
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<td>9,911.90</td>
<td>Mueller/AFC</td>
<td>Clow</td>
<td>2,361.00</td>
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</table>
## SAN ANTONIO WATER SYSTEM

P. O. BOX 2449
SAN ANTONIO, TEXAS 78298-2449

**TABULATION OF BIDS**

**PROPOSAL**
Annual Contract for Reduced-Wall Resilient-Seated Gate and Tapping Valves

**FOR**

**DATE**
3:00 p.m., August 7, 2017

**ITEM NO.**
DESCRIPTION AND APPROXIMATE QUANTITY

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION AND APPROXIMATE QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>10 ea. 12&quot; Gate Valve Manufacturer Model</td>
</tr>
<tr>
<td></td>
<td>PRICE EACH</td>
</tr>
<tr>
<td></td>
<td>FlowMaster</td>
</tr>
<tr>
<td></td>
<td>Mueller/AFC</td>
</tr>
<tr>
<td></td>
<td>Clow</td>
</tr>
<tr>
<td>7.</td>
<td>6 ea. 16&quot; Gate Valve Manufacturer Model</td>
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<td>PRICE EACH</td>
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<td></td>
<td>FlowMaster</td>
</tr>
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<td></td>
<td>Mueller/AFC</td>
</tr>
<tr>
<td></td>
<td>Clow</td>
</tr>
<tr>
<td>8.</td>
<td>6 ea. 20&quot; Gate Valve Manufacturer Model</td>
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<td>PRICE EACH</td>
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<td>FlowMaster 7561A-20-2638</td>
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<td>Mueller/AFC</td>
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<tr>
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<td>Clow</td>
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**TOTAL FOR GROUP 3**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>TOTAL</th>
<th>UNIT</th>
<th>TOTAL</th>
<th>UNIT</th>
</tr>
</thead>
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<tr>
<td>GATE VALVES, REDUCED-WALL, RESILIENT-SEATED, TAPPING X MJ</td>
<td>160,988.00</td>
<td>165,660.18</td>
<td>171,920.80</td>
<td>608,980.88</td>
</tr>
</tbody>
</table>

**GROUP 4**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>TOTAL</th>
<th>UNIT</th>
<th>TOTAL</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>3&quot; Tapping Valve Manufacturer Model</td>
<td>505.00</td>
<td>339.49</td>
<td>367.78</td>
<td>360.97</td>
</tr>
<tr>
<td>PRICE EACH</td>
<td>5,050.00</td>
<td>3,394.90</td>
<td>3,677.80</td>
<td>3,609.70</td>
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<tr>
<td>Manufacturer</td>
<td>Kennedy/Clow.EJ</td>
<td>A2361-2500</td>
<td>2638</td>
<td>2638</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2638</td>
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**TOTAL FOR GROUP 4**

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<thead>
<tr>
<th>DESCRIPTION</th>
<th>TOTAL</th>
<th>UNIT</th>
<th>TOTAL</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>GATE VALVES, REDUCED-WALL, RESILIENT-SEATED, TAPPING X MJ</td>
<td>160,988.00</td>
<td>165,660.18</td>
<td>171,920.80</td>
<td>608,980.88</td>
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</table>

**GROUP 5**

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<tr>
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<tr>
<td>4&quot; Tapping Valve Manufacturer Model</td>
<td>376.00</td>
<td>384.00</td>
<td>393.09</td>
<td>394.25</td>
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<td>PRICE EACH</td>
<td>9,360.00</td>
<td>9,600.00</td>
<td>9,877.25</td>
<td>9,856.25</td>
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<tr>
<td>Manufacturer</td>
<td>Kennedy/Clow.EJ</td>
<td>A2361-2500</td>
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<tr>
<td>TOTAL</td>
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**TOTAL FOR GROUP 5**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>TOTAL</th>
<th>UNIT</th>
<th>TOTAL</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>GATE VALVES, REDUCED-WALL, RESILIENT-SEATED, TAPPING X MJ</td>
<td>160,988.00</td>
<td>165,660.18</td>
<td>171,920.80</td>
<td>608,980.88</td>
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</table>

**GROUP 6**

<table>
<thead>
<tr>
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<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>6&quot; Tapping Valve Manufacturer Model</td>
<td>530.00</td>
<td>542.18</td>
<td>542.04</td>
<td>556.56</td>
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<tr>
<td>PRICE EACH</td>
<td>13,250.00</td>
<td>13,554.50</td>
<td>13,571.00</td>
<td>13,916.50</td>
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<tr>
<td>Manufacturer</td>
<td>Kennedy/Clow.EJ</td>
<td>A2361-2500</td>
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<tr>
<td>TOTAL</td>
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**TOTAL FOR GROUP 6**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>TOTAL</th>
<th>UNIT</th>
<th>TOTAL</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>GATE VALVES, REDUCED-WALL, RESILIENT-SEATED, TAPPING X MJ</td>
<td>160,988.00</td>
<td>165,660.18</td>
<td>171,920.80</td>
<td>608,980.88</td>
</tr>
</tbody>
</table>

**GROUP 7**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>TOTAL</th>
<th>UNIT</th>
<th>TOTAL</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>8&quot; Tapping Valve Manufacturer Model</td>
<td>787.00</td>
<td>804.76</td>
<td>828.45</td>
<td>826.25</td>
</tr>
<tr>
<td>PRICE EACH</td>
<td>16,975.00</td>
<td>20,119.60</td>
<td>20,711.25</td>
<td>20,656.25</td>
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<tr>
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<td>2638</td>
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<tr>
<td>TOTAL</td>
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**TOTAL FOR GROUP 7**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>TOTAL</th>
<th>UNIT</th>
<th>TOTAL</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>GATE VALVES, REDUCED-WALL, RESILIENT-SEATED, TAPPING X MJ</td>
<td>160,988.00</td>
<td>165,660.18</td>
<td>171,920.80</td>
<td>608,980.88</td>
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</table>

**GROUP 8**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>TOTAL</th>
<th>UNIT</th>
<th>TOTAL</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>10&quot; Tapping Valve Manufacturer Model</td>
<td>1,197.00</td>
<td>1,201.49</td>
<td>1,249.24</td>
<td>1,246.03</td>
</tr>
<tr>
<td>PRICE EACH</td>
<td>7,182.00</td>
<td>7,208.94</td>
<td>7,495.44</td>
<td>7,476.18</td>
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<tr>
<td>Manufacturer</td>
<td>Kennedy/Clow.EJ</td>
<td>A2361-2500</td>
<td>2638</td>
<td>2638</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2638</td>
<td>2638</td>
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**TOTAL FOR GROUP 8**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>TOTAL</th>
<th>UNIT</th>
<th>TOTAL</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>GATE VALVES, REDUCED-WALL, RESILIENT-SEATED, TAPPING X MJ</td>
<td>160,988.00</td>
<td>165,660.18</td>
<td>171,920.80</td>
<td>608,980.88</td>
</tr>
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**GROUP 9**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>TOTAL</th>
<th>UNIT</th>
<th>TOTAL</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>12&quot; Tapping Valve Manufacturer Model</td>
<td>1,790.00</td>
<td>1,833.22</td>
<td>1,887.12</td>
<td>1,882.16</td>
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<tr>
<td>PRICE EACH</td>
<td>10,740.00</td>
<td>10,999.32</td>
<td>11,322.72</td>
<td>11,292.96</td>
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<td>Manufacturer</td>
<td>Kennedy/Clow.EJ</td>
<td>A2361-2500</td>
<td>2638</td>
<td>2638</td>
</tr>
<tr>
<td>TOTAL</td>
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**TOTAL FOR GROUP 9**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>TOTAL</th>
<th>UNIT</th>
<th>TOTAL</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>GATE VALVES, REDUCED-WALL, RESILIENT-SEATED, TAPPING X MJ</td>
<td>160,988.00</td>
<td>165,660.18</td>
<td>171,920.80</td>
<td>608,980.88</td>
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</tbody>
</table>

**GROUP 10**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>TOTAL</th>
<th>UNIT</th>
<th>TOTAL</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 ea. 16&quot; Tapping Valve Manufacturer Model</td>
<td>4,649.00</td>
<td>4,444.31</td>
<td>4,913.47</td>
<td>4,489.20</td>
</tr>
<tr>
<td>PRICE EACH</td>
<td>18,596.00</td>
<td>17,777.24</td>
<td>19,653.88</td>
<td>17,956.80</td>
</tr>
<tr>
<td>Manufacturer</td>
<td>Kennedy/Clow.EJ</td>
<td>A2361-2500</td>
<td>2638</td>
<td>2638</td>
</tr>
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<td>TOTAL</td>
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**TOTAL FOR GROUP 10**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>TOTAL</th>
<th>UNIT</th>
<th>TOTAL</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>GATE VALVES, REDUCED-WALL, RESILIENT-SEATED, TAPPING X MJ</td>
<td>160,988.00</td>
<td>165,660.18</td>
<td>171,920.80</td>
<td>608,980.88</td>
</tr>
</tbody>
</table>
## SAN ANTONIO WATER SYSTEM
P. O. BOX 2449
SAN ANTONIO, TEXAS  78298-2449

**TABULATION OF BIDS**

**PROPOSAL**
Annual Contract for Reduced-Wall Resilient-Seated Gate and Tapping Valves (October 1, 2017 through September 30, 2018)

**DATE**
3:00 p.m., August 7, 2017

<table>
<thead>
<tr>
<th>ITEM NO</th>
<th>DESCRIPTION AND APPROXIMATE QUANTITY</th>
<th>Manufacturer</th>
<th>Model</th>
<th>UNIT PRICE</th>
<th>TOTAL PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>4 ea. 20&quot; Tapping Valve</td>
<td>Fortiline</td>
<td>7950-20-2638</td>
<td>9,150.00</td>
<td>36,600.00</td>
</tr>
<tr>
<td>Item</td>
<td>30&quot; Tapping Valve</td>
<td>HD Supply Waterworks, Ltd.</td>
<td>A2361-2500</td>
<td>8,655.46</td>
<td>34,621.84</td>
</tr>
<tr>
<td>Item</td>
<td>40&quot; Tapping Valve</td>
<td>EJ.Kennedy,Clow</td>
<td>2638</td>
<td>9,850.50</td>
<td>39,402.00</td>
</tr>
<tr>
<td>Item</td>
<td>60&quot; Tapping Valve</td>
<td>Mueller/AFC</td>
<td>2361</td>
<td>125,691.34</td>
<td>575,112.00</td>
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</tbody>
</table>

**TOTAL FOR GROUP 4**

<table>
<thead>
<tr>
<th>Terms</th>
<th>Delivery Days</th>
<th>LOW BIDDER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net 30 days</td>
<td>20 days</td>
<td>*LOW BIDDER</td>
</tr>
</tbody>
</table>

**BIDS MAILED EMAILED TO AND/OR PICKED UP BY:**

- Act Pipe & Supply
- AY McDonald
- Cohen Pipe
- Corvus
- Ferguson Water Works
- Fortiline
- Gajeske
- HD Supply Waterworks
- Hydro Solutions
- KLP Commercial
- MS Techline Pipe
- Scruggs Co.

**DATE:** August 7, 2017
**SAN ANTONIO WATER SYSTEM**  
P. O. BOX 2449  
SAN ANTONIO, TEXAS 78298-2449

**TABULATION OF BIDS**

**Annual Contract for Presort Mail Services**  
(Date of Award through September 31, 2018)

**3:00 p.m., August 22, 2017**

**DESCRIPTION AND APPROXIMATE QUANTITY**

<table>
<thead>
<tr>
<th>ITEM NO</th>
<th>DESCRIPTION AND APPROPRIATE QUANTITY</th>
<th>UNIT PRICE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FIRST &amp; SECOND PRESORT MAIL PICKUP 6,000 ea. Presort Fee, Auto Flats</td>
<td>0.16</td>
<td>960.00</td>
</tr>
<tr>
<td>2</td>
<td>Reject Fee, Auto Flats 620 ea.</td>
<td>0.178</td>
<td>110.36</td>
</tr>
<tr>
<td>3</td>
<td>Presort Fee, Non-Auto Flats 1,000 ea.</td>
<td>0.06</td>
<td>60.00</td>
</tr>
<tr>
<td>4</td>
<td>Presort Fee, Auto Letters 225,000 ea.</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>5</td>
<td>Reject Fee, Auto Letters 40,000 ea.</td>
<td>0.057</td>
<td>2,280.00</td>
</tr>
<tr>
<td>6</td>
<td>Presort Fee Five Digits Auto Letters-Normal rejection amount 200,000 ea.</td>
<td>0.02</td>
<td>4,000.00</td>
</tr>
<tr>
<td>7</td>
<td>Presort Fee Five Digits Auto Letters-Issues with our machine 700,000 ea.</td>
<td>0.02</td>
<td>14,000.00</td>
</tr>
<tr>
<td>8</td>
<td>Postal Chargeback 300 ea.</td>
<td>10.00</td>
<td>3,000.00</td>
</tr>
<tr>
<td>9</td>
<td>Twice daily mail pickup service deliver to USPS 496 ea.</td>
<td>45.00</td>
<td>22,320.00</td>
</tr>
<tr>
<td>10</td>
<td>Postage for special projects 50,000 ea.</td>
<td>0.403</td>
<td>20,150.00</td>
</tr>
<tr>
<td>11</td>
<td>Special project fees 10,000 ea.</td>
<td>0.25</td>
<td>2,500.00</td>
</tr>
</tbody>
</table>

| TOTAL | * | 69,380.36 |

**EXTENSION 1**  
69,380.36

**EXTENSION 2**  
69,380.36

**EXTENSION 3**  
69,380.36

**Terms**  
Net 30 days

**Delivery Days**  
1

*LOW BIDDER*

**BID INVITATIONS E-MAILED TO AND/OR PICKED UP BY:**

- Allegra Marketing
- Blueine Services
- Mailing Systems of TX
- NPI Sorters
- PB Presort Services
- PC Mailing Services

- Pitney Bowes
- Shelton Presort
- Smith Print

- Demandstar
- SAWS Website

**SAN ANTONIO WATER SYSTEM**
P. O. BOX 2449
SAN ANTONIO, TEXAS 78298-2449
Bid No. 17-0366 solicited bids for presort mail service to provide pick-up and delivery services for System billing statements, special projects to include postage and fees and other presorted metered mail. The presort mail service provides a discount on postage for automated bar code, non-zip code, and non-bar coded mail.

Shelton Presort & Mailing is the single responsible bidder for the purchase of Presort mail service.

Thirteen vendors were invited to bid, but only one bid was received from Shelton Presort & Mailing. Historically, there have been only one to two vendors who bid on this contract each time. Cited reasons as to why some of the vendors did not bid are as follows: "cannot be competitive", "do not offer the service requested", and "location".

The bid submitted by Shelton Presort & Mailing meets all the requirements of the specification.

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Unit Price</th>
<th>Extended Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presort Fee, Auto Flats</td>
<td>6,000 each</td>
<td>$0.16</td>
<td>$960.00</td>
</tr>
<tr>
<td>Reject Fee, Auto Flats</td>
<td>620 each</td>
<td>$0.178</td>
<td>$110.36</td>
</tr>
<tr>
<td>Presort Fee, Non-Auto Flats</td>
<td>1,000 each</td>
<td>$0.06</td>
<td>$60.00</td>
</tr>
<tr>
<td>Presort Fee, Auto Letters</td>
<td>225,000 each</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>Reject Fee, Auto Letters</td>
<td>40,000 each</td>
<td>$0.057</td>
<td>$2,280.00</td>
</tr>
<tr>
<td>Presort Fee Five Digits Auto Letters- Normal rejection amount</td>
<td>200,000 each</td>
<td>$0.02</td>
<td>$4,000.00</td>
</tr>
<tr>
<td>Presort Fee Five Digits Auto Letters- Issues with our machine</td>
<td>700,000 each</td>
<td>$0.02</td>
<td>$14,000.00</td>
</tr>
<tr>
<td>Postal Chargeback</td>
<td>300 each</td>
<td>$10.00</td>
<td>$3,000.00</td>
</tr>
<tr>
<td>Twice daily mail pickup service deliver to USPS</td>
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<td>$45.00</td>
<td>$22,320.00</td>
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<tr>
<td>Postage for special projects</td>
<td>50,000 each</td>
<td>$0.403</td>
<td>$20,150.00</td>
</tr>
<tr>
<td>Special projects fees</td>
<td>10,000 each</td>
<td>$0.25</td>
<td>$2,500.00</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>$69,300.36</td>
</tr>
</tbody>
</table>

* The award amount is $69,300.36/ year
### SAN ANTONIO WATER SYSTEM

P. O. BOX 2449
SAN ANTONIO, TEXAS 78298-2449

**TABULATION**

**PROPOSAL**
Annual Contract for Hazardous Waste Operations and Emergency Response (Hazwoper) Training

**FOR:**

**TIME & DATE:**
(Date of Award through July 31, 2018)
3:00 p.m., August 8, 2017

**ITEM NO:**

<table>
<thead>
<tr>
<th>DESCRIPTION AND APPROXIMATE QUANTITY</th>
<th>UNIT PRICE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 100 per student</td>
<td>300.00</td>
<td>30,000.00</td>
</tr>
<tr>
<td>First Responder Awareness Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. 100 per student</td>
<td>300.00</td>
<td>30,000.00</td>
</tr>
<tr>
<td>First Responder Operations Level, Initial</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. 100 per student</td>
<td>600.00</td>
<td>60,000.00</td>
</tr>
<tr>
<td>Operations Level for Occasional Site Workers, Initial</td>
<td></td>
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</tr>
<tr>
<td>4. 100 per student</td>
<td>300.00</td>
<td>30,000.00</td>
</tr>
<tr>
<td>HAZWOPER - Refresher Course</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>150,000.00</strong></td>
</tr>
</tbody>
</table>

**EXTENSION 1**

150,000.00

**EXTENSION 2**

150,000.00

**EXTENSION 3**

150,000.00

**Terms**

Net 30 days

*LOW BIDDER*

**BID INVITATIONS WERE E-MAILED TO AND/OR PICKED UP BY:**

- Environmental Options, Inc.
- Foster Safety
- HazMat Student
- Hazwoper Training
- Laredo Examiners
- Natlenv Trainers
- Proenv Training
- Safety Unlimited
- Teex Education
- UTA

**Environmental Options, Inc.**
P.O. Box 990908
Houston, TX 77299-0908
Bid No. 17-17015 solicited bids to provide System employees on how to respond to incidental releases of hazardous chemicals such as: gaseous - chlorine, sulfur dioxide, nitrogen and carbon dioxide; liqueous - sulfuric acid, antiscalant, sodium hydroxide, sodium bisulfide; and solid - calcium carbonate, citric acid. Contractor will provide “on-site” customized Hazardous Waste Operations and Emergency Response (HAZWOPER) Training as described in 29 CFR 1910.120.

Environmental Options Inc. is the single responsible bidder for the purchase of Hazardous Waste Operations and Emergency Response (HAZWOPER) Training.

Thirteen vendors were invited to bid, but only one bid was received from Environmental Options Inc. Although other vendors do offer classes online, they do not provide training onsite due to the increased cost for lodging and travel. Unfortunately, System doesn’t allow for online training as employees require field training and/or hands-on application, demonstration, and performance evaluations that are specifically created for System. This is done to ensure safety concerns are brought forward and addressed to qualified training instructors during training.

The bid submitted by Environmental Options Inc. meets all the requirements of the specification.

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Unit Price</th>
<th>Extended Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Responder Awareness Level</td>
<td>100 Per Student</td>
<td>$ 300.00</td>
<td>$ 30,000.00</td>
</tr>
<tr>
<td>First Responder Operations Level, Initial:</td>
<td>100 Per Student</td>
<td>$ 300.00</td>
<td>$ 30,000.00</td>
</tr>
<tr>
<td>Operations Level for Occasional Site Workers, Initial</td>
<td>100 Per Student</td>
<td>$ 600.00</td>
<td>$ 60,000.00</td>
</tr>
<tr>
<td>HAZWOPER - Refresher Course</td>
<td>100 Per Student</td>
<td>$ 300.00</td>
<td>$ 30,000.00</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>$ 150,000.00</td>
</tr>
</tbody>
</table>

- The award amount is $150,000.00/ year
SAN ANTONIO WATER SYSTEM  
P. O. BOX 2449  
SAN ANTONIO, TEXAS 78298-2449  
TABULATION OF BIDS  

PROPOSAL:  Annual Contract for Chrysler, Dodge, Plymouth and Jeep  
FOR:  Light Duty Vehicles Parts and Service  
TIME & DATE:  (October 1, 2017 through September 30, 2018)  
3:00 p.m., August 17, 2017  

ITEM NO  DESCRIPTION AND APPROXIMATE QUANTITY  

A. PARTS: CHRYSLER, DODGE AND JEEP - EST. SAWS WILL SPEND $60,000 ON PARTS  
1. Percent markup from dealer cost  
   25%  

    PRODUCT IDENTIFICATION (MF.G.)  
    TYPE PRICE SCHEDULE (DEALER, JOBBER, ETC.)  
    PRICE SCHEDULE NUMBER  
    DATE OF PRICE SCHEDULE  

   2007 Dodge Ram 1500  
   GM Belt Tensioner, Part #53030958AC  
   Wheel Speed Sensor, Part #5032220AC  
   Transmission Filter Gasket, Part #5010884AD  
   Water Pump, Part #53022189AH  
   AC Control Panel, Part #55056754AB  

   2017 Dodge Ram 1500  
   GM Belt Tensioner, Part #5184617AD  
   Wheel Speed Sensor, Part #68170065AE  
   Water Pump, Part #5184498AK  
   AC Control Panel, Part #6826818AA  

   2008 Dodge Nitro 1500  
   GM Belt Tensioner, Part #53030958AG  
   Wheel Speed Sensor, Part #52125003AD  
   Transmission Filter Gasket, Part #5010884AD  
   Water Pump, Part #53022189AH  
   AC Control Panel, Part #55111980AB  

B. LABOR RATE: CHRYSLER, DODGE AND JEEP - EST. SAWS WILL REQUIRE 250 HOURS OF LABOR  
   Est. 250 Hours  
   Labor rate for service  
   TOTAL  

   25%  

<table>
<thead>
<tr>
<th>PARTS</th>
<th>UNIT PRICE EACH</th>
<th>TOTAL EST. PARTS</th>
<th>PRICE PER HOUR</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chrysler</td>
<td>52.81</td>
<td></td>
<td>163.75</td>
<td>136.25</td>
</tr>
<tr>
<td>Jeep-Dodge-Ram</td>
<td>30.56</td>
<td></td>
<td>168.75</td>
<td>136.25</td>
</tr>
<tr>
<td>Dealer</td>
<td>5.81</td>
<td></td>
<td>163.75</td>
<td>136.25</td>
</tr>
</tbody>
</table>

   112.50  

   28,125.00
**SAN ANTONIO WATER SYSTEM**
P. O. BOX 2449
SAN ANTONIO, TEXAS 78298-2449

**TABULATION OF BIDS**

<table>
<thead>
<tr>
<th>ITEM NO</th>
<th>DESCRIPTION AND APPROXIMATE QUANTITY</th>
<th>GRAND TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GRAND TOTAL</td>
<td>88,125.00</td>
</tr>
<tr>
<td></td>
<td>Up-charge for outside labor, cost plus</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>Restocking orders placed (days)</td>
<td>3 days</td>
</tr>
<tr>
<td></td>
<td>Business hours</td>
<td>7:00 AM - 7:00 PM; 8:00 AM - 4:00 PM; 5 days per week</td>
</tr>
<tr>
<td></td>
<td>EXTENSION 1</td>
<td>88,125.00</td>
</tr>
<tr>
<td></td>
<td>EXTENSION 2</td>
<td>88,125.00</td>
</tr>
<tr>
<td></td>
<td>EXTENSION 3</td>
<td>88,125.00</td>
</tr>
<tr>
<td></td>
<td>Terms</td>
<td>Net; 30 days</td>
</tr>
<tr>
<td></td>
<td>Delivery Days</td>
<td>4 days</td>
</tr>
</tbody>
</table>

*LOW BIDDER*

**BID INVITATIONS E-MAILED TO AND/OR PICKED UP BY:**

Ancira Motor Co.
Freedom Dodge Chrysler Jeep
Ingram Park Chrysler Jeep Dodge
Lone Star Chrysler Dodge
North Star Dodge
San Antonio Chrysler Dodge Jeep

Demandstar
SAWS Website
Bid No. 17-0194 solicited bids for Chrysler, Dodge and Jeep parts and service for passenger cars and light duty vehicles.

The bid was issued to all six dealerships in the local area. Only one bid was received from Ancira Motor Company, Inc. Ancira is offering a 25% markup from Dealer cost for parts which is consistent with previous bids and the labor rate of $112.00/hour is below other rates for similar service.

See attached bid tab.

Recommend award of a contract to Ancira Motor Company in the amount of $88,125.
# Proposal

**Annual Contract for GM and Chevrolet Cars and Light Duty Vehicle Parts and Service**  
**Time & Date:**  
**October 1, 2017 through September 30, 2018**  
**Date:** 3:00 p.m., August 17, 2017

## A. Parts GM Chevrolet

**Estimated SAWS will spend $60,000 on parts**

<table>
<thead>
<tr>
<th>NO.</th>
<th>Description</th>
<th>Approximate Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Percent markup from cost</td>
<td>9%</td>
</tr>
</tbody>
</table>

**Labor Rate for Services**

- **1. Labor rate for services** | 96.00 |

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Approximate Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Product identification (Mfg.)</td>
<td>General Motors</td>
</tr>
<tr>
<td>3.</td>
<td>Type price schedule (dealer, jobber, etc.)</td>
<td>Dealer Cost</td>
</tr>
<tr>
<td>4.</td>
<td>Price schedule number</td>
<td>Current Price Tape</td>
</tr>
<tr>
<td>5.</td>
<td>Date of price schedule</td>
<td>Monthly</td>
</tr>
</tbody>
</table>

### 2016 Chevrolet Silverado 1500

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Approximate Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GM Belt Tensioner, Part #12627119</td>
<td>UNIT PRICE EACH 48.20</td>
</tr>
<tr>
<td></td>
<td>Wheel Speed Sensor, Part #94775721</td>
<td>UNIT PRICE EACH 13.35</td>
</tr>
<tr>
<td></td>
<td>Transmission Filter Gasket, Part #24225800</td>
<td>UNIT PRICE EACH 18.30</td>
</tr>
<tr>
<td></td>
<td>Water Pump, Part #12663909</td>
<td>UNIT PRICE EACH 152.49</td>
</tr>
</tbody>
</table>

### 2015 Chevrolet Colorado

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Approximate Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GM Belt Tensioner, Part #12627119</td>
<td>UNIT PRICE EACH 48.20</td>
</tr>
<tr>
<td></td>
<td>Wheel Speed Sensor, Part #94775721</td>
<td>UNIT PRICE EACH 13.35</td>
</tr>
<tr>
<td></td>
<td>Transmission Filter Gasket, Part #24225800</td>
<td>UNIT PRICE EACH 18.30</td>
</tr>
<tr>
<td></td>
<td>Water Pump, Part #12663909</td>
<td>UNIT PRICE EACH 152.49</td>
</tr>
</tbody>
</table>

### 2016 Chevrolet Silverado 1500

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Approximate Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GM Belt Tensioner, Part #12627119</td>
<td>UNIT PRICE EACH 48.20</td>
</tr>
<tr>
<td></td>
<td>Wheel Speed Sensor, Part #94775721</td>
<td>UNIT PRICE EACH 13.35</td>
</tr>
<tr>
<td></td>
<td>Transmission Filter Gasket, Part #24225800</td>
<td>UNIT PRICE EACH 18.30</td>
</tr>
<tr>
<td></td>
<td>Water Pump, Part #12663909</td>
<td>UNIT PRICE EACH 152.49</td>
</tr>
</tbody>
</table>

### B. Labor Rate: GM AND CHEVROLET

**It is estimated that the San Antonio Water System will require 200 hours of labor**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Approximate Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Labor rate for services</td>
<td>96.00</td>
</tr>
</tbody>
</table>
SAN ANTONIO WATER SYSTEM  
P. O. BOX 2449  
SAN ANTONIO, TEXAS 78298-2449  

TABULATION OF BIDS  

PROPOSAL  
FOR:  
GM and Chevrolet Cars and Light Duty Vehicle Parts and Service  
(October 1, 2017 through September 30, 2018)  

DATE: 3:00 p.m., August 17, 2017  

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION AND APPROXIMATE QUANTITY</th>
<th>EXTENSION 1</th>
<th>EXTENSION 2</th>
<th>EXTENSION 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Up-charge for outside labor, cost plus</td>
<td>1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Restocking orders placed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Business hours</td>
<td>7:00 a.m. - 6:00 p.m.</td>
<td>5 days per week</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Business hours weekend</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL LABOR**  
TOTAL: 19,200.00  

**TOTAL PARTS**  
TOTAL: 60,000.00  

**TOTAL PARTS AND LABOR**  
TOTAL: 79,200.00  

**EXTENSION 1**  
79,200.00  

**EXTENSION 2**  
79,200.00  

**EXTENSION 3**  
79,200.00  

Terms  
Net  
30 days  

Delivery Days  
2 days  

BID INVITATIONS MAILED TO AND/OR PICKED UP BY:  
Ancira  
Freedom Chevrolet  
Full Service Auto Parts  
Gunn Chevrolet  
Tom Benson Chevrolet  
Vara Chevrolet  
SAWS Website
Bid No. 17-1057 solicited bids for GMC and Chevrolet parts and services for passenger cars and light duty vehicles.

The bid was issued to all five dealerships in the local area. Two bids were received, however one bid could not provide the services, only parts. This bid was deemed to be non-responsive as all items were not bid on. The other bid was received from Freedom Chevrolet. Freedom Chevrolet is offering a 9% mark-up from Dealer cost on parts which is consistent with previous bids and the labor rate of $96.00/hour is within the range of other rates for similar service.

See attached bid tab.

Recommend award of a contract to Freedom Chevrolet in the amount of $79,200.
TO: San Antonio Water System Board of Trustees
FROM: Gail Hamrick-Pigg, P.E., Director, Pipelines, and Andrea L.H. Beymer, P.E., Vice President, Engineering and Construction
THROUGH: Robert R. Puente, President/Chief Executive Officer
SUBJECT: APPROVAL OF RECAPITULATION CHANGE ORDER NO. 3 IN CONNECTION WITH THE 2015 GOVERNMENTAL WATER AND SEWER CONSTRUCTION PACKAGE II PROJECT

Board Action Date: October 10, 2017

SUMMARY AND RECOMMENDATION:

The attached resolution approves Recapitulation Change Order No. 3 in the decreased amount of $107,369.88 to be credited to the construction contract with Atlas Construction Corporation in connection with the 2015 Governmental Water and Sewer Construction Package II Project.

- The 2015 Governmental Water and Sewer Construction Package II Project with Atlas Construction Corporation in the amount of $2,077,900.00 was authorized by Resolution No. 15-193 on September 1, 2015.

- The 2015 Governmental Water and Sewer Construction Package II Project allowed the San Antonio Water System to construct projects that include the replacement, adjustment, or installation of water and sewer facilities required in connection with another agency’s project including, but not limited to, the City of San Antonio’s Infrastructure Maintenance Program.

- Change Order Nos. 1 and 2 were in amounts that did not require Board approval. The combined total was for a decreased amount of $4.61.

- Following the completion of work assigned to Atlas Construction Corporation and upon reaching the contract expiration date of October 4, 2017, funds in the amount of $107,369.88 were not used.

- Change Order No. 3 recapitulates the construction contract quantities in the decreased amount of $107,369.88 and returns the funds to the Project and closes the contract.

Staff recommends that the Board approve this resolution.
FINANCIAL IMPACT:

This is a capital improvement expenditure that was included in the CY 2015 Capital Improvement Program, Water Delivery and Wastewater Core Business categories, 2015 Governmental Water and Sewer Construction Package II under water job number 15-5021 and sewer job number 15-5521.

The authorizations for this project is as follows:

<table>
<thead>
<tr>
<th>Contract:</th>
<th>Amount Authorized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original Contract Amount (Resolution No.15-193)</td>
<td>$2,077,900.00</td>
</tr>
<tr>
<td>Change Order Nos. 1 and 2</td>
<td>(4.61)</td>
</tr>
<tr>
<td>Proposed Recapitulation Change Order No. 3</td>
<td>(107,369.88)</td>
</tr>
<tr>
<td>Revised Contract Amount</td>
<td>1,970,525.51</td>
</tr>
</tbody>
</table>

**Balance Returned:**

| Total Remaining Balance Returned        | $107,369.88        |

**SUPPLEMENTARY COMMENTS:**

Previous Change Order Nos. 1 and 2 and Recapitulation Change Order No. 3 reflect a 5.17 percent decrease to the original contract amount.

---

Gail Hanrick-Pigg, P.E.  
Director  
Pipelines

Andrea L.H. Béymer, P.E.  
Vice President  
Engineering and Construction

APPROVED:

Robert R. Puente  
President/Chief Executive Officer
RESOLUTION NO.

OF THE SAN ANTONIO WATER SYSTEM BOARD OF TRUSTEES APPROVING RECAPITULATION CHANGE ORDER NO. 3 IN THE DECREASED AMOUNT OF $107,369.88 TO BE CREDITED TO THE CONSTRUCTION CONTRACT WITH ATLAS CONSTRUCTION CORPORATION IN CONNECTION WITH THE 2015 GOVERNMENTAL WATER AND SEWER CONSTRUCTION PACKAGE II PROJECT; AUTHORIZING THE RETURN OF FUNDS IN THE AMOUNT OF $107,369.88 TO THE PROJECT FUND; AUTHORIZING THE PRESIDENT/CHIEF EXECUTIVE OFFICER OR HIS DULY APPOINTED DESIGNEE TO EXECUTE RECAPITULATION CHANGE ORDER NO. 3 AND TO CLOSE THE CONTRACT; FINDING THE RESOLUTION TO HAVE BEEN CONSIDERED PURSUANT TO THE LAWS GOVERNING OPEN MEETINGS; PROVIDING A SEVERABILITY CLAUSE; AND ESTABLISHING AN EFFECTIVE DATE

WHEREAS, the San Antonio Water System (the “System”) has completed the project work under the 2015 Governmental Water and Sewer Construction Package II Project; and

WHEREAS, funds in the amount of $2,077,900.00 for the construction contract with Atlas Construction Corporation were authorized for the project by Resolution No. 15-193 on September 01, 2015; and

WHEREAS, the construction of the work assigned to this contract is now complete; and

WHEREAS, Change Order No. 3 recapitulates the project cost in the decreased amount of $107,369.88; and

WHEREAS, funds in the amount of $107,369.88 are to be returned to the Project Fund; and

WHEREAS, the San Antonio Water System Board of Trustees desires (i) to approve Recapitulation Change Order No. 3 in the decreased amount of $107,369.88 to the construction contract with Atlas Construction Corporation in connection with the 2015 Governmental Water and Sewer Construction Package II Project, (ii) to return the amount of $107,369.88 to the Project Fund, and (iii) to authorize the President/Chief Executive Officer or his duly appointed designee to execute Recapitulation Change Order No. 3 and to close the contract; now, therefore:
BE IT RESOLVED BY THE SAN ANTONIO WATER SYSTEM BOARD OF TRUSTEES:

1. That Recapitulation Change Order No. 3 in the decreased amount of $107,369.88 to the construction contract with Atlas Construction Corporation in connection with the 2015 Governmental Water and Sewer Construction Package II Project is hereby approved.

2. That the amount of $107,369.88 is hereby returned to the Project Fund.

3. That the President/Chief Executive Officer or his duly appointed designee is hereby authorized to execute Recapitulation Change Order No. 3 to the construction contract between the System and Atlas Construction Corporation and to close the contract in connection with the 2015 Governmental Water and Sewer Construction Package II Project.

4. It is officially found, determined and declared that the meeting at which this resolution is adopted was open to the public, and that public notice of the time, place and subject matter of the public business to be conducted at such meeting, including this resolution, was given to all as required by the Texas Codes Annotated, as amended, Title 5, Chapter 551, Government Code.

5. If any part, section, paragraph, sentence, phrase or word of this resolution is for any reason held to be unconstitutional, illegal, inoperative or invalid, or if any exception to or limitation upon any general provision herein contained is held to be unconstitutional, illegal, invalid or ineffective, the remainder of this resolution shall nevertheless stand effective and valid as if it had been enacted without the portion held to be unconstitutional, illegal, invalid, or ineffective.

6. This resolution becomes effective immediately upon its passage.

PASSED AND APPROVED this 10th day of October, 2017.

_________________________________
Berto Guerra, Jr., Chairman

ATTEST:

_________________________________
Ernesto Arrellano, Jr., Secretary
AGENDA ITEM NO. 8

TO: San Antonio Water System Board of Trustees

FROM: Michael L. Myers, P.E., Director, Plants and Major Projects, and Andrea L.H. Beymer, P.E., Vice President, Engineering and Construction

THROUGH: Robert R. Puente, President/Chief Executive Officer

SUBJECT: AWARD OF CONSTRUCTION CONTRACT FOR NACO LIME SLURRY SYSTEM PROJECT

Board Action Date: October 10, 2017

SUMMARY AND RECOMMENDATION:

The attached resolution awards a construction contract to Archer Western Construction, LLC, a non-local, non-SMWVB firm, in the amount of $1,139,900.00 in connection with the Naco Lime Slurry System Project (the “project”).

- The 2017 Capital Improvement Program includes the construction of the Naco Lime Slurry System Project. The project is located within the Naco Pump Station located on Nacogdoches Road just south of O’Connor Road and is adjacent to the Northeast Service Center.

- The Naco Pump Station serves customers in the north-central and northeast parts of San Antonio. It is one of the San Antonio Water System’s (the “System”) major primary pump stations that serves customers in multiple pressure zones.

- An additional source of water was added in 2013 from the Regional Carrizo Project. This water is used to supplement or replace the use of Edwards Aquifer water in the multiple pressure zones served by this station.

- During low demand periods, this project will provide a permanent hydrated lime slurry system at the Naco Pump Station to mitigate the potential for water quality impacts in certain areas of the distribution system due to the introduction of various blends of Carrizo and Edwards Aquifer water supplies.

- The project consists of the installation of a lime slurry system that includes a tank, mixer, pumps, controls, structural foundation, structural containment wall, yard piping, electrical, and Supervisory Control and Data Acquisition to have a complete and fully functional system.

- Bids for the construction of this project have been solicited and Archer Western Construction, LLC, has submitted the low responsible bid of $1,139,900.00.
This project combines three Request for Proposals’ (RFP) from the original Naco Pump Station Improvements Project that the System could not come to agreement with the contractor on pricing. Therefore, it was decided to combine the three RFPs into a new project and advertise.

Staff recommends that the Board approve this resolution.

**FINANCIAL IMPACT:**

The Project Fund will finance this expenditure included in the 2017 Capital Improvements Program. This work is included in the Water Delivery Core Business, Naco Lime Slurry System Project. The total amount is $1,139,900.00 for water related work under job number 17-6007.

**SUPPLEMENTARY COMMENTS:**

Kimley-Horn and Associates, Inc., prepared the plans and specifications for this project under their professional services contract. The engineer’s estimated construction cost was $1,070,000.00.

A bid opening was held on August 31, 2017. The following bids were submitted.

<table>
<thead>
<tr>
<th>BIDDER</th>
<th>BID AMOUNT</th>
<th>LOCAL/SMWVB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineer’s Estimate</td>
<td>$1,070,000.00</td>
<td></td>
</tr>
<tr>
<td>Archer Western Construction, LLC*</td>
<td>$1,139,900.00</td>
<td>Non–Local/Non–SMWVB</td>
</tr>
<tr>
<td>Payton Construction, Inc.</td>
<td>$1,265,000.00</td>
<td>Non–Local/SBE</td>
</tr>
<tr>
<td>Shannon-Monk, Inc.</td>
<td>$1,273,000.00</td>
<td>Local/SBE</td>
</tr>
</tbody>
</table>

*Lowest Responsible Bid

The bid amount represents a 6.1 percent increase from the estimated construction cost. This contract has 270 calendar days for construction completion.

Additionally, the overall SMWVB analysis is shown in the following table:
Award of a Construction Contract
Naco Lime Slurry System Project

Naco Lime Slurry System Project
ARCHER WESTERN CONSTRUCTION, LLC

<table>
<thead>
<tr>
<th>SMWVB ANALYSIS – BOARD AWARD</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SBE</td>
<td>0.00%</td>
</tr>
<tr>
<td>MBE–African American</td>
<td>0.00%</td>
</tr>
<tr>
<td>MBE–Asian</td>
<td>0.00%</td>
</tr>
<tr>
<td>MBE–Hispanic</td>
<td>8.33%</td>
</tr>
<tr>
<td>MBE–Other</td>
<td>0.00%</td>
</tr>
<tr>
<td>WBE–Minority</td>
<td>0.00%</td>
</tr>
<tr>
<td>WBE–Non–Minority</td>
<td>0.00%</td>
</tr>
<tr>
<td>SMWVB Total</td>
<td>8.33%</td>
</tr>
</tbody>
</table>

Michael L. Myers, P.E.
Director
Plants and Major Projects

APPROVED:

Robert R. Puente
President/Chief Executive Officer

Attachments:
1. Project Area Map
2. Project Site Map
RESOLUTION NO.

OF THE SAN ANTONIO WATER SYSTEM BOARD OF TRUSTEES ACCEPTING THE BID OF ARCHER WESTERN CONSTRUCTION, LLC, IN THE AMOUNT OF $1,139,900.00 IN CONNECTION WITH THE NACO LIME SLURRY SYSTEM PROJECT; AWARDING A CONSTRUCTION CONTRACT TO ARCHER WESTERN CONSTRUCTION, LLC, IN THE AMOUNT OF $1,139,900.00 FOR THE PROJECT WORK; AUTHORIZING AND MAKING AVAILABLE THE EXPENDITURE OF FUNDS IN AN AMOUNT NOT TO EXCEED $1,139,900.00 FROM THE SYSTEM’S PROJECT FUND FOR THE PROJECT WORK; AUTHORIZING THE PRESIDENT/CHIEF EXECUTIVE OFFICER OR HIS DULY APPOINTED DESIGNEE TO EXECUTE A CONTRACT WITH ARCHER WESTERN CONSTRUCTION, LLC, AND TO PAY ARCHER WESTERN CONSTRUCTION, LLC, AN AMOUNT NOT TO EXCEED $1,139,900.00 FOR THE PROJECT WORK; FINDING THE RESOLUTION TO HAVE BEEN CONSIDERED PURSUANT TO THE LAWS GOVERNING OPEN MEETINGS; PROVIDING A SEVERABILITY CLAUSE; AND ESTABLISHING AN EFFECTIVE DATE.

WHEREAS, the 2017 Capital Improvement Program includes the construction of the Naco Lime Slurry System Project located in northeast Bexar County; and

WHEREAS, the San Antonio Water System (the “System”) has solicited bids for the project work; and

WHEREAS, Archer Western Construction, LLC, a non-local, non-SMWVB firm, has submitted a bid of $1,139,900.00 for the project work and this bidder has been determined to be the lowest responsible bidder; and

WHEREAS, System funds in the amount of $1,139,900.00 are required for the project work; and

WHEREAS, the total amount of $1,139,900.00 is available from the System’s Project Fund for the project work; and

WHEREAS, the San Antonio Water System Board of Trustees desires (i) to accept the bid of Archer Western Construction, LLC, in the amount of $1,139,900.00 in connection with the Naco Lime Slurry System Project, (ii) to award a construction contract to Archer Western Construction, LLC, in the amount of $1,139,900.00 for the project work, (iii) to approve a total expenditure in an amount not to exceed $1,139,900.00 from the System’s Project Fund for the
BE IT RESOLVED BY THE SAN ANTONIO WATER SYSTEM BOARD OF TRUSTEES:

1. That the bid of Archer Western Construction, LLC, in the amount of $1,139,900.00 in connection with the Naco Lime Slurry System Project is hereby accepted.

2. That a construction contract in the amount of $1,139,900.00 for the project work is hereby awarded to Archer Western Construction, LLC.

3. That a total sum not to exceed $1,139,900.00 for the project work is hereby made available and is to be expended from the System’s Project Fund.

4. That the President/Chief Executive Officer or his duly appointed designee is hereby authorized to execute a contract with Archer Western Construction, LLC, and to pay Archer Western Construction, LLC, an amount not to exceed $1,139,900.00 in connection with the Naco Lime Slurry System Project.

5. It is officially found, determined and declared that the meeting at which this resolution is adopted was open to the public, and that public notice of the time, place and subject matter of the public business to be conducted at such meeting, including this resolution, was given to all as required by the Texas Codes Annotated, as amended, Title 5, Chapter 551, Government Code.

6. If any part, section, paragraph, sentence, phrase or word of this resolution is for any reason held to be unconstitutional, illegal, inoperative, or invalid, or if any exception to or limitation upon any general provision herein contained is held to be unconstitutional, illegal, invalid or ineffective, the remainder of this resolution shall nevertheless stand effective and valid as if it had been enacted without the portion held to be unconstitutional, illegal, invalid or ineffective.

7. This resolution becomes effective immediately upon its passage.

PASSED AND APPROVED this 10th day of October, 2017.

______________________________
Berto Guerra, Jr., Chairman

ATTEST:

______________________________
Ernesto Arrellano, Jr., Secretary
TO:        San Antonio Water System Board of Trustees
FROM:    Douglas P. Evanson, Senior Vice President/Chief Financial Officer
THROUGH: Robert R. Puente, President/Chief Executive Officer

SUBJECT: AUTHORIZING THE SECOND AMENDMENT TO THE REVOLVING CREDIT AGREEMENT RELATING TO THE CITY OF SAN ANTONIO, TEXAS WATER SYSTEM COMMERCIAL PAPER NOTES, SERIES B AND OTHER MATTERS IN CONNECTION WITH THE FOREGOING

Board Action Date: October 10, 2017

SUMMARY AND RECOMMENDATION:

The attached resolution authorizes the Second Amendment to the Revolving Credit Agreement, and other matters in connection with the amendment, with Wells Fargo Bank, N.A. (“Wells Fargo”) to provide credit and liquidity support for the City of San Antonio, Texas Water System Commercial Paper Notes, Series B (“Series B Notes”). Under the amendment, Wells Fargo will provide credit and liquidity support for $100,000,000.00 in Series B Notes through January 15, 2021.

- The San Antonio Water System’s (the “System”) capital financing structure includes authorization for up to $500,000,000.00 tax-exempt commercial paper notes (“TECP”), which provides short-term, variable rate financing for capital projects. The TECP program provides interim financing and allows the System the flexibility of issuing debt on an as needed basis, matching construction funding with construction expenditures.

- To support the TECP program, a revolving credit agreement is required by investors to ensure liquidity of the TECP notes. A revolving credit agreement is an agreement, typically entered into with a bank, to provide liquidity support for short-term debt instruments. The bank agrees to purchase any outstanding TECP notes should the remarketing dealers be unable to find buyers in the financial markets, thus providing liquidity to the investor. TECP notes can only be issued up to the amount of the liquidity provided for under the revolving credit agreements.

- Resolution No. 15-135 approved June 2, 2015, authorized the First Amendment to the Revolving Credit Agreements. Under the current agreements, Bank of Tokyo provides credit and liquidity support for $350,000,000.00 of Series A Notes expiring October 4, 2018, and Wells Fargo provides credit and liquidity support for $100,000,000.00 of Series B Notes expiring January 15, 2018, together, both banks providing credit and liquidity support
totaling $450,000,000.00. The agreements allow the System to request an extension and/or modification of the terms and conditions.

- The System submitted a request for extension to Wells Fargo. Based on current market conditions and discussions with the Co-Financial Advisors, it is recommended to extend the Revolving Credit Agreement with Wells Fargo to provide credit and liquidity support for $100,000,000.00 in Series B Notes through January 15, 2021 at 40 basis points or 0.40 percent.

Staff, in coordination with the System’s Co-Financial Advisors, recommends that the Board approve this resolution.

**FINANCIAL IMPACT:**

The annual cost for the Revolving Credit Agreement with Wells Fargo is $400,000.00.

One time fees associated with the amendment to the agreement include bank fees to Wells Fargo in the amount of $5,000.00, bank counsel fees to Chapman & Cutler in the amount of $5,000.00, and bond counsel fees to Norton Rose Fulbright, the System’s bond counsel, in the amount of $17,500.00.

Fees for these services are included in the Other Debt Service Requirement Budget (Company: 1000; Accounting Unit: 1000001, 1000002, 1000005, 1000006, and 1000007; Account: 534400). Funds for each subsequent year will be appropriated based on the approval of the annual budget.

Douglas P. Evanson  
Senior Vice President/Chief Financial Officer

APPROVED:

Robert R. Puente  
President/Chief Executive Officer
A RESOLUTION BY THE BOARD OF TRUSTEES OF THE SAN ANTONIO WATER SYSTEM APPROVING CERTAIN ACTIONS RELATING TO OUTSTANDING OBLIGATIONS DESIGNATED AS CITY OF SAN ANTONIO, TEXAS WATER SYSTEM COMMERCIAL PAPER NOTES, SERIES B, INCLUDING AUTHORIZATION OF A SECOND AMENDMENT TO THE REVOLVING CREDIT AGREEMENT RELATING TO THE SERIES B NOTES; AN AMENDMENT TO THE RELATED FEE AGREEMENT; APPROVAL OF AN UPDATED OFFERING MEMORANDUM RELATING TO THE COMMERCIAL PAPER NOTES; FINDING THE RESOLUTION TO HAVE BEEN CONSIDERED PURSUANT TO THE LAWS GOVERNING OPEN MEETINGS; ESTABLISHING AN EFFECTIVE DATE; AND RESOLVING OTHER MATTERS IN CONNECTION WITH THE FOREGOING

WHEREAS, pursuant to the authority contained in (i) Chapter 1502, as amended, Texas Government Code, (ii) certain ordinances previously adopted by the City Council (the “City Council”) of the City of San Antonio, Texas (the “City”) authorizing the issuance of the currently outstanding senior lien revenue bonds (the “Previously Issued Senior Lien Bonds”), (iii) certain ordinances previously adopted by the City Council authorizing the issuance of the currently outstanding junior lien revenue bonds (the “Previously Issued Junior Lien Bonds”), (iv) certain ordinances previously adopted by the City Council authorizing the issuance of the currently outstanding subordinate lien revenue bonds (the “Previously Issued Subordinate Lien Bonds”) (collectively, the Previously Issued Senior Lien Bonds, the Previously Issued Junior Lien Bonds, and the Previously Issued Subordinate Lien Bonds are referred to herein as the “Bonds”), and (v) an amended and restated ordinance adopted by the City Council of the City on September 20, 2012 (as amended on June 18, 2015) relating to the implementation of a commercial paper program (the “Commercial Paper Ordinance”) authorizing the issuance of certain currently outstanding inferior lien obligations (hereinafter defined and referred to as the “Commercial Paper Notes”), the complete management and control of the water system (the “City System”) of the City is vested in the San Antonio Water System (“SAWS”) and its Board of Trustees, as the governing body thereof (the “Board”), during the period of time any of the Bonds are outstanding and unpaid; and

WHEREAS, pursuant to Texas law, the City Council has heretofore issued, and there are currently outstanding, two series of revenue Commercial Paper Notes designated as “City of San Antonio, Texas Water System Commercial Paper Notes, Series A” (the “Series A Notes”) and “City of San Antonio, Texas Water System Commercial Paper Notes, Series B” (the “Series B Notes” and, together with the Series A Notes, the “Commercial Paper Notes”); and

WHEREAS, the Commercial Paper Ordinances currently authorize Commercial Paper Notes to be issued in an amount not to exceed $500,000,000, provided, however, the amount outstanding at any one time cannot exceed the amount of credit and liquidity support provided for the Commercial Paper Notes; and

WHEREAS, in order to provide certain credit and liquidity support for the Commercial Paper Notes, the City Council previously entered into two revolving credit agreements in connection with the issuance of the Commercial Paper Notes (the “Series A RCA” and the “Series
WHEREAS, the Series B RCA is set to set expire on January 15, 2018 (the “Final Date”); and

WHEREAS, the Commercial Paper Program has served, and continues to serve, as a beneficial financial tool by providing the City with ready access to capital as necessary to improve, operate, and maintain the City System; and

WHEREAS, given the projected capital needs of the City System, the Board has determined, with respect to the Series B RCA, to extend the Final Date to January 15, 2021; and

WHEREAS, the City’s ability to extend the Final Date to the Series B RCA requires certain amendments thereto and to the associated Fee Letter entered into by the City and Wells Fargo in connection with the execution of the Series B RCA; and

WHEREAS, pursuant to Section 2.10 of the Series B RCA, the extension thereof requires the consent of Wells Fargo, as the liquidity bank thereunder; and

WHEREAS, the City, acting by and through the Board, has submitted (or will submit) a written request and has obtained (or will obtain) the requisite consent from Wells Fargo under the Series B RCA necessary to effectuate the amendment to extend the terms of such agreement; and

WHEREAS, Wells Fargo’s extension of liquidity support for the Series B Notes, including extending the Final Date to January 15, 2021, shall be evidenced in a Second Amendment to the Series B RCA, entered into between the City and Wells Fargo (the “Second Amendment”) and an amendment to the associated Fee Letter (the “Fee Letter Amendment”), which will describe the pricing terms by which Wells Fargo has agreed to enter into the Second Amendment; and

WHEREAS, the Board hereby finds and determines that entering into the Second Amendment and the Fee Letter Amendment, as heretofore described, represents actions that are in the best interest of the City System and its ratepayers; NOW, THEREFORE,

BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE SAN ANTONIO WATER SYSTEM THAT:

1. Necessary Consent to Second Amendment. As specified in the preamble of this Resolution, the effectiveness of the Second Amendment is conditioned upon satisfaction of the conditions precedent set forth in the Series B RCA. The City, acting by and through the Board, has submitted or will submit a written request for the extension of the Final Date and has received
or will receive the requisite consent of Wells Fargo, as or to be evidenced by Wells Fargo’s execution of the Second Amendment.

2. **Approval of the Second Amendment.** The Second Amendment, the form of which is attached hereto as Exhibit A, that effectuates the amendments to the Series B RCA by extending its term in the manner described in the recitals hereof, is hereby approved, and the Chairman, Vice Chairman, Secretary, Assistant Secretary or Designated Financial Officer (as such term is defined in the Commercial Paper Ordinance) (each, a “Designated Financial Officer”) or any of them, acting by and through the Board for and on behalf of the City, are hereby authorized to execute the Second Amendment in substantially the form attached hereto as Exhibit A, as well as the Fee Letter Amendment related thereto, in substantially the form attached hereto as Exhibit B, and to deliver the same to Wells Fargo under the Series B RCA and other parties with interest therein.

3. **Delegation of Authority.** The authority delegated to each Designated Financial Official hereunder shall expire if not exercised by the first anniversary of the passage of this Resolution by the Board.

4. **Use of Updated Offering Memorandum.** The use by the Dealers (as defined in the Commercial Paper Ordinance) of the Updated Offering Memorandum, substantially in the form of Exhibit C attached hereto, prepared by the Board, acting on behalf of the City, in connection with the sale of the Commercial Paper Notes, and the distribution of the Updated Offering Memorandum by the Dealers, is hereby approved and authorized. The Board delegates to the President/Chief Executive Officer and Senior Vice President/Chief Financial Officer, the authority to execute, on behalf of and as the act and deed of the Board, a certification evidencing (among other matters) that the final Updated Offering Memorandum is complete and accurate and without material misstatements or omissions, and to take any and all other actions consistent with the provisions of this Resolution and the distribution of the Updated Offering Memorandum in connection with any remarketing of the Commercial Paper Notes.

5. **Further Procedures.** The officers and employees of the City and the Board, in consultation with the Board’s co-financial advisors (being PFM Financial Advisors, LLC and Estrada Hinojosa & Company, Inc., (the “Co-Financial Advisors”)) and the Board’s co-bond counsel (being Norton Rose Fullbright US LLP and Kassahn & Ortiz, P.C.), are hereby authorized, empowered, and directed from time to time and at any time to do and perform all such acts and things and to execute, acknowledge, and deliver in the name and under the corporate seal and on behalf of the City, acting by and through the Board, all such instruments, whether or not herein mentioned, as may be necessary or desirable in order to carry out the terms and provisions of this Resolution (including delivery of any notice of any matter that is the subject of this Resolution or the Commercial Paper Ordinance to any interested party, such as the Issuing and Paying Agent under and pursuant to the Issuing and Paying Agency Agreement, as amended, or to any Dealer under an existing Dealer Agreement, relating to the Series B Notes). Specifically, by the adoption of this Resolution, the Board hereby authorizes the payment of the fees and expenses incurred and to be paid by the Board in connection with the Second Amendment and the Fee Letter Amendment, and the execution and delivery thereof and all other documents and certificates related thereto. In case any officer of the Board whose signature shall appear on any certificate shall cease to be such officer before the delivery of such certificate, such signature shall nevertheless be valid and sufficient for all purposes the same as if such officer had remained in office until such delivery.
In addition, the Board authorizes the payment, from legally available funds of Board, of the professional fees and expenses incurred by the Board in association with this transaction upon the approval of a written invoice approved by the Senior Vice President/Chief Financial Officer of the City System or his designee.

6. **Inconsistent Provisions.** All ordinances and resolutions, or parts thereof, of the Board which are in conflict or inconsistent with any provision of this Resolution are hereby repealed to the extent of such conflict, and the provisions of this Resolution shall be and remain controlling as to the matters resolved herein.

7. **Governing Law.** This Resolution shall be construed and enforced in accordance with the laws of the State of Texas and the United States of America.

8. **Severability.** If any provision of this Resolution or the application thereof to any person or circumstance shall be held to be invalid, the remainder of this Resolution and the application of such provision to other persons and circumstances shall nevertheless be valid, and the Board hereby declares that this Resolution would have been adopted without such invalid provision.

9. **Incorporation of Preamble Recitals.** The recitals contained in the preamble hereof are found to be true, and such recitals and other statements therein are hereby made a part of this Resolution for all purposes and are adopted as a part of the judgment and findings of the Board.

10. **Open Meeting.** It is officially found, determined, and declared that the meeting at which this Resolution is adopted was open to the public and public notice of the time, place, and subject matter of the public business to be considered at such meeting, including this Resolution, was given, all as required by Chapter 551, as amended, Texas Government Code.

11. **Effective Date.** This resolution shall be in force and effect from and after its final passage, and it is so resolved.

**********
PASSED AND APPROVED this the 10th of October, 2017.

__________________________________
Berto Guerra, Jr., Chairman

ATTEST:

___________________________________
Ernesto Arrellano, Jr., Secretary
EXHIBIT A
SECOND AMENDMENT

See Tab No. ___
EXHIBIT B

FEE LETTER AMENDMENT

See Tab No. ___
EXHIBIT C

UPDATED OFFERING MEMORANDUM

See Tab No. ___
TO: San Antonio Water System Board of Trustees
FROM: Emma J. Bridges, Director, Customer Service, and Agnes G. Barard, Vice President, Customer Service
THROUGH: Robert R. Puente, President/Chief Executive Officer
SUBJECT: AWARDING A SUBSCRIPTION SERVICES CONTRACT IN CONNECTION WITH CONTACT CENTER BEST PRACTICES AND IMPROVEMENT SUBSCRIPTION SERVICES

Board Action Date: October 10, 2017

SUMMARY AND RECOMMENDATION:

The attached resolution awards a subscription services contract to CEB, Inc., a non-local, non-SMWB firm, in an amount not to exceed $136,000.00 for a four-year period in connection with Contact Center Best Practices and Improvement Subscription Services.

- This contract provides services to support operational improvements within the Customer Care division of Customer Service for the San Antonio Water System (the “System”). Customer Care interacts personally with customers via the Contact Center, Key Accounts, Telephone Collections, and three Customer Centers handling a considerable volume of calls and contacts. The staff performs various duties such as taking payments, providing information to general questions and processing customer requests to initiate, disconnect or transfer service.

- The System’s Contact Center has experienced various issues that affect the productivity of the department. Some issues include, but are not limited to, customers in queue with longer than desired hold times, customer complaints of inconsistent information, and the absence of intelligent metrics to guide performance and productivity of Customer Service employees.

- CEB, Inc. is a global firm, which provides innovative insights and services that help lead to transformative outcomes to contact centers across the nation. They possess a strong culture of quality that can help improve the performance in the System’s Contact Center. Available services include, but are not limited to, benchmarking, best practices data, and training materials regarding customer experience improvement/management, quality performance management, and staff augmentation enhancement techniques that can help the department improve overall performance.

- Through a Request for Proposal process, the System issued Solicitation No. R-17-009-PC on May 10, 2017 seeking qualified proposers for subscription services.
CEB, Inc. submitted a proposal that was deemed to be the best value for this service. Based on subscription service offerings, approach to topics of interest and training to System staff, CEB, Inc. received the highest ranking as the best overall value.

Staff recommends that the Board approve this resolution.

FINANCIAL IMPACT:

The services in the amount of $32,500.00 will be paid from the System Fund budgeted in the 2017 Budget (Company: 1000, Accounting Unit: 5024400, Account: 511312). Funds for these services to be provided in subsequent year’s budgets are pursuant to and contingent upon Board approval of the subsequent year’s budgets with a line item for such expenditures.

Total contract amount is in an amount not to exceed $136,000.00.

SUPPLEMENTARY COMMENTS:

Customer Service and Contracting staff prepared a Request for Proposal to seek and evaluate proposals to identify the firm that offers the “best value” to acquire these services. This approach has been used in the past and has been effective.

This approach affords the System the opportunity to establish a reasonable balance between price and qualifications in the selection of a contractor to perform subscription services.

The proposals were submitted on Thursday, May 29, 2017 at 2:00 p.m., and were evaluated based on the selection criteria set forth below.

Staff recommends that the service contract be awarded to CEB, Inc. as the firm that will provide the subscription services at the “best value” for the System.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Subscription Offering</td>
<td>40</td>
</tr>
<tr>
<td>b. Approach to Topics of Interest</td>
<td>20</td>
</tr>
<tr>
<td>c. Training to System Staff</td>
<td>5</td>
</tr>
<tr>
<td>d. Price</td>
<td>35</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>100</td>
</tr>
</tbody>
</table>
The System received proposals from the following firms:

<table>
<thead>
<tr>
<th>NAME OF FIRM</th>
<th>LOCAL/SMWB</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEB, Inc.*</td>
<td>Non-Local/Non-SMWB</td>
</tr>
<tr>
<td>Chartwell, Inc.</td>
<td>Non-Local/Non-SMWB</td>
</tr>
<tr>
<td>Frost &amp; Sullivan</td>
<td>Local/Non-SMWB</td>
</tr>
<tr>
<td>Soaring Eagle Enterprises, Inc. (SEE, Inc.)</td>
<td>Non-Local/Non-SMWB</td>
</tr>
<tr>
<td>Ventas Consulting, LLC</td>
<td>Non-Local/Non-SMWB</td>
</tr>
</tbody>
</table>

*Selected Firm

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Emma J. Bridges  
Director, Customer Service

Agnes G. Barard  
Vice President, Customer Service

APPROVED:

Robert R. Puente  
President/Chief Executive Officer
RESOLUTION NO.

OF THE SAN ANTONIO WATER SYSTEM BOARD OF TRUSTEES ACCEPTING THE PROPOSAL OF CEB, INC. IN THE AMOUNT NOT TO EXCEED $136,000.00 IN CONNECTION WITH THE CONTACT CENTER BEST PRACTICES AND IMPROVEMENTS SUBSCRIPTION SERVICES; AWARDING A SUBSCRIPTION SERVICES CONTRACT TO CEB, INC. IN AN AMOUNT NOT TO EXCEED $136,000.00 FOR A FOUR-YEAR PERIOD FOR THE SUBSCRIPTION SERVICES; AUTHORIZING AN AMOUNT NOT TO EXCEED $136,000.00 FROM THE SYSTEM FUND, AND THAT THE SUBSEQUENT YEAR’S EXPENDITURES ARE PURSUANT TO AND CONTINGENT UPON BOARD APPROVAL OF THE SUBSEQUENT YEAR’S BUDGETS WITH A LINE ITEM FOR SUCH EXPENDITURES; AUTHORIZING THE PRESIDENT/CHIEF EXECUTIVE OFFICER OR HIS DULY APPOINTED DESIGNEE TO EXECUTE A SUBSCRIPTION SERVICES CONTRACT WITH CEB, INC., AND TO PAY CEB, INC. AN AMOUNT NOT TO EXCEED $136,000.00 FOR THE SUBSCRIPTION SERVICES. FINDING THE RESOLUTION TO HAVE BEEN CONSIDERED PURSUANT TO THE LAWS GOVERNING OPEN MEETINGS; PROVIDING A SEVERABILITY CLAUSE; AND ESTABLISHING AN EFFECTIVE DATE

WHEREAS, the San Antonio Water System (the “System”) requires the services of a best practices and improvement service provider to assist with the improvement of the System’s Customer Care division; and

WHEREAS, CEB, Inc., a non-local, non-SMWB firm, provides subscription services and best practices and improvement methods, which are developed and used specifically to improve contact centers and customer experience in various industries; and

WHEREAS, CEB, Inc. submitted a proposal that has been determined to be the “best value” for the subscription services; and

WHEREAS, System funds in the amount of $136,000.00 are required for the subscription services; and

WHEREAS, the San Antonio Water System Board of Trustees desires (i) to accept the proposal of CEB, Inc. in an amount not to exceed $136,000.00 in connection with Contact Center Best Practices and Improvement Subscription Services, (ii) to award a subscription services contract to CEB, Inc. in an amount not to exceed $136,000.00 for a four-year period for the
subscription services, (iii) to authorize an amount not to exceed $136,000.00 from the System Fund, and that the subsequent year’s expenditures are pursuant to and contingent upon Board approval of the subsequent year’s budget with a line item for such expenditures, and (iv) to authorize the President/Chief Executive Officer or his duly appointed designee to execute a service contract with CEB, Inc., and to pay CEB, Inc. an amount not to exceed $136,000.00 for the subscription services; now, therefore:

BE IT RESOLVED BY THE SAN ANTONIO WATER SYSTEM BOARD OF TRUSTEES:

1. That the proposal of CEB, Inc. in the amount of $136,000.00 in connection with Contact Center Best Practices and Improvement Subscription Services is hereby accepted.

2. That a service contract is hereby awarded to CEB, Inc. in the amount not to exceed $136,000.00 for a four-year period for the subscription services.

3. That the expenditure of funds in an amount not to exceed $136,000.00 for the subscription services is hereby approved.

4. That the amount of $136,000.00 is hereby made available from the System Fund, and that subsequent year’s expenditures are pursuant to and contingent upon Board approval of the subsequent year’s budget with a line item for such expenditures.

5. That the President/Chief Executive Officer or his duly appointed designee is hereby authorized to execute a service contract with CEB, Inc., and to pay CEB, Inc. an amount not to exceed $136,000.00 for the subscription services.

6. It is officially found, determined and declared that the meeting at which this resolution is adopted was open to the public, and that public notice of the time, place and subject matter of the public business to be conducted at such meeting, including this resolution, was given to all as required by the Texas Codes Annotated, as amended, Title 5, Chapter 551, Government Code.

7. If any part, section, paragraph, sentence, phrase or word of this resolution is for any reason held to be unconstitutional, illegal, inoperative or invalid, or if any exception to or limitation upon any general provision herein contained is held to be unconstitutional, illegal, invalid or ineffective, the remainder of this resolution shall nevertheless stand effective and valid as if it had been enacted without the portion held to be unconstitutional, illegal, invalid or ineffective.

8. This resolution shall take effect immediately upon its passage.
PASSED AND APPROVED this 10\textsuperscript{th} day of October, 2017.

______________________________

Berto Guerra, Jr., Chairman

ATTEST:

______________________________

Ernesto Arrellano, Jr., Secretary
TO: San Antonio Water System Board of Trustees

FROM: Tamsen R. McNarie, Director, Operations Support, and Jeffrey J. Haby, P.E., Vice President, Production and Treatment

THROUGH: Robert R. Puente, President/Chief Executive Officer

SUBJECT: AWARD OF SERVICE CONTRACT IN CONNECTION WITH SANITARY SEWER SMOKE TESTING IN THE CS38 SUB-BASIN CONTRACT

Board Action Date: October 10, 2017

SUMMARY AND RECOMMENDATION:

The attached resolution awards a service contract to Burgess & Niple, Inc., a non-local, non-SMWVB firm, in the amount of $70,762.36 for the period ending December 15, 2017 in connection with the Sanitary Sewer Smoke Testing in the CS38 Sub-Basin Contract.

- San Antonio Water System (SAWS) is required under the Consent Decree to evaluate potential capacity remediation measures in order to resolve capacity constraints for the purpose of eliminating the future occurrence of sanitary sewer overflows.

- Subsequent to performing an analysis of flow rates during storm events, the CS38 sub-basin was found to be a source of excessive inflow, presumably from storm water entering the sanitary sewer system via existing manhole rings and covers. The CS38 sub-basin was thus chosen as the location to conduct the remedial measure of inflow reduction, specifically the replacement of existing rings and covers with watertight rings and covers in low-lying areas. Within the past 12 months, rings and covers were replaced on 507 specific manholes in drainage ways within the CS38 sub-basin.

- Combined with ongoing efforts to monitor and analyze flow rates from the CS38 sub-basin, this contract will evaluate the extent to which the ring and cover replacements have reduced inflow and provide an indication if any remaining possibilities of inflow exist in the CS38 sub-basin.

- Smoke testing is a method recognized in the wastewater collection utility industry for evaluating the extent to which inflow may or may not exist in a collection system and it is a method recommended by the Texas Commission on Environmental Quality to inspect collection system assets.

- This contract includes smoke testing inspection of approximately 160,829 feet of sewer mains and associated laterals and manholes.

- The “best value” approach was used to select the vendor for this contract.

- Burgess & Niple, Inc. submitted the “best value” bid.
Staff recommends that the Board approve this resolution.

**FINANCIAL IMPACT:**

Funds for these contract services to be provided during FY 2017 were included in the FY 2017 Annual Operating Budget and will be financed with revenues from the System Fund. The System Fund will finance the amount of $70,762.36 for contract services (Company: 1000, Accounting Unit: 5046100, Account: 511312). The SAWS bid number for this project is 17-17092.

Funds for these contract services to be provided during FY 2018, if necessary, will be paid from System funds budgeted in the 2018 Budget, pursuant to and contingent upon Board approval of the 2018 budget with a line item for such expenditures (Company: 1000, Accounting Unit: 5046100, Account: 511312).

**SUPPLEMENTARY COMMENTS:**

Extensive interaction with the public is required for smoke testing projects. It requires a contractor with experience with this type of service because it is imperative that notifications and interaction with homeowners and businesses are handled professionally. Therefore, a high value is placed upon the experience of the contractor to ensure the work is performed correctly; to minimize customer complaints, and to ensure any public concerns associated with on-site operations are managed professionally. SAWS staff prepared a bid invitation using a “best value” approach to acquire this service because of the experience and judgment necessary for the highly specialized requirements of this work. This approach has been used in the past and has been effective.

The “best value” approach affords SAWS the opportunity to establish a reasonable balance between price and qualifications in the selection of a contractor to perform sewer system inspections using smoke testing equipment.

The “best value” bids were submitted on August 25, 2017 with the pricing portion of the bids opened on September 6, 2017.

Staff recommends that the contract be awarded to Burgess & Niple, Inc. as the bidder that will provide the services at the “best value” for SAWS based on the selection criteria set forth below.
Criteria:

<table>
<thead>
<tr>
<th>a. Bidder’s Pricing</th>
<th>Percent: 40</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. Similar Prior Experience, Certifications and References</td>
<td>20</td>
</tr>
<tr>
<td>c. Performance, Quality Control and Quality Assurance</td>
<td>15</td>
</tr>
<tr>
<td>d. Resources</td>
<td>15</td>
</tr>
<tr>
<td>e. Small, Minority, Woman-owned Business Program Compliance</td>
<td>10</td>
</tr>
</tbody>
</table>

TOTAL 100

SAWS received bids from the following companies:

<table>
<thead>
<tr>
<th>BIDDERS</th>
<th>BID AMOUNT</th>
<th>BEST VALUE SCORE</th>
<th>LOCAL/SMWVB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burgess &amp; Niple, Inc.*</td>
<td>$70,762.36</td>
<td>467</td>
<td>Non-Local/Non-SMWVB</td>
</tr>
<tr>
<td>RJN Group, Inc.</td>
<td>$88,479.00</td>
<td>446</td>
<td>Local/Non-SMWVB</td>
</tr>
</tbody>
</table>

*Best Value Proposal

Additionally, the overall SMWVB analysis is shown in the following table:

<table>
<thead>
<tr>
<th>Sanitary Sewer Smoke Testing in the CS38 Sub-Basin Contract</th>
</tr>
</thead>
<tbody>
<tr>
<td>BURGESS &amp; NIPLE, INC.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SMWVB ANALYSIS – BOARD AWARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBE</td>
</tr>
<tr>
<td>MBE – African American</td>
</tr>
<tr>
<td>MBE - Asian</td>
</tr>
<tr>
<td>MBE - Hispanic</td>
</tr>
<tr>
<td>MBE - Other</td>
</tr>
<tr>
<td>WBE - Minority</td>
</tr>
<tr>
<td>WBE – Non-Minority</td>
</tr>
<tr>
<td>SMWVB Total</td>
</tr>
</tbody>
</table>
Award of Service Contract
Sanitary Sewer Smoke Testing in the CS38 Sub-Basin Contract

Tamsen McNarie
Director
Operations Support

APPROVED:

Robert R. Puente
President/Chief Executive Officer

Jeffrey J. Haby, P.E.
Vice President
Production and Treatment
RESOLUTION NO.

OF THE SAN ANTONIO WATER SYSTEM BOARD OF TRUSTEES ACCEPTING THE BID OF BURGESS & NIPLE, INC. IN THE AMOUNT OF $70,762.36 IN CONNECTION WITH THE SANITARY SEWER SMOKE TESTING IN THE CS38 SUB-BASIN CONTRACT; AWARDED A SERVICE CONTRACT TO BURGESS & NIPLE, INC. IN THE AMOUNT OF $70,762.36 IN CONNECTION WITH THE SANITARY SEWER SMOKE TESTING IN THE CS38 SUB-BASIN CONTRACT; APPROVING THE EXPENDITURE OF FUNDS IN AN AMOUNT NOT TO EXCEED $70,762.36 FOR THE PROJECT WORK, AND THAT THE SUBSEQUENT YEAR’S EXPENDITURES, IF NECESSARY, ARE PURSUANT TO AND CONTINGENT UPON BOARD APPROVAL OF THE SUBSEQUENT YEAR’S BUDGET WITH A LINE ITEM FOR SUCH EXPENDITURES; AUTHORIZING THE PRESIDENT/CHIEF EXECUTIVE OFFICER OR HIS DULY APPOINTED DESIGNEE TO EXECUTE A SERVICE CONTRACT WITH BURGESS & NIPLE, INC., AND TO PAY BURGESS & NIPLE, INC. AN AMOUNT NOT TO EXCEED $70,762.36 FOR THE PERIOD ENDING DECEMBER 15, 2017 FOR THE PROJECT WORK; FINDING THE RESOLUTION TO HAVE BEEN CONSIDERED PURSUANT TO THE LAWS GOVERNING OPEN MEETINGS, PROVIDING A SEVERABILITY CLAUSE; AND ESTABLISHING AN EFFECTIVE DATE

WHEREAS, the San Antonio Water System (the “System”) is required under the Consent Decree to evaluate potential capacity remediation measures in order to resolve capacity constraints in the sanitary sewer system for the purpose of eliminating the future occurrence of sanitary sewer overflows; and

WHEREAS, “flow rate reduction” by reducing storm water inflow is a remedial measure identified in the Consent Decree as an alternative to evaluate for resolving capacity constraints; and

WHEREAS, in-line smoke testing is the appropriate method for inspecting the sanitary sewer system in order to evaluate the extent to which recently completed remedial measures have reduced inflow and it will provide the location of any remaining possibilities of inflow that may exist in the CS38 sub-basin sanitary sewer system; and

WHEREAS, this project includes smoke testing inspection of approximately 160,829 feet of sewer mains and associated manholes and laterals in the CS38 sub-basin (the
WHEREAS, the System has solicited bids for the project work; and

WHEREAS, Burgess & Niple, Inc., a non-local, non-SMWVB firm, has submitted a bid in the amount of $70,762.36 for the project work and this bid has been determined to be the “best value” bid; and

WHEREAS, System funds in the amount of $70,762.36 are required for the project work and are available from the System Fund; and

WHEREAS, the San Antonio Water System Board of Trustees desires (i) to accept the bid of Burgess & Niple, Inc. in the amount of $70,762.36 in connection with the Sanitary Sewer Smoke Testing in the CS38 Sub-Basin Contract, (ii) to award a service contract to Burgess & Niple, Inc., in the amount of $70,762.36 for the period ending December 15, 2017 for the project work, (iii) to approve the expenditure of funds in an amount not to exceed $70,762.36 for the project work from the System Fund, and that the subsequent year’s expenditures are pursuant to and contingent upon Board approval of subsequent year’s budget with a line item for such expenditures, and (iv) to authorize the President/Chief Executive Officer or his duly appointed designee to execute a service contract with Burgess & Niple, Inc., and to pay Burgess & Niple, Inc., an amount not to exceed $70,762.36 for the project work; now, therefore:

BE IT RESOLVED BY THE SAN ANTONIO WATER SYSTEM BOARD OF TRUSTEES:

1. That the bid of Burgess & Niple, Inc. in the amount of $70,762.36 in connection with the Sanitary Sewer Smoke Testing in the CS38 Sub-Basin Contract is hereby accepted.

2. That a service contract is hereby awarded to Burgess & Niple, Inc. in the amount of $70,762.36 for the period ending December 15, 2017 for the project work.

3. That the expenditure of System funds in an amount not to exceed $70,762.36 for the project work is hereby approved.

4. That an amount not to exceed $70,762.36 is hereby made available from the System Fund and that the subsequent year’s expenditures, if necessary, are pursuant to and contingent upon Board approval of the subsequent year’s budget with a line item for such expenditures.

5. That the System's President/Chief Executive Officer or his duly appointed designee is hereby authorized to execute a service contract with Burgess & Niple, Inc. and to pay Burgess & Niple, Inc., an amount not to exceed $70,762.36 for the project work.

6. It is officially found, determined and declared that the meeting at which this resolution is adopted was open to the public, and that public notice of the time, place and subject matter of the
public business to be conducted at such meeting, including this resolution, was given to all as required by the Texas Codes Annotated, as amended, Title 5, Chapter 551, Government Code.

7. If any part, section, paragraph, sentence, phrase or word of this resolution is for any reason held to be unconstitutional, illegal, inoperative or invalid, or if any exception to or limitation upon any general provision herein contained is held to be unconstitutional, illegal, invalid or ineffective, the remainder of this resolution shall nevertheless stand effective and valid as if it had been enacted without the portion held to be unconstitutional, illegal, invalid or ineffective.

8. This resolution becomes effective immediately upon its passage.

PASSED AND APPROVED this 10th day of October, 2017.

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Berto Guerra, Jr., Chairman

ATTEST:

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Ernesto Arrellano, Jr., Secretary
TO: San Antonio Water System Board of Trustees

FROM: Nancy Belinsky, Vice President and General Counsel

THROUGH: Robert R. Puente, President/Chief Executive Officer

SUBJECT: AUTHORIZATION TO FILE A LAWSUIT AGAINST JT UNDERGROUND & UTILITY CONSTRUCTION, INC.

Board Action Date: October 10, 2017

SUMMARY AND RECOMMENDATION:

The attached resolution authorizes the filing of a lawsuit in a court of competent jurisdiction against JT Underground & Utility Construction, Inc. (“JT”). The resolution also authorizes System’s General Counsel and any specially-engaged outside counsel under her direction to take all necessary action relating to participation in the lawsuit as a party as may be required through final conclusion, including any appeals, as determined necessary by the General Counsel.

- On or about October 13, 2015, JT cut and damaged a 24-inch water main while working on Stevens Parkway in San Antonio, Texas, resulting in extensive damage to the water main belonging to the San Antonio Water System (the “System”).

- The System sent several demand letters to JT to recover the System’s damages, JT has failed to accept financial responsibility for the incident, and failed and refused to remit payment for the damages.

- The System is seeking and demanding payment from JT in the amount of $8,797.28.

- JT and the System have been unable to resolve the dispute to date.

- The System believes that the System’s interests can be best preserved and protected by the filing of a lawsuit.

Staff recommends that the Board approve this resolution authorizing the System’s General Counsel and any specially-engaged outside counsel under her direction to file a lawsuit in a court of competent jurisdiction.
FINANCIAL IMPACT:

Any legal fees incurred to file the lawsuit will be paid from the System Fund, 2017 O&M budget (Company: 1000; Accounting Unit: 5000400; Account: 511320).

Nancy Belinsky
Vice President and General Counsel

APPROVED:

Robert R. Puente
President/Chief Executive Officer
RESOLUTION NO.

OF THE SAN ANTONIO WATER SYSTEM BOARD OF TRUSTEES AUTHORIZING THE FILING OF A LAWSUIT AGAINST JT UNDERGROUND & UTILITY CONSTRUCTION, INC. IN CONNECTION WITH DAMAGES TO THE SYSTEM’S INFRASTRUCTURE; FURTHER AUTHORIZING THE SYSTEM’S GENERAL COUNSEL TO TAKE ALL NECESSARY ACTION RELATING TO SUCH LAWSUIT; FINDING THE RESOLUTION TO HAVE BEEN CONSIDERED PURSUANT TO THE LAWS GOVERNING OPEN MEETINGS; PROVIDING A SEVERABILITY CLAUSE; AND ESTABLISHING AN EFFECTIVE DATE

WHEREAS, on or about October 13, 2015, JT Underground & Utility Construction, Inc. (“JT”) cut and damaged a 24-inch water main while working on Stevens Parkway, in San Antonio, Texas, which resulted in extensive damage to the water main belonging to the San Antonio Water System (the “System”); and

WHEREAS, the System has sent demand letters to JT to recover the System’s damages, JT has failed to accept any financial responsibility for the incident, and has failed and refused to remit payment for the damages; and

WHEREAS, JT and the System have been unable to resolve the disputes to date; and

WHEREAS, the System believes that its interests can be best preserved and protected by the filing of a lawsuit; and

WHEREAS, the San Antonio Water System Board of Trustees desires (i) to authorize the filing of a lawsuit against JT in a court of competent jurisdiction; and (ii) to further authorize the System’s General Counsel and any specially-engaged outside counsel under her direction to take all necessary legal action relating to participation in the lawsuit as a party through final conclusion, including any appeals, as determined necessary by the General Counsel; now, therefore:

BE IT RESOLVED BY THE SAN ANTONIO WATER SYSTEM BOARD OF TRUSTEES:

1. That the filing of a lawsuit against JT in a court of competent jurisdiction is hereby authorized.

2. That the System’s General Counsel and any specially-engaged outside counsel under her direction are hereby further authorized to take all necessary action relating to participation in the
lawsuit as a party as may be required through final conclusion, including any appeals, as determined necessary by the General Counsel.

3. It is officially found, determined and declared that the meeting at which this resolution is adopted was open to the public, and that public notice of the time, place and subject matter of the public business to be conducted at such meeting, including this resolution, was given to all as required by the Texas Codes Annotated, as amended, Title 5, Chapter 551, Government Code.

4. If any section, paragraph, sentence, phrase or word of this resolution is for any reason held to be unconstitutional, illegal, inoperative or invalid, or if any exception to or limitation upon any general provision herein contained is held to be unconstitutional, illegal, invalid or ineffective, the remainder of this resolution shall nevertheless stand effective and valid as if it had been enacted without the portion held to be unconstitutional, illegal, invalid or ineffective.

5. This resolution becomes effective immediately upon its passage.

PASSED AND APPROVED this 10th day of October, 2017.

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Berto Guerra, Jr., Chairman

ATTEST:

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Ernesto Arellano, Jr., Secretary
TO: San Antonio Water System Board of Trustees
FROM: Nancy Belinsky, Vice President and General Counsel
THROUGH: Robert R. Puente, President/Chief Executive Officer
SUBJECT: AUTHORIZATION TO FILE A LAWSUIT AGAINST K-BAR SERVICES, INC.

Board Action Date: October 10, 2017

SUMMARY AND RECOMMENDATION:

The attached resolution authorizes the filing of a lawsuit in a court of competent jurisdiction against K-Bar Services, Inc. (“K-Bar”). The resolution also authorizes System’s General Counsel and any specially-engaged outside counsel under her direction to take all necessary action relating to participation in the lawsuit as a party as may be required through final conclusion, including any appeals, as determined necessary by the General Counsel.

- On or about March 7, 2016, K-Bar damaged a 12-inch water main while drilling to install poles at or near the 13700 block of U.S. Highway 281 North, in San Antonio, Texas, resulting in significant damage to the water main and water loss to the San Antonio Water System (the “System”).

- The System sent several demand letters to K-Bar to recover the System’s damages, but K-Bar has failed to accept any financial responsibility for the incident, and failed and refused to remit payment for the damages.

- The System is seeking and demanding payment from K-Bar in the amount of $9,789.80.

- K-Bar and the System have been unable to resolve the dispute to date.

- The System believes that the System’s interests can be best preserved and protected by the filing of a lawsuit.

Staff recommends that the Board approve this resolution authorizing the System’s General Counsel and any specially-engaged outside counsel under her direction to file a lawsuit in a court of competent jurisdiction.
FINANCIAL IMPACT:

Any legal fees incurred to file the lawsuit will be paid from the System Fund, 2017 O&M budget (Company: 1000; Accounting Unit: 5000400; Account: 511320).

Nancy Belinsky
Vice President and General Counsel

APPROVED:

Robert R. Puente
President/Chief Executive Officer
RESOLUTION NO.

OF THE SAN ANTONIO WATER SYSTEM BOARD OF TRUSTEES AUTHORIZING THE FILING OF A LAWSUIT AGAINST K-BAR SERVICES, INC. IN CONNECTION WITH DAMAGES TO THE SYSTEM’S INFRASTRUCTURE; FURTHER AUTHORIZING THE SYSTEM’S GENERAL COUNSEL TO TAKE ALL NECESSARY ACTION RELATING TO SUCH LAWSUIT; FINDING THE RESOLUTION TO HAVE BEEN CONSIDERED PURSUANT TO THE LAWS GOVERNING OPEN MEETINGS; PROVIDING A SEVERABILITY CLAUSE; AND ESTABLISHING AN EFFECTIVE DATE

WHEREAS, on or about March 7, 2016, K-Bar Services, Inc. (“K-Bar”) damaged a 12-inch water main while drilling to install poles at or near the 13700 block of U.S. Highway 281 North, in San Antonio, Texas, resulting in significant damage to the water main and water loss to the San Antonio Water System (the “System”); and

WHEREAS, the System has sent demand letters to K-Bar to recover the System’s damages, K-Bar has failed to accept any financial responsibility for the incident, and has failed and refused to remit payment for the damages; and

WHEREAS, K-Bar and the System have been unable to resolve the disputes to date; and

WHEREAS, the System believes that its interests can be best preserved and protected by the filing of a lawsuit; and

WHEREAS, the San Antonio Water System Board of Trustees desires (i) to authorize the filing of a lawsuit against K-Bar in a court of competent jurisdiction; and (ii) to further authorize the System’s General Counsel and any specially-engaged outside counsel under her direction to take all necessary legal action relating to participation in the lawsuit as a party through final conclusion, including any appeals, as determined necessary by the General Counsel; now, therefore:

BE IT RESOLVED BY THE SAN ANTONIO WATER SYSTEM BOARD OF TRUSTEES:

1. That the filing of a lawsuit against K-Bar in a court of competent jurisdiction is hereby authorized.

2. That the System’s General Counsel and any specially-engaged outside counsel under her direction are hereby further authorized to take all necessary action relating to participation in the
lawsuit as a party as may be required through final conclusion, including any appeals, as determined necessary by the General Counsel.

3. It is officially found, determined and declared that the meeting at which this resolution is adopted was open to the public, and that public notice of the time, place and subject matter of the public business to be conducted at such meeting, including this resolution, was given to all as required by the Texas Codes Annotated, as amended, Title 5, Chapter 551, Government Code.

4. If any section, paragraph, sentence, phrase or word of this resolution is for any reason held to be unconstitutional, illegal, inoperative or invalid, or if any exception to or limitation upon any general provision herein contained is held to be unconstitutional, illegal, invalid or ineffective, the remainder of this resolution shall nevertheless stand effective and valid as if it had been enacted without the portion held to be unconstitutional, illegal, invalid or ineffective.

5. This resolution becomes effective immediately upon its passage.

PASSED AND APPROVED this 10th day of October, 2017.

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Berto Guerra, Jr., Chairman

ATTEST:

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Ernesto Arellano, Jr., Secretary
TO: San Antonio Water System Board of Trustees

FROM: Nancy Belinsky, Vice President and General Counsel

THROUGH: Robert R. Puente, President/Chief Executive Officer

SUBJECT: AUTHORIZATION TO FILE A LAWSUIT AGAINST SIGNAL SERVICE GROUP, INC. AND CATO DRILLING COMPANY

Board Action Date: October 10, 2017

SUMMARY AND RECOMMENDATION:

The attached resolution authorizes the filing of a lawsuit in a court of competent jurisdiction against Signal Service Group, Inc. (“Signal”) and CATO Drilling Company (“CATO”). The resolution also authorizes System’s General Counsel and any specially engaged outside counsel under her direction to take all necessary action relating to participation in the lawsuit as a party as may be required through final conclusion, including any appeals, as determined necessary by the General Counsel.

- On or about November 2, 2016, CATO, while working for Signal, damaged a 20-inch water main while installing a sign at or near 2410 Huebner Park, in San Antonio, Texas, resulting in extensive damage to the water main belonging to the San Antonio Water System (the “System”).

- The System sent several demand letters to Signal and CATO to recover the System’s damages, both Signal and CATO have failed to accept any financial responsibility for the incident, and failed to remit payment for the damages.

- The System is seeking and demanding payment from Signal and CATO in the amount of $7,913.36.

- Signal, CATO, and the System have been unable to resolve the dispute to date.

- The System believes that the System’s interests can be best preserved and protected by the filing of a lawsuit.

Staff recommends that the Board approve this resolution authorizing the System’s General Counsel and any specially-engaged outside counsel under her direction to file a lawsuit in a court of competent jurisdiction.
FINANCIAL IMPACT:

Any legal fees incurred to file the lawsuit will be paid from the System Fund, 2017 O&M budget (Company: 1000; Accounting Unit: 5000400; Account: 511320).

Nancy Belinsky  
Vice President and General Counsel

APPROVED:

Robert R. Puente  
President/Chief Executive Officer
RESOLUTION NO.

OF THE SAN ANTONIO WATER SYSTEM BOARD OF TRUSTEES AUTHORIZING THE FILING OF A LAWSUIT AGAINST SIGNAL SERVICE GROUP, INC. AND CATO DRILLING COMPANY IN CONNECTION WITH DAMAGES TO THE SYSTEM’S INFRASTRUCTURE; FURTHER AUTHORIZING THE SYSTEM’S GENERAL COUNSEL TO TAKE ALL NECESSARY ACTION RELATING TO SUCH LAWSUIT; FINDING THE RESOLUTION TO HAVE BEEN CONSIDERED PURSUANT TO THE LAWS GOVERNING OPEN MEETINGS; PROVIDING A SEVERABILITY CLAUSE; AND ESTABLISHING AN EFFECTIVE DATE

WHEREAS, on or about November 2, 2016, CATO Drilling Company (“CATO”), while working for Signal Service Group (“Signal”), damaged a 20-inch water main while installing a sign at or near 2410 Huebner Park, in San Antonio, Texas, resulting in extensive damage to the water main belonging to the San Antonio Water System (the “System”); and

WHEREAS, the System has sent demand letters to CATO and Signal to recover the System’s damages, CATO and Signal have failed to accept any financial responsibility for the incident and have failed to remit payment for the damages; and

WHEREAS, CATO, Signal and the System have been unable to resolve the disputes to date; and

WHEREAS, the System believes that its interests can be best preserved and protected by the filing of a lawsuit; and

WHEREAS, the San Antonio Water System Board of Trustees desires (i) to authorize the filing of a lawsuit against CATO and Signal in a court of competent jurisdiction; and (ii) to further authorize the System’s General Counsel and any specially-engaged outside counsel under her direction to take all necessary legal action relating to participation in the lawsuit as a party through final conclusion, including any appeals, as determined necessary by the General Counsel; now, therefore:

BE IT RESOLVED BY THE SAN ANTONIO WATER SYSTEM BOARD OF TRUSTEES:

1. That the filing of a lawsuit against CATO and Signal, in a court of competent jurisdiction is hereby authorized.

2. That the System’s General Counsel and any specially-engaged outside counsel under her direction are hereby further authorized to take all necessary action relating to participation in the
lawsuit as a party as may be required through final conclusion, including any appeals, as determined necessary by the General Counsel.

3. It is officially found, determined and declared that the meeting at which this resolution is adopted was open to the public, and that public notice of the time, place and subject matter of the public business to be conducted at such meeting, including this resolution, was given to all as required by the Texas Codes Annotated, as amended, Title 5, Chapter 551, Government Code.

4. If any section, paragraph, sentence, phrase or word of this resolution is for any reason held to be unconstitutional, illegal, inoperative or invalid, or if any exception to or limitation upon any general provision herein contained is held to be unconstitutional, illegal, invalid or ineffective, the remainder of this resolution shall nevertheless stand effective and valid as if it had been enacted without the portion held to be unconstitutional, illegal, invalid or ineffective.

5. This resolution becomes effective immediately upon its passage.

PASSED AND APPROVED this 10th day of October, 2017.

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Berto Guerra, Jr., Chairman

ATTEST:

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Ernesto Arellano, Jr., Secretary
TO: San Antonio Water System Board of Trustees
FROM: Nancy Belinsky, Vice President and General Counsel
THROUGH: Robert R. Puente, President/Chief Executive Officer
SUBJECT: AUTHORIZATION TO INTERVENE IN A LAWSUIT FILED BY JESUS MENDEZ-MONITA AGAINST JUAN GONZALEZ GONZALEZ, EPIFANIA GONZALEZ AND OMAR SOTO

Board Action Date: October 10, 2017

SUMMARY AND RECOMMENDATION:

The attached resolution authorizes the System to intervene in a lawsuit styled Jesus Mendez-Monita vs. Juan Gonzalez Gonzalez and Epifania Gonzalez, in Cause No. 2017-CI-14083, in the 131st Judicial District Court, Bexar County, Texas, wherein Omar Soto was added as a party Defendant (“Lawsuit”). The resolution also authorizes System’s General Counsel and any specially-engaged outside counsel under her direction to take all necessary action relating to participation in the Lawsuit as a party as may be required through final conclusion, including any appeals, as determined necessary by the General Counsel.

- The San Antonio Water System (“System”) seeks to recover damages and worker’s compensation benefits paid to Jesus Mendez (“Mendez”) from Defendants Juan Gonzalez Gonzalez, Epifania Gonzalez and Omar Soto (“Defendants”) and under any insurance policy of Defendants in connection with a vehicle collision involving the System’s employee, Mendez.

- The System sent several demand letters to Defendants’ insurance company American Access Casualty Company (“American Access”) to recover the System’s damages and worker’s compensation benefits paid to Mendez, but American Access has failed to accept financial responsibility for the incident, and failed and refused to remit payment for the damages and worker’s compensation benefits.

- The System is seeking and demanding payment from American Access in the amount of $68,739.43.

- American Access and the System have been unable to resolve the dispute to date.

- The System believes that the System’s interests can be best preserved and protected by the System’s intervening in the lawsuit previously filed by Mendez.
Staff recommends that the Board approve this resolution authorizing the System’s General Counsel and any specially-engaged outside counsel under her direction to intervene in the lawsuit filed by Mendez styled *Jesus Mendez-Monita vs. Juan Gonzalez Gonzalez and Epifania Gonzalez*, in Cause No. 2017-CI-14083, in the 131st Judicial District Court, Bexar County, Texas, wherein Omar Soto was added as a party Defendant.

**FINANCIAL IMPACT:**

Any legal fees incurred to file the lawsuit will be paid from the System Fund, 2017 O&M budget (Company: 1000; Accounting Unit: 5000400; Account: 511320).


Nancy Belinsky  
Vice President and General Counsel  

**APPROVED:**

Robert R. Puente  
President/Chief Executive Officer
RESOLUTION NO.

OF THE SAN ANTONIO WATER SYSTEM BOARD OF TRUSTEES AUTHORIZING THE INTERVENTION OF THE SYSTEM IN A LAWSUIT FILED BY JESUS MENDEZ-MONITA AGAINST JUAN GONZALEZ GONZALEZ, EPIFANIA GONZALEZ AND OMAR SOTO, IN CONNECTION WITH DAMAGES AND WORKER’S COMPENSATION BENEFITS PAID TO SAWS EMPLOYEE JESUS MENDEZ; FURTHER AUTHORIZING THE SYSTEM’S GENERAL COUNSEL TO TAKE ALL NECESSARY ACTION RELATING TO SUCH LAWSUIT; FINDING THE RESOLUTION TO HAVE BEEN CONSIDERED PURSUANT TO THE LAWS GOVERNING OPEN MEETINGS; PROVIDING A SEVERABILITY CLAUSE; AND ESTABLISHING AN EFFECTIVE DATE

WHEREAS, the San Antonio Water System (“System”) seeks to recover damages and worker’s compensation benefits paid to Jesus Mendez (“Mendez”) under a self-insured and self-administered worker’s compensation program in connection with a vehicle collision involving the System’s employee, Mendez, Juan Gonzalez Gonzalez, Epifania Gonzalez (the “Gonzalezes”) and Omar Soto (“Soto”); and

WHEREAS, Mendez filed suit against the Gonzalezes and Soto in Cause No. 2017-CI-14083, styled Jesus Mendez-Monita vs. Juan Gonzalez Gonzalez and Epifania Gonzalez, in the 131st Judicial District Court, Bexar County, Texas, wherein Soto was added as a party defendant (“Lawsuit”); and

WHEREAS, the System has sent demand letters to the Gonzalezes’ insurance company American Access Casualty Company (“American Access”) to recover the System’s damages, including damages to one of the System’s motor vehicles and for worker’s compensation paid to Mendez, but American Access has failed to accept any financial responsibility for the incident, and has failed and refused to remit payment for the damages and worker’s compensation benefits paid to Mendez; and

WHEREAS, the System is seeking and demanding payment from American Access in the amount of $68,739.43; and

WHEREAS, American Access and the System have been unable to resolve the disputes to date; and

WHEREAS, the System believes that the System’s interests can be best preserved and protected by the System’s intervening in the Lawsuit filed by Mendez against the Gonzalezes and Soto; and
WHEREAS, the San Antonio Water System Board of Trustees desires (i) to authorize the System in the intervening of the Lawsuit filed by Mendez against the Gonzalezes and Soto in a court of competent jurisdiction; and (ii) to further authorize the System’s General Counsel and any specially-engaged outside counsel under her direction to take all necessary legal action relating to participation in the Lawsuit as a party through final conclusion, including any appeals, as determined necessary by the General Counsel; now, therefore:

BE IT RESOLVED BY THE SAN ANTONIO WATER SYSTEM BOARD OF TRUSTEES:

1. That the System’s intervening in the Lawsuit filed by Mendez styled *Jesus Mendez-Monita vs. Juan Gonzalez Gonzalez and Epifania Gonzalez*, in Cause No. 2017-CI-14083, in the 131st Judicial District Court, Bexar County, Texas, wherein Soto was added as a party Defendant is hereby authorized.

2. That the System’s General Counsel and any specially-engaged outside counsel under her direction are hereby further authorized to take all necessary action relating to participation in the Lawsuit as a party as may be required through final conclusion, including any appeals, as determined necessary by the General Counsel.

3. It is officially found, determined and declared that the meeting at which this resolution is adopted was open to the public, and that public notice of the time, place and subject matter of the public business to be conducted at such meeting, including this resolution, was given to all as required by the Texas Codes Annotated, as amended, Title 5, Chapter 551, Government Code.

4. If any section, paragraph, sentence, phrase, or word of this resolution is for any reason held to be unconstitutional, illegal, inoperative or invalid, or if any exception to or limitation upon any general provision herein contained is held to be unconstitutional, illegal, invalid or ineffective, the remainder of this resolution shall nevertheless stand effective and valid as if it had been enacted without the portion held to be unconstitutional, illegal, invalid or ineffective.

5. This resolution becomes effective immediately upon its passage.

PASSED AND APPROVED this 10th day of October, 2017.

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Berto Guerra, Jr., Chairman

ATTEST:

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Ernesto Arellano, Jr., Secretary
TO: San Antonio Water System Board of Trustees

FROM: Darren Thompson, Director, Water Resources, and Donovan Burton, Vice President, Water Resources & Governmental Relations

THROUGH: Robert R. Puente, President/Chief Executive Officer

SUBJECT: APPROVAL OF SAN ANTONIO WATER SYSTEM 2017 WATER MANAGEMENT PLAN

Board Action Date: October 10, 2017

SUMMARY AND RECOMMENDATION:

The attached resolution approves the San Antonio Water System (SAWS) 2017 Water Management Plan (2017 WMP). SAWS long-range water planning began with the adoption of the Securing Our Water Future Together (1998 Plan). Subsequent plans were approved in 2005, 2009, and 2012. The SAWS Water Management Plans facilitate refining the long-range planning efforts by incorporating new information on service area population, new gallons per capita per day (GPCD) goals, updates current and planned water supply projects, establishing nonrevenue water goals, describes water supply integration, climatic conditions, risk management, financial planning, and community participation and input. The 2017 WMP is the most recent iteration of SAWS water resource planning efforts. A new SAWS Water Management Plan was necessary because of the following:

- **City of San Antonio (COSA) Population Projections** – In 2014, COSA adopted population projections from the Metropolitan Planning Organization for planning purposes. Since COSA city limits and the SAWS Certificate of Convenience and Necessity boundaries do not match, SAWS utilized the growth rates from COSA to project SAWS population projections for this plan. The 2017 WMP, using growth rates from COSA, projects SAWS service area population to increase from 1.8 million in 2017 to approximately 3.3 million by 2070.

- **Progressive GPCD Goals** – With professional, public, and academic feedback from the 2012 WMP, SAWS has planned for, and will strive to reduce its total GPCD during average years from 124 to 88 over the planning horizon. The 2017 WMP includes a summary of ongoing conservation strategies in order to achieve these water saving goals, and those strategies will continue to adapt and optimize changing conditions going forward.

- **Increased Aquifer Storage and Recovery (ASR)** – The 2017 WMP establishes a new planned capacity of 200,000 acre-feet of storage volume based on studies performed since the implementation of the 2012 WMP. The updated planned capacity is 80,000 acre-feet greater than previous planning projections. SAWS is well on its way to maximizing the storage capacity with current storage in excess of 140,000 acre-feet. The new storage totals
are significant even after SAWS recovered large volumes of water during the 2011-2014 drought, proving the resilience of the ASR.

- **Implementation of the Edwards Aquifer Habitat Conservation Plan (EAHCP)** – Implementation of the nationally recognized EAHCP has been undertaken by a remarkably diverse set of stakeholders and interest groups from throughout the Edwards Aquifer region. This regional commitment to the cornerstone of the regional water supply is incorporated heavily throughout the 2017 WMP.

- **Continued Diversification** – SAWS has made considerable progress toward diversification and reduced demand on potable water resources. Since 1998, the recycled water, ASR, Western Canyon, Local Carrizo, Regional Carrizo, Medina System, Canyon Regional Water Authority, Trinity, and Brackish Desalination projects have come online. This diversified water supply portfolio reduces SAWS reliance on the Edwards Aquifer as well as adding valuable resources to continue meeting the needs of our growing community. To further reduce San Antonio’s dependence on the Edwards Aquifer in the years to come, the Vista Ridge project is currently under construction and, once delivery begins in 2020, will meet the added demands through 2050. In addition to Vista Ridge, the expansion of the Carrizo Aquifer production in Bexar County and buildout of the brackish groundwater desalination plant will meet demands through 2070.

- **Planning for a more Severe Drought** – The 2017 WMP also takes a unique approach to recognizing extreme weather patterns, and the possibility of these patterns increasing into the future. Previous water management plans have been based solely on the 1950’s Drought of Record; however, we also have experienced more intense droughts and rainfall events over the past decade. Based on the 2011-2014 drought intensity and the duration of the 1950s Drought of Record, SAWS is planning for more severe hydrological and regulatory constraints by merging the data from both droughts into one more intense new hybrid drought of record.

- **Additional Items Incorporated** – The 2017 WMP addresses nonrevenue water, supply integration, and climatic conditions for the first time. Nonrevenue water – goals to reduce the amount of unbilled water within the system. Integration – planned pipelines for water supply integration of new supplies into the SAWS distribution system. Climatic Conditions – meeting demand through increasing temperatures and more variable rainfall patterns.

A Task Force consisting of the President/Chief Executive Officer, Executive Management, and Legal Counsel, after multiple planning meetings, has recommended the 2017 WMP for Board consideration. Attachment I to the resolution is the recommended 2017 WMP as presented by staff. Staff has completed an extensive public outreach program at the direction of the Board in an effort to incorporate public comment early into the development of this plan. Briefings have been provided to community advisory/stakeholder groups, and elected officials to acquire public input. A considerable amount of input from the community meetings and emails have been
incorporated throughout the final 2017 WMP. The new 2017 WMP is the recommended path to provide water security to San Antonio and regional communities through 2070, further strengthening our future.

Staff recommends that the Board approve this resolution.

**FINANCIAL IMPACT:**

This action does not authorize the appropriation or the expenditure of funds. The 2017 WMP does provide estimated costs for annual operations & maintenance and annual debt service payments for each project (in 2017 dollars) as shown in Figure 16-1 of the 2017 WMP. With the exception of the Vista Ridge Water Supply Project, Desalination Project Phases II & III, and the Expanded Carrizo Program, all of the projects have been completed. For each uncompleted project, the costs shown are estimated to begin to be incurred at the time of project completion.

署名:

Darren Thompson
Director
Water Resources

Donovan Burton
Vice President
Water Resources and Governmental Relations

APPROVED:

Robert R. Puente
President/Chief Executive Officer
RESOLUTION NO.

OF THE SAN ANTONIO WATER SYSTEM BOARD OF TRUSTEES APPROVING THE SAN ANTONIO WATER SYSTEM 2017 WATER MANAGEMENT PLAN; FINDING THIS RESOLUTION TO HAVE BEEN CONSIDERED PURSUANT TO THE LAWS GOVERNING OPEN MEETINGS; PROVIDING A SEVERABILITY CLAUSE; AND ESTABLISHING AN EFFECTIVE DATE

WHEREAS, in 1998, the San Antonio City Council (the “City Council”), acting upon the recommendation of the San Antonio Water System (the “System”) Board of Trustees (the “Board”), endorsed the Securing Our Water Future Together (the “1998 Plan”) of the System; and

WHEREAS, in connection with the endorsement of the 1998 Plan and subsequent approval in 2000 of a multi-year funding mechanism to implement the plan, the City Council established a requirement that the System periodically review the 1998 Plan and make necessary adjustments in response to new policies, changing circumstances, and new technologies; and

WHEREAS, in 2005, the System’s Board adopted the Water Resource Plan 2005 Update; and

WHEREAS, in 2009, the System’s Board adopted the 2009 Water Management Plan Update; and

WHEREAS, in 2012, the System’s Board adopted the 2012 Water Management Plan; and

WHEREAS, the System staff has recently completed a comprehensive review and analysis of the System’s water management plan; and

WHEREAS, a Task Force consisting of the President/Chief Executive Officer, Executive Management, and Legal Counsel, after multiple planning meetings, has recommended the 2017 Water Management Plan (the “2017 WMP”) for Board consideration; and

WHEREAS, the 2017 WMP includes updates to population and demand projections, implementation of the Edwards Aquifer Habitat Conservation Plan, continued commitment to diversification, an updated Drought of Record, as well as, a new storage target for Aquifer Storage and Recovery; and

WHEREAS, new sections have been incorporated that include new nonrevenue water reduction goals, approach to new water supply integration, and planning for future climatic conditions; and
WHEREAS, the System staff has completed an extensive public presentation of the 2017 WMP and received public comments on the System’s water management plan; and

WHEREAS, the 2017 WMP attached hereto as Attachment I has been prepared by the System’s staff and reflects the objectives, methodology, analysis, and recommendations of the staff and public input with regard to the System’s water management plan; and

WHEREAS, the San Antonio Water System Board of Trustees desires to approve the San Antonio Water System 2017 Water Management Plan; now, therefore:

BE IT RESOLVED BY THE SAN ANTONIO WATER SYSTEM BOARD OF TRUSTEES:

1. That the 2017 WMP attached hereto as Attachment I and incorporated herein for all purposes is hereby approved.

2. It is officially found, determined and declared that the meeting at which this resolution is adopted was open to the public, and that public notice of the time, place and subject matter of the public business to be conducted at such meeting, including this resolution, was given to all as required by the Texas Codes Annotated, as amended, Title 5, Chapter 551, Government Code.

3. If any part, section, paragraph, sentence, phrase or word of this resolution is for any reason held to be unconstitutional, illegal, inoperative or invalid, or if any exception to or limitation upon any general provision herein contained is held to be unconstitutional, illegal, invalid or ineffective, the remainder of this resolution shall nevertheless stand effective and valid as if it had been enacted without the portion held to be unconstitutional, illegal, invalid or ineffective.

4. This resolution becomes effective immediately upon its passage.

PASSED AND APPROVED this 10th day of October, 2017.

____________________________
Berto Guerra, Jr., Chairman

ATTEST:

____________________________
Ernesto Arrellano, Jr., Secretary

Attachment:
I. San Antonio Water System 2017 Water Management Plan
2017 Water Management Plan
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**ON THE COVER:** San Antonio Water System’s commitment to the community’s water future is exemplified by new water supply projects such as the Vista Ridge public-private partnership (top), conservation outreach efforts such as its annual Spring Bloom gardening festival (middle), and innovative technology such as its new brackish groundwater desalination plant (bottom).
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As San Antonio approaches a celebration of its 300th founding anniversary, and as San Antonio Water System celebrates its 25th anniversary, it’s important to note how water was a critical factor in the founding of the city and continues to be the cornerstone of its vitality and development.

In its relatively short history, SAWS is now one of the largest municipal water utilities in the country providing water and wastewater services for more than 1.8 million people in San Antonio and surrounding areas. Nationally recognized for sustainable and responsible management, SAWS oversees existing water supplies while developing new water sources for the future – helping diversify its water supply and ensuring sustainable, affordable water services for generations.

The Water Management Plan serves as a guide to meet San Antonio’s future water needs. SAWS’ first Water Management Plan was developed in 1998, introducing projected water demands and identifying the framework of future water sources to meet these demands. Since that first plan, SAWS has continuously produced updates incorporating changes in population, water demand patterns, regulations, and water supply options providing a clear direction for implementation. Significant changes required updates to the Water Management Plan in 2005, 2009, and 2012. The most extensive revision occurred in 2012, with the assumption of the former Bexar Metropolitan Water District and the incorporation of the Edwards Aquifer Habitat
Conservation Plan. Since the adoption of the 2012 Water Management Plan, SAWS has completed the Regional Carrizo (Gonzales County) and Brackish Groundwater Desalination (Bexar County) projects, participated in successful implementation of the Edwards Aquifer Habitat Conservation Plan, exceeded GPCD expectations, and navigated through the worst drought since the 1950’s drought of record. The 2017 Water Management Plan further refines and improves on the 2012 Water Management Plan utilizing better modeling tools, greater operational knowledge of diversified supplies through drought, disaggregated customer demands, risk management, as well as an improved understanding of climatic conditions. This plan is the starting point for securing San Antonio’s water future.

On the local level, implementing this plan will require incorporation into annual operations and capital improvement budgets and may require revisions to various City of San Antonio ordinances as well as SAWS policies and procedures. The plan will also be incorporated into the State of Texas Water Plan through the regional planning process. The 2017 Water Management Plan continues the long-standing tradition of planning for and implementing a balanced mix of water supply projects and progressive water conservation programs.

**Diversified Water Supply**

SAWS boasts the largest direct recycled water system in the country, the largest groundwater based Aquifer Storage & Recovery (ASR) facility in the nation, and several innovative infrastructure-sharing arrangements with regional partners. In addition, SAWS recently opened the Brackish Desalination Plant at H2Oaks Center with the capacity to produce 12 million gallons of drinking water daily.

Since the 2012 Water Management Plan, several significant events have occurred to secure San Antonio’s water future:

- Regional Carrizo Water Project was brought on line in 2013, providing more than 10,000 acre-feet of water in both 2015 and 2016 from the Carrizo Aquifer in Gonzales County to San Antonio.
- SAWS ASR at H2Oaks has reached a record storage volume of more than 143,000 acre-feet, which is over half a year’s potable demand.

With plans to be on line in early 2020, SAWS is actively working on the 142-mile Vista Ridge project – the newest water resource to continue diversifying the city’s water supply.
supply. As one of the largest water Public-Private Partnerships (P3), this project is being led on the private company side by Garney Construction. Design for the project is well advanced, well drilling has begun and pipe is being put in the ground. When it comes on line, this game-changing project will satisfy 20 percent of SAWS demand, and serve as added protection for the Edwards Aquifer during drought conditions.

With the addition of the Vista Ridge project, SAWS’ already robust water supply inventory will be increased to feature 16 different water supply projects from nine different water sources. By continuing to develop non-Edwards Aquifer supplies, SAWS will continue to reduce its reliance on the Edwards Aquifer throughout the planning period. This dedication to diversification and commitment to strategic water planning ensures San Antonio will have plentiful water for generations to come.

*Figure 1-1: SAWS will continue to reduce reliance on the Edwards Aquifer by bringing in new supplies, as seen in its planned inventory during drought years.*

**World Class Water Conservation**

San Antonio’s long-standing commitment and investment in water conservation and infrastructure improvements has yielded its largest water supply. SAWS’ total per capita water consumption has decreased significantly from 225 gallons per capita per day (GPCD) in 1982 to 117 GPCD in 2016, which has resulted in approximately 3.2 million acre-feet of cumulative savings. Using today’s larger population, a total per capita of 225 GPCD would require an additional 215,000 acre-feet of water per year. SAWS has successfully cultivated an ethic of conservation and invested in infrastructure over the past 35 years and effectively reduced GPCD by approximately 50 percent, all while SAWS’ service area population has grown by approximately 150 percent.
Water conservation continues to be a strategy for long-term water supply. New water conservation investments are projected to result in approximately 4.3 million acre-feet of cumulative water savings by 2070, and will replace the need for approximately 132,000 acre-feet per year of new water projects.

Over the last five years, many initiatives have contributed to SAWS’ progress in extending San Antonio’s water supplies through conservation. Highlights of newer programs include:

- Over 2 million square feet of water-intensive grass has been replaced with low water-use plants or permeable patios through WaterSaver Landscape Coupon programs.
- WaterSaver Irrigation Consultations providing home irrigation and landscape education visits have reduced household usage by 84 million gallons every year.
- The GardenStyleSA.com website and e-newsletter providing timely San Antonio-focused low water use landscape information to reduce outdoor watering.
- SAWS has partnered with The University of Texas at Austin based Pecan Street to develop an integrated conservation platform that will expand water conservation opportunities in the future.

SAWS’ 2017 Water Management Plan assumes a total demand in 2070 that is approximately 75,000 acre-feet per year less than the 2012 Water Management Plan.
SAWS’ 2017 Water Management Plan strives for a reduction of residential consumption to 55 GPCD by 2070, and a total consumption (to include commercial, industrial and non-revenue water) of 88 GPCD by 2070.

*Figure 1-3:* SAWS aims to achieve a total GPCD of 88 by 2070 for a total demand of 324,000 AFY. If SAWS were to remain at 124 GPCD through 2070, SAWS demand would be an additional 132,000 AFY, as identified in the light gray bars below.

Even with a significantly higher population projection than the 2012 Water Management Plan, the 2017 Water Management Plan assumes a total demand in 2070 that is approximately 74,000 acre-feet per year less than the 2012 Water Management Plan, as a result of SAWS’ realized and anticipated water savings from conservation.

**Visionary Planning**

SAWS’ 2017 Water Management Plan introduces a number of topics of growing public interest that are new to the document, although not new to SAWS planning. For the first time, SAWS customers will be able to see how SAWS projects demand by customer class (versus total demand), using its disaggregated demand model. One component of SAWS demand is how much water is accounted for as nonrevenue, which this document expands upon in Section 6.

Acknowledging that the climate may become more challenging in the future, the 2017 Water Management Plan includes comprehensive preparations for historic drought scenarios. In collaboration with the City of San Antonio (CoSA), SAWS has begun to
evaluate the potential challenges posed by more extreme weather conditions, and believes that it is uniquely well positioned to manage those challenges, as outlined in Section 13. One way that SAWS is incorporating these issues is by planning for a more severe, hybrid Drought of Record, which merges the duration of the drought of the 1950s with the intensity of the 2011-2014 drought. This hybrid model results in an additional cutback to SAWS Edwards Aquifer permit of one-half percent during three years of the nine-year drought period. Stated another way, SAWS permitted Edwards Aquifer inventory reduces during that nine-year drought period from 1,645,000 acre-feet, to 1,639,000 acre-feet. This is being done to add conservatism to this plan, and to account for changing climatic conditions. This hybrid Drought of Record is a layer of conservatism that is in addition to the layer of conservatism that SAWS has been using for its last two Water Management Plans: projecting supply and demand during a 108-month drought, versus the 77-month drought used in the State Water Plan.

Section 12 of this document addresses the increasingly important topic of water supply integration, as SAWS continues to diversify and grow its water supply portfolio. Finally, in order to convey all of these exciting new features, SAWS is leveraging technology and social media to inform customers and solicit input, as discussed in Section 17.

**Waterful Solutions – One Regional Water Community**

Coined by the US Water Alliance, the One Water approach re-frames the urban water cycle as a single integrated system, in which all flows are recognized as potential resources. Within this system, the interconnectedness of surface water, groundwater, stormwater and wastewater is optimized. The One Water approach strives for greater coordination among diverse stakeholders, recognizing that water quantity and quality depends on multi-faceted collaborations. San Antonio leads the country in Waterful solutions – providing sustainable innovations for water management and developing holistic water solutions for the San Antonio area.

**Sustainability**

As a nationally recognized leader in water conservation, SAWS demonstrates its commitment to sustainability through significant investments in conservation programs. Early conservation efforts achieved significant reductions in indoor usage at homes and businesses. Newer programs are primarily aimed at achieving reductions in outdoor irrigation through a wide variety of education efforts, incentive programs, and development of reasonable regulations for both residences and businesses.
San Antonio is building resiliency via a number of different strategies, including but not limited to the following:

- SAWS helps businesses reclaim condensate water for use on-site as irrigation or other non-potable applications.
- Accomplishment of the trifecta in wastewater treatment:
  - Highly treated effluent water is reused in the largest direct recycled system in the U.S.
  - Methane gas is captured and sold on the natural gas market.
  - Solids are reused and sold as compost.
- Generating and saving energy:
  - Partnering with CPS Energy to develop a 20 MW solar panel field on SAWS property, among the largest solar fields in the state.
  - Implementing peak energy avoidance programs at SAWS’ Water Recycling Centers.

**Community Partnerships**

- Volunteer committees such as the Citizens Advisory Panel and Community Conservation Committee provide valuable customer insight to the SAWS Board of Trustees and management on water and conservation projects.
- Community and environmental groups worked with SAWS to develop Mitchell Lake Audubon Center, a natural wonder that attracts people from around the world and helps educate current and future generations on the environment.
- SAWS has seven programs to ease the burden of utility costs for customers who qualify: Project Agua, Affordability Discount, Disability Billing, Courtesy Notice, Senior Citizen Billing, Plumbers to People, and Laterals to People. These programs help ensure all residents have access to life-sustaining water and sewer services. SAWS works with CoSA Department of Human Services on several programs. SAWS has nearly 25,000 people enrolled in the Affordability Discount Program, as of August 2017. SAWS also allocates over $200,000 annually to Project Agua, its payment assistance program. It is also worth noting
that SAWS water rates continue to utilize a tiered structure to incentivize lower water consumption, while striving to ensure that life essential uses of water are made as affordable as possible.

*Figure 1-5: Waterful Solutions – Local and regional partnerships allow for a unified One Water approach to water management and conservation.*

Regional Agency Partnerships

- Through coordination with the Edwards Aquifer Authority (EAA), San Antonio River Authority (SARA), and CoSA, SAWS’ efforts help ensure high water quality and healthy waterways. SAWS assists customers in creating rain gardens through the WaterSaver Landscape Coupon program, as well as collaborating with SARA on this and many other sustainability initiatives.
The Regional Carrizo Water Project was developed in coordination with the Schertz-Seguin Local Government Corporation, utilizing a shared pipeline to bring water pumped in Gonzales County to San Antonio, saving both entities millions of dollars.

SAWS continues to participate in the very successful Edwards Aquifer Habitat Conservation Plan, the largest such plan in the country in terms of financial contributions, covered species and mitigation activities.

Since 2003, SAWS has been proactive in identifying potentially impacted wells surrounding H2Oaks. As of mid-2017, over $6.4 million has been spent, mitigating 159 wells.

SAWS supports local communities in Gonzales County to ensure any potential water supply impacts from the Regional Carrizo project will be mitigated, having spent $1.8 million in communities in Gonzales County. These measures include executing separate agreements with the City of Nixon to rehabilitate existing wells and Gonzales County Water Supply Corporation to drill a new well. Additionally, SAWS participates in a well mitigation fund managed by the Gonzales County Underground Water Conservation District, which provides mitigation assistance to local landowners.

The Vista Ridge project is located in Burleson and Milam Counties within the jurisdiction of the Post Oak Savannah Groundwater Conservation District. The District is developing a Groundwater Well Assistance Program for the purpose of ensuring uninterrupted water supply to District well owners.

Innovation

The nation’s newest inland desalination plant – H2Oaks Center – is the only known place in the U.S. that maximizes efficiency by providing three different sources of water from one site:

- Desalinated brackish water from deep underground Bexar County
- Water stored in the ASR that was originally permitted from the Edwards Aquifer
- Locally pumped Carrizo Aquifer water

Vista Ridge, the newest water project currently under construction, is one of the most innovative water projects in the country, and has become a global model of public-private partnerships. Through unprecedented public contract negotiations, this privately developed, regionally based water project protects San Antonio ratepayers from development and regulatory risk during the 30-year contract term.
CoSA’s Office of the City Manager and Office of Innovation have initiated a forum to develop a community-wide vision for San Antonio as a Smart City. SAWS Department of Continuous Improvement and Innovation, among others, are participating in this important effort, along with virtually every major public and private stakeholder in the community.

Through SAWS’ participation in the state-wide Technology Approval Group, SAWS has been working with Isle, an independent technology and innovation consultant forum that facilitates connecting mature innovation opportunities with a utility’s customized needs. Participating in these synergistic collaborations has numerous benefits, both for SAWS and its peer organizations.

**Water for Generations**

Through the development of diversified water supply projects, advanced water conservation efforts, and the efficient management and operation of its water supplies, SAWS will have water security in the driest of dry times through at least 2070.

*Figure 1-6: SAWS ensures water for generations by setting progressive demand goals with stage 1 and 2 landscape watering restrictions, and then evaluating the need to develop future planned supplies. Scenario below represents a Drought of Record.*

WaterCitySA.com
The SAWS Board of Trustees and management recognized significant changes that have occurred over the last five years. This began a new round of water supply planning, including critical review of supply, demand, conservation, nonrevenue water, integration, climatic conditions, risk management, financial impacts, and community perspectives. The task force that worked on developing the new plan consisted of:

- Robert R. Puente, President/CEO
- Mary Bailey, Vice President Accounting & Business Planning
- Andrea Beymer, Vice President Engineering & Construction
- Donovan Burton, Vice President Water Resources & Governmental Relations
- Steve Clouse, Senior Vice President & Chief Operating Officer
- Doug Evanson, Senior Vice President & Chief Financial Officer
- Steve Kosub, Esq., Senior Water Resources Counsel
- Gavino Ramos, Vice President Communications & External Affairs
San Antonio’s location provides unique water opportunities and challenges. Three areas key to water analysis and planning are: Geography; geology; and climate.

**Geography**

SAWS’ service area encompasses 967 square miles in Bexar County and parts of four surrounding counties. SAWS’ service area includes the city limits of San Antonio and several smaller incorporated cities, as well as surrounding unincorporated areas. Elevations vary from about 500 feet above sea level in the southeast to more than 1,400 feet above sea level in the northwest.

The San Antonio Economic Development Foundation estimates that the 2016 population of the city of San Antonio was 1,440,900. The U.S. Census Bureau estimates the 2016 population of Bexar County to be 1,928,680. The estimated 2017 population projection for the SAWS service area is 1,817,387 people. The Bureau currently ranks San Antonio as the second largest city in Texas and the seventh largest city in the U.S.
Geology
The San Antonio region overlies portions of four major aquifers. The most notable is the Edwards Aquifer, a prolific karst limestone aquifer which has always served as San Antonio’s cornerstone source of water supply. SAWS also utilizes to a lesser degree water resources from the Trinity Aquifer, the Carrizo Aquifer and the Wilcox Aquifer.

Climate
San Antonio’s climate is classified as modified humid subtropical. Its location between a semi-arid area to the west and a much wetter and more humid area to the east often results in large variations in monthly and annual precipitation amounts. The average high monthly temperatures range from 62 degrees in January to 95 degrees in July and August. The average low monthly temperatures range from 39 degrees in January to 74 degrees in July and August. The 30-year average (1981-2010) annual precipitation for San Antonio is 32 inches. Perhaps more significant than annual total rainfall is that rainfall is highly variable. Long dry periods can be punctuated by some of the highest rainfall intensities in the world.

Climate variability increases the difficulties in water management planning.

The combined impacts of geography, geology and climate impact both water supply and water demand in complex ways. Extreme weather can reduce availability of some water supplies, while concurrently increasing demand for water (or vice versa). SAWS deploys a variety of strategies to manage this challenge that include supply diversification, adding drought-firm supplies, and reducing weather-related water demand through focused water conservation initiatives.
SAWS has one of the most diversified and innovative water supply portfolios in the country. Over the last 20 years, SAWS has been a national leader in developing water supply for the purposes of reducing its reliance on the Edwards Aquifer and diversifying its portfolio, planning for one of the highest population growth corridors in the nation, and preparing for drought. San Antonio leadership has worked over these last 20 years to radically change the water supply situation, thereby sustaining a thriving economy.

In planning for future water supplies, SAWS applies Drought of Record (DOR) conditions to all water supplies in its current inventory to calculate firm yield. The drought of the 1950s in Texas is widely recognized as the Drought of Record for water resource planning purposes (SAWS plans for 108 months of drought and Texas Water Development Board (TWDB) plans for 77 months of drought). Firm yield is defined by SAWS as the volume of water which can be produced from a specific source during a repeat of the Drought of Record under existing regulatory, legal, contractual, hydrological or infrastructure constraints. An innovative feature of SAWS’ 2017 Water Management Plan is that the hydrological and regulatory constraints experienced in the 2011-2014 drought and the 1950-1958 drought were merged, to create a more severe, hybrid Drought of Record which adds a level of conservatism to water supply planning.

SAWS has numerous water supply contracts with various terms and expiration dates. Water supplies available by contract will not be accounted for after the term in which the current contract expires, unless an extension option for SAWS is unilateral. This
assumption by SAWS is not an evaluation of the merits of these contracts or supplies which are not assumed to be extended, but is simply an equitable methodology for planning purposes.

SAWS currently has access to the following supplies for providing water:

**Edwards Aquifer Authority (EAA) Permit**

The Edwards Aquifer has been, and will continue to remain, the cornerstone of San Antonio’s water supply. SAWS currently holds permits issued by the EAA to produce approximately 292,000 acre-feet per year of Edwards Aquifer groundwater with approximately 88 percent of this amount owned and the remainder under lease to SAWS. Production under these permits is subject to regulatory cutbacks up to 44 percent during periods of drought. In addition to the regulatory cutbacks, SAWS has agreed to not produce approximately 8,000 acre-feet per year through 2027 for the benefit of the Edwards Aquifer Habitat Conservation Plan (EAHCP). In another agreement for the benefit of the EAHCP, SAWS has agreed to reduce (forebear) pumping by up to 46,300 acre-feet during any single year or 126,000 acre-feet aggregate during the term of the agreement under conditions replicating the 1950s Drought of Record. SAWS has conservatively planned for the continuation of this EAHCP commitment throughout the planning horizon. In order to successfully meet the needs of both SAWS customers and the EAHCP, SAWS will reduce its reliance on the Edwards Aquifer by approximately 11,000 acre-feet per year, through the non-renewal of yet-to-be-determined Edwards Aquifer lease agreements. The reduction in Edwards Aquifer inventory allows for a more successful implementation of the flow protection measures identified to fulfill the goals of the EAHCP. SAWS is to maintain approximately 281,000 acre-feet per year of EAA-permitted groundwater withdrawal rights, through a variety of procurement methods, including buying, leasing, and/or a potential dry year option.
- **Edwards Aquifer Habitat Conservation Plan (EAHCP)** – Development and implementation of the nationally recognized EAHCP has been undertaken by a remarkably diverse set of stakeholders and interest groups from throughout the Edwards Aquifer region. The EAHCP will be in place until 2027; however, the necessity to balance the needs of the human users of the Edwards Aquifer and the federally-listed threatened and endangered species associated with it will remain. Some form of aquifer management for periods of record-breaking drought stress will be required to continue. While those future forms of aquifer management cannot be predicted, SAWS has chosen to continue to represent the EAHCP commitment on the water supply and demand charts beyond the expiration of the present EAHCP.

- **Water Quality – Protecting the Edwards Aquifer** – As previously mentioned, the Edwards Aquifer is San Antonio’s cornerstone supply of water. Protecting the water quality of this resource is of the utmost importance to San Antonio and the surrounding region. As described in the Natural Resources and Environmental Sustainability planning element of the CoSA’s SA Tomorrow Comprehensive Plan, SAWS’ water quality protection program is one of the most aggressive in the state of Texas. SAWS implements a number of programs directed at protecting the watershed that provides source water to this wonderful resource by enforcement of regulatory requirements, review and analysis of development plans over the recharge zone, monitoring of construction sites, utilizing an extensive sampling and monitoring network for water quality compliance, and stormwater education among others. SAWS along with the CoSA has made progress ensuring that this natural resource will always remain the cornerstone of San Antonio’s water supply.

*Figure 3-1: The Texas blind salamander is one of eight species in the Edwards Aquifer ecosystem that have been designated as either threatened or endangered.*
Sensitive Land Acquisition Program

- As a result of propositions in 2000, 2005, 2010, and 2015 elections, San Antonio citizens have overwhelmingly voted in support of a 1/8-of-a-cent addition to the sales tax, for purchasing conservation easements that will protect the sensitive land located over the Edwards Aquifer recharge zone and contributing zone. The Edwards Aquifer Protection Program (EAPP) has balanced growth with land and water stewardship by conserving approximately 146,000 acres, to date.

Aquifer Protection

- Implementing a series of programs comprising aquifer protection and evaluation including: groundwater resource protection, industrial compliance, construction compliance, sampling and monitoring, and fats, oils and grease abatement.

- As part of these protection programs, SAWS reviews and analyzes development plans over the recharge zone of the Edwards Aquifer. Following the development of the properties, inspections and testing occur to ensure approved protections are maintained and functioning.

- In partnership with the San Antonio Police Department and CoSA’s Solid Waste Management Department, SAWS hosts Med Drop SA, a safe and easy way to dispose of unwanted medicines. Medications are accepted at no charge, and disposed of in a safe, legal way – keeping these drugs off San Antonio streets and out of the environment. Since the program’s inception in 2009, over 40,000 pounds have been collected.

- A water quality monitoring program is in place to assist in improving the quality of water flowing through streams ultimately providing beneficial recharge to the Edwards Aquifer.

- Special care is given to ensure wastewater is safely transported across the Edwards Aquifer recharge zone without any adverse impacts. The wastewater collection system over the recharge is inspected every five years with mechanical components inspected annually. These inspections are designed to proactively identify threats before they occur.

SAWS will continue to work with CoSA and others to ensure the water quality of the Edwards Aquifer is protected for generations to come.
H₂Oaks Center

Located 20 miles south of downtown San Antonio in southern Bexar County, the SAWS H₂Oaks Center is the only known location in the U.S. where a utility produces three different water supplies at one location. With the H₂Oaks Center over the Carrizo-Wilcox formations, SAWS is able to serve the public through the production of freshwater from the Carrizo Aquifer, the production of brackish groundwater from the Lower Wilcox Aquifer at the Brackish Groundwater Desalination facility, and the recovery of stored Edwards Aquifer water from the Aquifer Storage and Recovery project. In keeping with South Texas tradition, SAWS leases the land back to its original owners for continued agricultural use and cattle grazing.

SAWS desalination represents a wholly new, abundant, drought-proof water supply.

**Figure 3-2: Geologic cross section below the SAWS H₂Oaks Center (not to scale).**

- **Aquifer Storage and Recovery (ASR) Facility** – The SAWS ASR has been an unquestioned success, and has become the largest groundwater-based ASR in the nation. This valuable asset allows SAWS to store Edwards Aquifer water during wet times or low demand seasons, and to recover that water during droughts, periods of peak usage, or other times when demand on the Edwards Aquifer is high. SAWS recovered over 50,000 acre-feet of stored Edwards Aquifer water.
water during the record-breaking drought between 2011 and 2014. Thanks to above average rainfall, SAWS was able to store nearly 20,000 acre-feet of Edwards Aquifer water in 2015, and more than 35,000 acre-feet in 2016. SAWS’ trailblazing project has been so successful that it plays a prominent role in the EAHCP developed to withstand a recurrence of drought similar to the 1950s Drought of Record in the Edwards Aquifer region. SAWS has stored over 143,000 acre-feet of water in the facility, which is available for use. Over 70,000 acre-feet of the total storage volume has been contributed by the EAA to offset Edwards Aquifer pumping limitations imposed on SAWS by the EAHCP agreement during times of extraordinary drought, as discussed above. SAWS plans for a total storage volume of approximately 200,000 acre-feet. This level of storage has been supported by recent studies which have estimated total storage capacity of 200,000 acre-feet or more.

- **Carrizo Aquifer Groundwater in Bexar County** – SAWS has access to a total of 9,900 acre-feet per year of Carrizo Aquifer groundwater from property owned by SAWS in southern Bexar County. A portion of that access is derived from wells located on SAWS’ H₂Oaks property, and a portion is derived from wells located proximal to that property.

- **Brackish Groundwater Desalination (BGD) Phase I** – Development of this water resource in close proximity to San Antonio will diversify SAWS water resources portfolio with a wholly new, abundant, drought-proof supply. The BGD program involves the production of brackish (salty) groundwater from the Lower Wilcox Aquifer in southern Bexar County, and reverse osmosis treatment to drinking water quality standards at the SAWS H₂Oaks Center. Phase I of the BGD program is fully constructed, consisting of new production wells, a conveyance pipeline, concentrate disposal wells and disposal pipeline, and a

![Figure 3-3: Racks of reverse osmosis membranes remove dissolved solids from brackish groundwater at the SAWS H₂Oaks Center desalination plant in southern Bexar County.](image)
reverse osmosis treatment plant. Phase I of this innovative water supply project provides up to 13,440 acre-feet per year of firm water supply. The facility is designed for expansion in two phases to produce up to an additional 20,000 acre-feet per year.

Trinity Aquifer
SAWS has three contracts to purchase groundwater from privately owned Trinity Aquifer projects and one SAWS-owned project in North Central San Antonio. By utilizing this water source, as opposed to pushing Edwards Aquifer water uphill, SAWS customers save on avoided operating and energy costs. In the 2012 Water Management Plan, SAWS considered its Trinity Aquifer supply to be firm at 2,000 acre-feet per year. As a result of both valuable experience gained during the recent drought, as well as thoughtful and sustainable management, SAWS now considers its supply from the Trinity Aquifer to be 16,100 acre-feet per year in average years, and firm at 4,000 acre-feet per year. For long-term planning purposes, SAWS assumes termination of its contract with Water Exploration Company (WECO) in 2027, termination of its contract with Bulverde Sionkner Ranch (BSR) in 2020, and extension of its contract with Oliver Ranch to 2035.

Canyon Lake
SAWS has a contract with the Guadalupe-Blanco River Authority to purchase between 4,000 and 9,000 acre-feet per year of stored water from Canyon Lake, delivered to North Central and Northwestern Bexar County. The contract expires in 2037. It includes an option to extend to 2077 under terms that SAWS currently considers financially uncertain. Thus, SAWS assumes termination of this contract in 2037.

Canyon Regional Water Authority (CRWA)
SAWS has a contract with CRWA to purchase up to 4,000 acre-feet per year of treated surface water from Lake Dunlap on the Guadalupe River near New Braunfels. SAWS has agreed to lease 500 acre-feet per year of this water to Springs Hill Water Supply Corporation through 2023. SAWS has an additional contract with CRWA to purchase 2,800 acre-feet per year of Carrizo Aquifer groundwater from sources in Gonzales and Guadalupe Counties. The Lake Dunlap contract expires in 2038 and the Wells Ranch contract expires in 2047. SAWS does not have unilateral control over the extension of the contracts and therefore assumes termination in those years.
Carrizo Aquifer Groundwater from Gonzales County
When this Carrizo Aquifer supply became operational in 2013, it provided SAWS customers with the largest non-Edwards Aquifer groundwater supply to-date through an innovative and cost-saving infrastructure-sharing arrangement with Schertz-Seguin Local Government Corporation (SSLGC). This plan includes the 11,688 acre-feet per year permit (minus losses) that SAWS is permitted to produce and export. SAWS has the option of whether or not to purchase surplus water made available by SSLGC, but as this amount is not firm, no surplus deliveries are included in this plan. SAWS is proud of the mutual benefits that this major public-public partnership has made possible, eliminating the need to construct over 50 miles of pipeline, a new water treatment plant, and two pump stations, thereby saving SAWS customers $88 million, and providing a back-up supply and debt payments to SSLGC. The term of this supply goes beyond the planning horizon of 2070.

Medina System
SAWS has a contract with the Bexar-Medina-Atascosa Water Control & Improvement District #1 (BMA) to purchase up to 19,974 acre-feet per year of stored water from Medina Lake delivered to a SAWS treatment plant via the Medina River. Medina Lake was virtually empty during the 2011-2014 drought. SAWS therefore considers the firm yield of this supply to be zero acre-feet per year during the worst six years of a Drought of Record. The contract expires in 2049, and SAWS assumes termination in that year.

Recycled Water
SAWS has the nation’s largest direct recycled water system, with infrastructure capacity to deliver up to 35,000 acre-feet per year of treated recycled water through more than 130 miles of pipeline to commercial and industrial customers, golf courses, and parks throughout the city. The system was also designed to supplement flows in the San Antonio River and Salado Creek. In addition, recycled water supplies up to 50,000 acre-feet per year conveyed via bed and banks to CPS Energy for use in electrical generation.
SAWS is working to ensure that this resource that was once considered a liability is being valued correctly and provides the greatest public benefits. As part of this strategy, SAWS filed an application with the Texas Commission on Environmental Quality (TCEQ) to proactively convey this increasingly valuable water resource for downstream diversion and use. This strategy is also designed to support regional stakeholder goals for meeting Texas’ Instream Flow Standards for the San Antonio River and freshwater inflows for San Antonio Bay. SAWS is working to ensure that future plans may consider options for use of anticipated increases in treated effluent. Longer-term expansion of the current recycle program or direct potable reuse (DPR) are identified in Section 14.

**Regional Regulations (Non-Edwards Aquifer Groundwater)**

Groundwater Conservation Districts (GCDs) manage the aquifers within their jurisdiction. As part of this management, they are required to set a desired condition over a 50-year planning period — referred to as the Desired Future Condition (DFC) — for each aquifer. These desired future aquifer conditions are established through a policy-driven process within a larger group of conservation districts called Groundwater Management Areas (GMAs). The DFCs are then submitted by the districts to the Texas Water Development Board. TWDB then uses a computer model to calculate the Modeled Available Groundwater (MAG) in each GMA and GCD. The MAG is used by GCDs to assist in managing production.

The MAG is a calculation based on the policy-driven DFC process. It is not a representation of the amount of water that is physically available within an aquifer. The MAG is one of several factors that a GCD is required by law to consider in the management of total groundwater production. The DFCs are revisited every five years, and may change based on new policy and data.
The 2017 Water Management Plan is the first SAWS water management plan which addresses this regulatory process. All of SAWS non-Edwards Aquifer groundwater projects are affected by MAG determinations. As described above, GCDs must take the MAG into consideration in their regulatory decisions; however, they are afforded some flexibility in determining how DFCs will be achieved.

The Vista Ridge project (described in Section 7) is a non-Edwards Aquifer project influenced by the MAG. The project has been planned to deliver up to 50,000 acre-feet of groundwater per year from Burleson County throughout the 30-60 year term of the contract. Current DFCs adopted for groundwater projects in Burleson County result in a MAG of 23,249 acre-feet in 2020 increasing to 38,701 acre-feet in 2060. After accounting for existing production and other planned projects, 18,242 acre-feet of MAG are available for the Vista Ridge project in 2020 increasing to 33,694 acre-feet in 2060.

TWDB is developing a revised groundwater availability model (GAM) for GMA 12 to better determine groundwater availability. The revised GAM, which includes the area of the Carrizo-Wilcox and Simsboro Aquifers that will be the source of the Vista Ridge project, is expected to be completed by mid-2018 and available for the next revision of DFCs.

Other SAWS water supply projects sourced from the Carrizo and Wilcox Aquifers were not fully supported by MAG volumes during the first round of DFC planning. DFCs were later adjusted on the basis of additional data acquired during the actual operation of the water supply projects. These SAWS groundwater supply projects (with the exception of Vista Ridge) are now expected to be fully supported by MAG determinations from the most recently adopted DFCs.

Given recent experiences, impending changes to the groundwater models, and the fact that the issue is not yet ripe, for purposes of the 2017 Plan, SAWS has determined that MAG limitations reflected at this point are a manageable risk. The impact of this MAG will continue to be evaluated as the projects mature and the regulatory scheme of groundwater evolves.
The estimated 2017 population for the SAWS service area is approximately 1.8 million. By 2070, the population is projected to increase to approximately 3.3 million (see Figure 4-1). These projections are higher than the 2012 Water Management Plan population projections primarily because of the change in methodology from half-migration to full-migration. Texas State Data Center (TSDC) defines full-migration as the assumption that “trends in age, sex and race/ethnicity net migration rates of the post-2000 decade will characterize those occurring in the future of Texas.” In short, growth rates experienced since 2000 are predicted to continue in the future. SAWS has decided to align its 2017 population estimate with CoSA projections by adopting the specific full-migration growth rates consistent with the City’s SA Tomorrow initiative. The full-migration growth rates adopted by CoSA only extend to 2040. Based upon long term planning recommendations from the State Demographer, SAWS used the half-migration methodology beyond 2040.

The final combined growth rates for the 54-year period averaged out to 1.15 percent, with a 2017 growth rate of 1.83 percent, and ending the planning period in 2070 with a growth rate of 0.70 percent. This translates to approximately 35,000 more people per
year in the 2020s, and approximately 23,000 more people per year in the 2060s. This plan does not assume any significant expansion of existing SAWS service area.

In the graph below, SAWS 2005 and 2009 Water Management Plans did not plan for the population in areas that at that time were served by Bexar Metropolitan Water District, whereas the 2012 and 2017 Water Management Plans do. Additionally, SAWS 2012 Water Management Plan assumed a half-migration growth rate and SAWS 2017 Water Management Plan assumes a full-migration growth rate to 2040 (consistent with the City’s SA Tomorrow initiative), which explains the new higher population projections.

* Includes population in areas formerly served by Bexar Metropolitan Water District.
San Antonio’s long-standing commitment and investment in water conservation and infrastructure improvements has yielded its largest water supply. SAWS’ total per capita water consumption has decreased significantly from 225 gallons per capita per day (GPCD) in 1982 to 117 GPCD in 2016, which has resulted in approximately 3.2 million acre-feet of cumulative savings. Using today’s larger population, a total per capita of 225 GPCD would require an additional 215,000 acre-feet of water per year. Over the past 35 years, SAWS has reduced GPCD by approximately 50 percent by improving infrastructure and cultivating an ethic in conservation, all while population has grown by approximately 150 percent. If SAWS experienced a severe drought today and had not achieved the significant reductions in water usage and development of water supply projects that it has since 1982, SAWS would need several substantially sized water supply projects, resulting in higher current and future rates.

**Over the past 35 years, SAWS has reduced GPCD by approximately 50 percent, while population has grown by approximately 150 percent.**

**Water Use Trending Downward**

Recent analysis of SAWS residential and business customers shows both long term and short term water use is trending downward. SAWS uses these trends as well as our
extensive knowledge of water efficiency opportunities to project how quickly per capita usage may continue to drop. However, future water use forecasting is not an exact science because water use patterns can quickly. For example, during recent years a combination of drought conditions, restrictions on discretionary use, and periods of rainfall all contributed to a more rapid decline in consumption than was expected. If SAWS assumes this steeper drop will continue every year in the future, its forecast would likely be inaccurate because these conditions cannot always be expected. For this reason, SAWS suggests a range in potential consumption trend lines that reflect wet periods, normal weather and very dry periods. Per capita consumption will vary between these levels each year with a long-term trend downward.

The trends from prior years are not the sole reason SAWS believes that consumption patterns will continue to drop. Success at getting customers to change their patterns of water use is also integral. There are clear opportunities to use incentives, education, and reasonable regulations to reduce water use among residential, business, and irrigation customers. Our knowledge of residential and commercial usage patterns informs our predictions of how low each class of customers may go in the future.

In the decades to come, proactive conservation programs will assist all water users in finding ways to be even more efficient. Success of conservation initiatives will continue to be measured by each class of customers to illustrate how each contributes to cost-

SAWS analyzes water use patterns to suggest free irrigation consultations to customers who will most benefit from them. The average savings per household is between 2,000-4,000 gallons per month. In 2016, 2,495 consult services were provided to SAWS customers, resulting in savings of over 90 million gallons per year. Customers are left with custom rebate offers that reflect opportunities to make their irrigation systems more efficient. Fourteen percent of customers follow up and complete these improvements.
effective ways to manage the long-term usage of water. Water conservation continues to be a SAWS strategy for long-term water supply.

**Residential**

SAWS residential customers have enthusiastically embraced conservation both inside their homes and in how they manage their landscapes. During 2015, 2016 and 2017, homeowners replaced over 2 million square feet of traditional grass with drought-tolerant landscape plants. Multi-family residential locations are also upgrading landscapes and improving irrigation efficiency. With these trends established, residential GPCD is projected to decline significantly over time. (see Figure 5-2). Higher water rates reflecting the cost of more expensive new water supplies are also expected to motivate efficiency resulting in conservation.

Residential consumption is the most variable of all customer groups served by SAWS. During wet winter months, the average usage declines significantly. In contrast, usage may increase quickly during hot summer months when there is little or no rainfall. The projections provided in Figure 5-2 illustrate the uncertainty associated with variable weather. Residential GPCD is expected to decline in the coming decades, but can fluctuate within the ranges identified in SAWS high, average, and low demand projections.

High demand is characterized by well above average temperatures, and/or well below average rainfall. Average demand is characterized by average temperatures, and/or average rainfall. Low demand is characterized by

*Over a three year period, San Antonio homeowners replaced the equivalent of 35 football fields with drought tolerant plants.*

Residential consumption is the most variable of all customer groups served by SAWS. During wet winter months, the average usage declines significantly. In contrast, usage may increase quickly during hot summer months when there is little or no rainfall. The projections provided in Figure 5-2 illustrate the uncertainty associated with variable weather. Residential GPCD is expected to decline in the coming decades, but can fluctuate within the ranges identified in SAWS high, average, and low demand projections.

High demand is characterized by well above average temperatures, and/or well below average rainfall. Average demand is characterized by average temperatures, and/or average rainfall. Low demand is characterized by
average temperatures, and/or above average rainfall. Outdoor watering restrictions will also reduce discretionary usage, impacting demand in all three demand scenarios.

Outdoor consumption varies greatly, but in some years, it may account for up to 50 percent of that year’s residential consumption. This will decline over time as landscape design trends continue to favor Texas natives and other drought-tolerant plants. As landscapes are less dominated by grass supported by irrigation systems, it will be possible to maintain attractive outdoor areas with less water. To decrease residential outdoor water use in general, and specifically address reductions in peak use during periods of extreme hot/dry weather conditions, SAWS will accelerate the adoption of new landscape design trends and better irrigation technology with continued education and incentive programs. Already many households are choosing less grass dominated landscapes. A recent survey of residential customers who have engaged in at least one of SAWS’ conservation programs demonstrated that conservation participants understand that the best way to reduce water use at home is through landscape transformation to a diverse and sustainable landscape reducing the need for use of in-ground irrigation systems.

Indoor water use at homes and multifamily settings is not dependent on weather fluctuations and is expected to continue to drop. Analysis from the 2012 Residential End Use Study indicates that San Antonio has not yet reached complete indoor water use efficiency. Some high flow water fixtures still remain and others that were replaced may be in need of regular maintenance and repairs to operate at full efficiency. SAWS’
indoor single family GPCD in 2012 was 47 gallons. In 2004, new homes that had the most efficient fixtures and no leaks had an indoor GPCD of 36 gallons.

To address indoor efficiencies, SAWS will focus its efforts on promoting the repair of leaks. The few high flow fixtures that remain will naturally be replaced over time with new fixtures, all of which meet the federal high efficiency standards. Average consumption by single family households during winter months also continues to decline. While winter average does not perfectly reflect indoor only use, it is a reliable indicator of the trend.

**Industrial, Commercial, and Institutional (ICI) Irrigation**

Landscape water use patterns at San Antonio businesses have changed remarkably in recent years. There has been a significant decrease in the average use per bill since 2011. While drought restrictions have been a component in driving the long-term investments leading to this change, there is more to the trend than simply restricting the use of commercial irrigation systems. A combination of changes in habit, improved water management with the help of new irrigation technologies, changes in water price, and pricing structure have all been important factors in the decline. Several factors lead SAWS conservation staff to believe the declines will continue in the future.

**Figure 5-3: Long-Term Conservation Projections for ICI Landscape Water Use**

ICI landscape irrigation efficiency has been on a fast-track since 2009. Success can be attributed to many efforts that include:

- Changes to less water-needy plant material
- Adoption of improved irrigation technology
- Increased vigilance in water management
- Tiered rate structure adjustments

**Continued Technology Improvements:** New landscape irrigation management systems now available make it possible to more effectively manage vast commercial landscapes. SAWS has worked with several properties that have over 100 acres of land under irrigation, to assess how cloud-based data delivery, real-time flow indicators, and control systems can combine to enhance water efficiency. The results have been
impressive. SAWS has seen sites achieve water use declines of 30-50 percent through the use of this new technology that allows the facility managers to effectively manage these landscapes by quickly detecting leaks, cutting off irrigation with rainfall, and managing settings appropriate to the season. These changes have improved the health of landscapes and reduced water use tremendously. It should be noted that while the technology is key, it is an engaged property manager keeping their eyes on the system that results in the most water savings. Developing incentives to encourage a more engaged property manager will result in significant water savings independent of technology adoption.

Changing Landscape Styles:
Many businesses and Home Owner Associations (HOAs) are realizing that grass-dominated landscapes are expensive to water and maintain. Grass located in parking lot islands or in road medians has no functional purpose and is challenging keep trimmed and watered so that it is attractive. They are realizing there are alternative plant choices that lead to more interesting and resilient landscapes needing less water and maintenance. Lower

While commercial and nonresidential accounts only represent six percent of SAWS’ customer base, these customers account for forty-one percent of SAWS’ annual water sales. There is a tremendous potential for water conservation efforts within these customer classes. Commercial and industrial customers use water in diverse ways that are not easily captured by standard rebate options. Many potential water-saving innovations are tabled because investments in water savings compete against other investments that may have a better-perceived rate of return. The custom rebate incentive is designed to overcome this barrier to water conservation with an effective but not overly generous financial incentive.

For example, NuStar Energy has installed an HVAC condensation and reclamation system to water their drought tolerant landscaping and supply a 10,000 gallon Koi fish pond. Additionally, a rain catchment system was constructed to provide over 42,000 gallons of stored rainwater per year for all the water features on the campus.
maintenance costs are attractive to business owners and HOA members alike. This focus on financial efficiency is an opportunity to promote water-saving landscapes and irrigation system upgrades, leading to a more overall sustainable community without sacrificing an attractive environment for our community.

**Irrigation Checkup Report Follow Up:** Large landscape sites in San Antonio are required by CoSA City Code (Ch. 34 – Water & Sewer, Art. 4 – Water Conservation & Reuse) to complete Irrigation Checkup analyses each year to demonstrate that irrigation systems are properly functioning and fully repaired. The reports also document what the professional irrigator maintaining the irrigation system believes is the maximum summer peak consumption for each irrigation meter. SAWS conservation staff are using data from these reports to alert commercial sites when their use goes up higher than expected. The reports have also provided information on where SAWS incentives can help properties change their landscapes and irrigation to use less water.

**Industrial, Commercial, and Institutional (ICI)**

ICI business customers continue to find innovative ways to be productive while using less water. Each year their efforts account for approximately 30 percent of the annual water savings achieved through conservation programs. Business water efficiency is expected to continue for many years (see Figures 5-3 and 5-4).

*Figure 5-4: Long-Term Conservation Projections for ICI Usage*

ICI customers contribute half of the water savings achieved each year through innovation, vigilance, and reasonable regulation:

- Adoption of new water efficient practices
- Installation of new equipment that requires less water
- Compliance with reasonable regulations

SAWS’ goal is to help businesses use water as efficiently as possible. Custom incentives, cooperative education efforts, and enforcement of reasonable regulations all contribute to reduce water use at ICI sites today and into the future.
Predicting future business water use is not easy due to the nature of different ICI operations. SAWS expects business water use to continue on its trend to efficiency, but that does not guarantee that total sales in this category will decline. If more businesses come to San Antonio, total use could increase, even with water efficiency efforts. Increased production at industrial sites, increased occupancy at commercial buildings, and even increased enrollment at educational institutions are all wild cards in predicting total ICI water sales.

There are reasons to believe that even with accelerated economic activities and increased enrollment in San Antonio educational institutions, SAWS could see business water use decline at a slow, but steady rate over the next few decades. Each year new technological advances that greatly reduce water use for specific business purposes are developed. Hospitals can now sterilize medical equipment with a fraction of the water needed previously. Water-cooled equipment is rapidly being phased out. Additionally, water-intensive processes that were standard are being replaced with more efficient ones. These innovations are likely to continue.

Nevertheless, water is challenging to manage at very large sites. It is common for businesses to have single meters for large operations and to have little data available to help assess where leaks or inefficiencies could be unnecessarily using millions of gallons. This situation is changing rapidly as flow sensors and cloud-based technology are advancing. Over time, the technical challenges will be solved, and more properties will have information available in real time to monitor water use.

The cost of water and sewer services has increased for businesses across the country. This has changed the business proposition for efficiency measures that might have had a longer than acceptable return on investment in the past. SAWS will capitalize on these trends. SAWS is also working to enhance its ability to analyze business customers in greater detail to better identify opportunities for improvement more rapidly. The reductions achieved from these efforts are expected to contribute to lower total per capita demand for decades.

SAWS 2017 Water Management Plan assumes a total demand in 2070 that is approximately 75,000 acre-feet per year less than the 2012 Water Management Plan.
Growth and Development

The tremendous population growth, described in Section 4, will change the look and feel of San Antonio. The CoSA’s SA Tomorrow Comprehensive Plan outlines a new and progressive approach to ensure San Antonio grows and develops in ways that benefit existing and future residents, the business community, and the environment. As SAWS strives to meet the water demand targets described in this section, a more densely populated city with greater efficiency in design and permanent landscape behavioral changes will lend itself to lower per capita consumption. SAWS will continue to work with developers and builders to incorporate more water efficient technologies. Efficient growth and development not only benefit conservation but also support CoSA’s and SAWS’ commitment to protecting water quality and the Edwards Aquifer recharge zone (Section 3). SAWS views its role as one of support for CoSA policies and planning activities relating to growth and development, and will work to ensure its policies and pricing support the overall community’s objectives.

While not intended to direct growth, SAWS’ impact fees are one example of the intersection of development and water/wastewater services. An impact fee is a charge for capital improvements or expansions attributable to new development that is governed by state law. Impact fees are generally based on the cost of the infrastructure associated with the pumping, treatment, and transmission of water and wastewater. Because it is generally more costly to provide new water and wastewater service in the northern portion of the SAWS service area, the impact fees are generally higher in these areas. In addition to lower impact fees for development closer to city center and further south, CoSA also established an impact fee waiver program to encourage inner city and infill development within the priority areas identified by CoSA Center City Development & Operations department.

Drought Restrictions

Drought demand strategies such as Stage 1 and 2 drought restrictions will further reduce the GPCD and total demand projections (found in Figures 5-5 and 5-6). It is projected that demand can be reduced by approximately 4.5% for each stage. Those reductions are built into the hybrid Drought of Record planning in this 2017 WMP. Although the supply and demand scenarios only include Stage 1 and 2 reductions, SAWS has the ability to implement deeper demand restrictions if an occurrence of a drought worse than the hybrid Drought of Record or in a circumstance where planned water sources are insufficient to meet customer demand. Both Stage 3 and 4 restrictions include once every other week watering from an irrigation system or sprinkler. Stage 4
restrictions include the addition of a drought surcharge and the discretion by CoSA City Council to establish additional restrictions if warranted. The projected savings from implementing Stages 3 and 4 is approximately 5% and 3.5% respectively. SAWS does not anticipate the need to utilize the more aggressive drought restrictions due to the amount of diversified water supplies both on hand and under construction but the ability to implement does exist.

Additional policy discussions on year-round once per week watering will continue among the SAWS Board of Trustees, CoSA City Council, and community organizations. Year-round once per week watering has been analyzed by SAWS as well as an independent consultant and was found to have minimal impact on SAWS’ supply and demand outlook during drought, but could have some impact outside of drought during normal weather conditions. Permanent Stage 1 restrictions are appealing to various community and elected leaders for a range of policy reasons. This document plans for drought, and therefore already assumes Stage 1 and 2 restrictions throughout the 9-year hybrid Drought of Record, resulting in a reduction in demand in the appropriate years. As these demand reductions are already incorporated into the model, no additional changes to this WMP would occur if this policy were enacted. While not a specific recommendation in this Plan, a community-wide discussion on this topic is likely.

**Total GPCD Projections**

Reductions in usage from all types of customers and improvements in nonrevenue water (see Section 6) will result in a long-term total per capita water use decline. SAWS projects total per capita water use to reach a low of 88 GPCD by the year 2070. Fluctuations of plus or minus 8-11 GPCD are expected annually with impacts from weather. By 2070, conservation investments will result in approximately 4.3 million acre-feet of cumulative water savings since 2017, and would replace the need for an additional water supply project of approximately 132,000 acre-feet per year.
Figure 5-5: Long-Term Total Demand Projections for All Customer Classes

Figure 5-6: SAWS population projections, total GPCD projections, and total demand projections. Total Water Demand = GPCD x Population. If SAWS were to remain at 124 GPCD through 2070, SAWS demand would be an additional 132,000 AFY, as identified in the light gray bars below.
Nonrevenue Water Program

Nonrevenue water is the water for which SAWS does not receive payment. Nonrevenue water is not composed solely of water leaks and main breaks (real loss). It also includes business uses such as firefighting and flushing water mains to meet water quality regulations (authorized use), and paper losses such as meter under-registration and undetected theft (apparent loss). Determining and addressing the factors contributing to nonrevenue water requires specialized knowledge, funding, accurate measurements/quality data, dedication, and use of standardized audit tools to ensure detailed accounting.

The average nonrevenue water percent by total production nationally and in Texas is approximately 17 percent. SAWS’ nonrevenue percentage in 2016 was 16.9 percent, slightly below the average. Of that 17 percent, approximately 2 percent is attributed to authorized use, approximately 1-3 percent is attributed to apparent loss, and the remaining 12-14 percent is attributed to real loss.

SAWS is implementing cost-effective activities to reduce nonrevenue water and focusing on near-term opportunities that can result in a reduction in real and apparent loss of 5,000-7,000 acre-feet per year by 2025, growing to 7,000-10,000 acre-feet per
year long term. This assumption translates to approximately 14 percent nonrevenue water by total production volume by 2025, real loss under 10 percent, and contributes to SAWS’ total GPCD reduction goals. Reducing SAWS nonrevenue percentage to 14 percent and maintaining that level will require significant, strategically targeted investment in its potable water infrastructure. SAWS is dedicated to continuously improving infrastructure and reducing nonrevenue water throughout the planning horizon.

SAWS is working with nationally recognized loss control professionals in order to evaluate additional opportunities and sustain improvements. SAWS is proactively taking steps to reduce nonrevenue water, which include:

- Implementing detailed leak surveys to further identify hidden leaks.
- Leveraging $18.6 million of EAHCP funding, committed between 2016 and 2020, to augment existing leak repair activities.
- Evaluating efficiencies of field operations.
- Maintaining a more detailed accounting for regulated system wide flushing
- Reviewing production and customer metering annually to ensure effective measurement and management.
- Performing annual water balance audits using industry standard approach.
- Conducting internal and external education, with the aid of professional consultants to help guide SAWS loss control programming.

SAWS has committed efforts on nonrevenue water recovery, and has increased expenditures related to nonrevenue water
management. SAWS will be increasing the amount of service area that it inspects for leaks every year from one quarter to one half year. In addition, SAWS is looking into Advanced Metering Infrastructure (AMI), a technology that could enable SAWS to optimize its ability to manage water. Through enhanced analytics and reporting, improved resiliency and security, and enhanced customer service, AMI could make SAWS smarter, stronger, and greener. AMI, however, also comes with a steep price tag that could be well over $100 Million. Further assessment of the benefits and the anticipated return on investment will accompany future recommendations to be considered by the SAWS Board of Trustees and any required rate requests from City Council. Nonrevenue water recovery will remain a priority to SAWS, as the cost of supply diversification continues to increase. Some challenges to reducing nonrevenue water include non-SAWS contractors damaging SAWS’ water lines while performing cable installation or other subsurface construction, as well as continued regulations requiring line flushing.

Percentage-based measurements, however, may not be the best indicator to measure the utility’s nonrevenue water status and should not be used to compare one utility to another. Moreover, while some water utilities have a single or very few points of water supply delivery, SAWS has over a hundred Edwards Aquifer wells and over a dozen different water supply projects. This gives SAWS tremendous integration and water supply redundancy, however it creates more nonrevenue water complications as compared to other entities.

The Infrastructure Leakage Index (ILI) has been found to be a better tool for utilities in similar regions, as it compares a ratio of current annual real loss to a system’s theoretical real loss. This measurement takes into account a utility’s specific operational challenges, such as system pressure, connection density, and distance of customer meter to street, to name a few. For the State of Texas, a unit-less measure between 1 and 3 is deemed acceptable. SAWS ILI has improved from 2.9 in 2010 to 2.2 in 2016, thanks in part to improved standardized auditing over that period. The drop in ILI to 2.2 pushes SAWS well ahead of the national average of 3.8. The ultimate goal of an ILI is to be as close to 1 as possible, as long as implementation activities are cost-effective.
During the Near Term, SAWS will continue the two-pronged approach that it has implemented over the last few decades: supply diversification with the purchase of Vista Ridge water, and water conservation efforts to include reducing total usage to 112 GPCD and residential usage to 72 GPCD by 2025.

**Diversified Water Supply**

SAWS has a contract with Vista Ridge LLC to purchase up to 50,000 acre-feet per year of Carrizo/Simsboro Aquifer groundwater. Vista Ridge LLC will build and operate wells and a pipeline system to pump the groundwater in Burleson County and deliver it to San Antonio for 30 years. Project construction began during spring 2017.

*Figure 7-1: Texans Helping Texans – The Vista Ridge pipeline will transport high quality drinking water through one of the highest growth areas in the nation.*
SAWS will pay a fixed unit price for water delivered, plus all operating and maintenance and utility costs. Ownership of the wells and pipeline system will transfer to SAWS at the end of the term, after which a separate agreement with the owner of the groundwater leases, Blue Water Vista Ridge, will give SAWS the ability to continue production for an additional 30 year term and deliver the water at a much lower price. Combined, the two agreements provide for a 60-year contracted supply of water. The project is expected to be completed early 2020, adding to SAWS’ diversified water supply portfolio.

SAWS’ arrangement with Vista Ridge LLC is a first-of-its-kind water supply public-private partnership (P3) in Texas, which merges the strengths of a public utility and private industry. The agreement transfers risk of project development, financing, and water source availability to Vista Ridge LLC. The project represents a major step forward in water diversification and will meet San Antonio’s water needs for decades.

Vista Ridge was approved by the SAWS Board of Trustees in September 2014. This was followed by a unanimous City Council vote in support of Vista Ridge in October 2014, as well as a unanimous City Council vote in November 2015 supporting of rate adjustments to fund Vista Ridge. On November 2, 2016, Vista Ridge LLC reached Financial Close by entering into an agreement with a group of international banks to finance design and construction of the project. SAWS previously exercised an available option which enabled SAWS to lock in the fixed portion of the cost of the water. This action saved SAWS customers approximately $529 million over the 30 year term of the project compared to the potential maximum price established in the contract.

The Vista Ridge pipeline route parallels the I-35 corridor, one of the highest growth regions in the country. Communities throughout the region have increasing water needs to sustain both growing populations and flourishing economies. SAWS may wholesale up to 15,000 acre-feet per year from the Vista Ridge pipeline or its existing water supply.
projects, developing regional partnerships, providing communities a diversified water supply, and potentially reducing costs to SAWS ratepayers. Before any wholesale agreements are executed, SAWS will engage in associated policy and rate discussions with the SAWS Board of Trustees and City Council.

In addition to Vista Ridge LLC’s construction of the pipeline system to convey water to the delivery point in northern San Antonio, SAWS must build the infrastructure needed to integrate the water within its system. This integration infrastructure will be elaborated upon in Section 12.

**World Class Water Conservation**

SAWS will continue to focus on conservation, by implementing education, incentives, and reasonable regulations to continue reducing demand. During this period, SAWS aims to reduce total planned per capita consumption in an average year from 124 GPCD in 2017 to 112 GPCD in 2025 (+/- 8-11 GPCD). SAWS total per capita consumption in 2016 was 117 GPCD, due in large part to above average rainfall. Despite rapid population growth in this time period, SAWS progressive GPCD goals will help moderate the growth in total annual demand, for an increase of approximately 7,000 acre-feet per year during that period.

Over the last 20 years, CoSA has developed and continuously improved what has been described by the Alliance for Water Efficiency as the most comprehensive water conservation and drought management ordinance in the country. Seen as a model conservation ordinance across the region and country, language taken directly from the CoSA ordinance is often found in other communities’ ordinances. SAWS is tasked with implementing this comprehensive ordinance that includes both drought demand management generally focused on outdoor peak demand reductions, as well as
reasonable, year-round rules that focus on best management practices resulting in better water management. This 20-year effort of continuous improvement of meaningful, reasonable regulations has been punctuated by three major updates. All ordinance updates considered by City Council for approval are vetted by the community through public processes including but not limited to: stakeholder workshops, community outreach, and surveys.

SAWS provides numerous programs that assist all customers, residential and commercial, in implementing permanent structural changes in the landscape that reduce or eliminate any negative impacts from drought regulations. SAWS offers incentive programs that address year-round regulations focused on promoting best management practices found in the CoSA ordinance.

SAWS will continue to expand its input process for any future updates to the CoSA ordinance, and continue to expand its extensive suite of incentive and education programs over the Near Term, as well as the Mid Term and Long Term time frames.
Even with the progressive per capita goals described in Section 5 and the robust, diversified water supply portfolio that SAWS has managed to acquire over the last two decades, without further development of supplies, SAWS could experience Permitted Supply Gaps in the 2020s, assuming a recurrence of the hybrid Drought of Record.

Figure 8-1: SAWS Near Term supply and demand outlook shows a supply gap of 13,130 acre-feet could occur in 2024 without further supply development, such as Vista Ridge. Scenario below represents a Drought of Record.
The combination of progressive per capita consumption goals and the acquisition of the Vista Ridge water supply project will give San Antonio water security in the Near Term, and for the decades that follow in the Mid Term (see Section 11).

*Figure 8-2: SAWS Near Term supply and demand outlook shows no supply gap with further supply development, such as Vista Ridge. Scenario below represents a Drought of Record.*

**Understanding the Supply and Demand Graphs**

For ease of understanding, the 2017 Water Management Plan has been broken down into bracketed time periods described as Near Term, Mid Term, and Long Term.

There are various elements to the supply and demand graph presented in the Executive Summary, and in later sections. The three lines in the graphs illustrate three different demand scenarios: high demand, average demand, and low demand. High demand is characterized by well above average temperatures, and/or well below average rainfall. Average demand is characterized by average temperatures, and/or average rainfall. Low demand is characterized by below average temperatures, and/or above average rainfall. Outdoor watering restrictions will also reduce discretionary usage, to some degree. While the 2012 Water Management Plan incorporated reductions in demand due to conservation as a supply bar, this 2017 Water Management Plan reduces the demand lines. This was done in response to recommendations that showing conservation as a reduction in the demand lines would aid in understanding the graphs.
SAWS’ Edwards Aquifer supply is shown as a teal bar, and non-Edwards supply (dark blue) and planned supplies (light blue) are combined for simplicity of display into single bars. Unlike other water supplies in this Plan, Aquifer Storage and Recovery (ASR) is not an annual supply that renews with the passing of the calendar. Rather, it is a supply reserve whose yield is based on artificial recharge as opposed to natural cycles or regulatory management. Cumulative water stored in ASR is shown as hatched yellow bars, whereas annual water recovered from ASR is shown as solid yellow bars. A more detailed description of each supply is provided in Section 3.

In the graphs, when the line (demand) exceeds the totality of the bars (supply), a Permitted Supply Gap is shown. Since most water resources are regulated and administered through an annual permit, it is typically the case that a shortfall of firm yield is regulatory in nature rather than a physical absence of water during extreme drought or any inadequacy in the infrastructure necessary to access that supply. Therefore, the term Permitted Supply Gap should not be construed as an allowable or hydrological deficit of supplies – rather, it is a term chosen to specifically reflect the primarily regulatory nature of firm yield in South Central Texas at this time.
During the Mid Term Term, SAWS will continue the two-pronged approach that it has implemented over the last few decades: supply diversification such as expanding its treatment capacity, and water conservation to include reducing total usage to 96 GPCD and residential usage to 63 GPCD by 2040.

**Diversified Water Supply**

SAWS does not anticipate a new water supply project in the Mid Term. During this period, SAWS will seek to maintain its inventory of Edwards Aquifer groundwater withdrawal rights at 281,000 acre-feet per year. SAWS also plans to address water treatment and integration issues. Water integration challenges between 2026 and 2040 will be identified in Section 12. As to water treatment, the ability to treat Carrizo Aquifer groundwater at the H2Oaks facility is currently limited to 30 million gallons per day (MGD). During the latter portion of the Mid Term planning...
horizon, SAWS anticipates relying more heavily on the ability to recover ASR water in order to delay the construction of costly water supply projects. As larger quantities of water are recovered, more treatment capacity may be required. In order to accommodate the additional treatment, SAWS will likely need to add an additional 30 MGD of treatment capacity. Fortunately, SAWS anticipated this eventual need in the original design of the H2Oaks facility, and has gained valuable hands-on knowledge of the treatment requirements of the Carrizo Aquifer in southern Bexar County, which will make for optimal design, construction, and operation.

**World Class Water Conservation**

SAWS has implemented a prudent combination of sustainable water supply projects and reasonable water usage for decades, and the strategy in the Mid Term is no different. During this period, SAWS will strive to continue leading the nation in water conservation, aiming to reduce its total planned per capita consumption in an average year from 112 GPCD in 2025 to 96 GPCD in 2040 (+/- 8-11 GPCD). These per capita reductions will help to largely offset increases in demand stemming from population growth with its total annual demand during that time frame increasing by only 20,000 acre-feet. This approach will delay the need to build additional water supply projects for decades (see Section 11).
During the end of its planning horizon, SAWS will continue the two-pronged approach that it has implemented over the last few decades: supply diversification such as bringing online additional phases of brackish desalination and Carrizo Aquifer production, and water conservation to include reducing total usage to 88 GPCD and residential usage to 55 GPCD by 2070.

**Diversified Water Supply**

Design of new infrastructure will begin in the 2040s, with construction and operation shortly thereafter. Recent modeling has shown that the maximum yield of brackish groundwater from Bexar County is estimated at 22 MGD. Building the project with an ultimate yield of 30 MGD will therefore likely require SAWS to drill production wells outside of Bexar County. Without changes in current groundwater regulations, and public buy-in from surrounding counties, development of brackish groundwater outside of Bexar County could pose permitting challenges that may impact the project at that time. At this point, however, the 30 MGD ultimate yield of this project is included in the current DFCs for GMA 13.

Also located in southern Bexar County, the Expanded Carrizo project will improve with the operational knowledge gained from the Local Carrizo project, and take advantage of the additional 30 MGD of treatment capacity. The project will develop an additional 21,000 acre-feet per year of Carrizo Aquifer from properties in Bexar County proximal to the H₂Oaks facility. Some advantages of this project are: It can be designed and
constructed quickly relative to other supplies, the project easily ties into existing infrastructure, and the project’s yield is included in the current DFC for GMA 13.

The implementation of future phases of the brackish groundwater desalination and the Expanded Carrizo projects are highly flexible due to SAWS ownership and control. If any unforeseen circumstances arise during the Near or Mid Terms in regards to SAWS water supply projects or to demand, SAWS has the ability to adjust the timing of these projects to fill those voids quickly.

**World Class Water Conservation**

SAWS will implement programs that are intended to reduce total planned per capita consumption in an average year from 96 GPCD in 2040 to 88 GPCD in 2070. Combined with the change in population growth rate to half-migration starting in 2040 outlined in Section 4, this means that total annual demand will only increase by approximately 40,000 acre-feet between 2041 and 2070.

*Figure 10-1: Technology, such as mobile apps that allow customers to track their own water use, will be instrumental in reducing total consumption to 88 GPCD by 2070.*
The combination of progressive per capita consumption goals and timely additions to SAWS’ water supply portfolio is expected to give San Antonio water security for decades. Without expansion of either brackish groundwater desalination or Local Carrizo Aquifer production, the first Permitted Supply Gap after the acquisition of the Vista Ridge water supply project is not anticipated until 2050.

*Figure 11-1*: After 30 years of water security from Vista Ridge supply, SAWS Long Term supply and demand outlook shows a supply gap of 5,757 acre-feet could occur in 2050 without further supply development, such as desalination or Expanded Carrizo. Scenario below represents a Drought of Record.
Starting in the 2040s, SAWS will likely begin design and construction of the additional two phases of its Brackish Groundwater Desalination program for startup to coincide with projected Permitted Supply Gaps. However, this could alternatively be switched by two phases of the Expanded Carrizo project or any combination of sources. This provides SAWS with flexibility. With full build-out of both brackish groundwater desalination and Expanded Carrizo Aquifer production, SAWS will have water security for the entire planning period.

Figure 11-2: SAWS Long Term supply and demand outlook shows no supply gap with further supply development, with desalination and Expanded Carrizo fully built. Scenario below represents a Drought of Record.
The SAWS water distribution system was originally built to distribute Edwards Aquifer groundwater. Most of the primary pump stations function largely as independent systems that are not strongly interconnected by significant pipelines. In order to expand utilization of these facilities to accommodate new supplies, SAWS must construct additional large diameter pipelines to effectively interconnect the stations and to connect them to new sources of water.

**Eastern Pipeline**
The Eastern Pipeline was built with the dual purpose of storing and recovering water to and from the ASR facility (now called H₂Oaks Center). The pipeline has sufficient capacity to also accommodate delivery of treated water from the initial phases of brackish groundwater desalination and Local Carrizo Aquifer production. This large-diameter pipeline is approximately 36 miles long and links the H₂Oaks Center to the Artesia, Seale, and Randolph Pump Stations along the eastern edge of the SAWS service area.

**Western Pipeline**
The Western Pipeline was designed to increase the ability and flexibility to integrate water from the H₂Oaks Center by delivering that water to western Bexar County. The first phase of the pipeline includes 28 miles of large capacity water transmission pipeline and new pump stations at the H₂Oaks facility and the Old Pearsall Pump Station. Phase
one became operational in 2016 and will enable SAWS to integrate H₂Oaks water to south Bexar County.

The second phase of the pipeline includes 17 miles of large diameter pipeline and additional pumping capacity at the H₂Oaks and Old Pearsall Pump Stations. This project is planned to be operational by 2020. With the addition of the Anderson Pump Station facility as a water integration point, the rated capacity of both phases of the pipeline will be 75 MGD.

**Central Water Integration Pipeline**

The Vista Ridge project will introduce approximately 45 MGD of water to the SAWS system through a single entry point. The biggest integration challenge SAWS faces in the early years of this project will be using this constant rate water supply during times of low customer demand. This is typically the cooler winter months when demand is at a minimum.

During cold and/or wet periods during the early years of the project, the Vista Ridge water will make up approximately one-third of the total water demand of the system. This water must be conveyed to locations in the distribution system where it can be effectively consumed. This will require construction of new integration infrastructure. Integration improvements include a combination of re-purposing existing infrastructure, and construction of new pipelines, control valves, tanks and pumps. Design and construction encompasses a segment from the terminus point of the Vista Ridge delivery line north of Loop 1604, delivering to both the existing Knights Cross facility and south to the existing Basin Pump Station.

*Figure 12-1: By 2020, SAWS will complete construction of a sophisticated transmission system that will give operators a great deal of flexibility in water distribution.*
The completion of the Central Water Integration Pipeline comes with a number of benefits to customers. The former BexarMet service areas of north central San Antonio will gain water service reliability and reduced water turbidity. Water distribution operators will have greater flexibility to feed multiple pressure zones across San Antonio and to provide water as far south as Calaveras Lake. The integration of Vista Ridge water allows SAWS to eliminate an outdated former BexarMet facility in need of major renovations, saving customers over $9 million. Integration of Vista Ridge water will provide SAWS with both its largest non-Edwards Aquifer source of water and increased water distribution reliability.
SAWS supplies are relatively resilient to changing climatic conditions, due in part to an already diverse water portfolio. Many water utilities across the country are analyzing how reductions in snowpack and rising sea levels might impact them. SAWS is not directly affected by those phenomena.

The majority of municipal water supplies delivered in the U.S. are from surface water, and those utilities are having to mitigate against increasing evaporation. Less than 10 percent of SAWS’ supply portfolio comes from surface water. In fact, SAWS built the largest groundwater-based Aquifer Storage & Recovery system in the country over 10 years ago, which has a storage capacity almost the size of Medina Lake, but without the risk of evaporative loss.

Finally, the Edwards Aquifer is an ideal natural system to harvest projected additional flooding events. The Edwards Aquifer is one of the most prolifically recharging karst aquifers in the world. Recharge is provided by precipitation over eight major drainage basins. The median recharge since 1934 is estimated at 557,000 acre-feet per year, with a low of 44,000 acre-feet in 1956 and a
high of 2,486,000 acre-feet in 1992. The Edwards Aquifer remains a reliable resource for agriculture, water supply, and the environment for south central Texas, now and into the future.

SAWS planning accounts for predicted changes in climate in several ways. Rather than use the standard 1950s Drought of Record scenario for planning, SAWS uses a hybrid Drought of Record scenario that incorporates the more extreme reductions experienced during the 2011-2014 drought. SAWS has developed models that allow this scenario to be applied and tested during many different time periods and under different supply planning assumptions to assess needs under many worst-case scenarios. SAWS has direct experience with climate change research due to its involvement in the LCRA-SAWS Water Project and the EAHCP. In addition, SAWS has analyzed water planning implications of research that was done for CoSA and the City of Austin by Dr. Katherine Hayhoe, Ph.D., a leading climate science expert.

While not climatologically the same, Austin and San Antonio have very similar climate patterns. Dr. Hayhoe found that projected changes for Austin include increases in annual and seasonal average temperatures, more frequent high temperature extremes, and more frequent extreme precipitation. Higher temperatures and flashier rain patterns may make customer demand patterns more challenging to predict. An important strategy to mitigate these challenges has been implementation of

Figure 13-1: Seasonal Average Temperatures (Source: City of San Antonio Sustainability Plan)
conservation programs that transition San Antonio landscapes to attractive, resilient plant material.

Regarding more nationwide/global climatic conditions, Dr. Hayhoe co-authored the June 2017 *U.S. Global Change Research Program Climate Science Special Report (CSSR)*. The findings from that report agree with other previous research, with some new information. Authors of that report state with very high confidence that longer duration hydrological droughts will become increasingly probable. As mentioned previously, this plan uses a more severe drought by merging the intensity of the 2011-2014 drought with the duration of the 1950s drought. Also mentioned previously, this hybrid Drought of Record is a layer of conservatism that is in addition to the layer of conservatism that SAWS has been using for its last two Water Management Plans: projecting supply and demand during a 108-month drought, versus the 77-month drought used in the State Water Plan.

*Figure 13-2: Wettest 5-Day Rainfall in Inches (Source: City of San Antonio Sustainability Plan)*

SAWS’ water supply portfolio might be relatively mitigated in instances of extreme weather patterns, but every water utility will face operational challenges associated with changes in climatic conditions. Pipe corrosion, tree root ingress, sanitary sewer overflows, pipe bursts, degraded disinfection byproducts due to higher water temperature, pump and motor inefficiencies due to higher air temperature, and higher irrigation demand are all potential ramifications against which all water utilities will need to be vigilant. During the development of CoSA’s Sustainability Plan, SAWS participated in a Climate Vulnerability Assessment, a summit of dozens of regional
agencies that might be affected by climatic conditions. The findings of that body can be found as Appendix B to the Sustainability Plan.

Several initiatives have been undertaken to lessen SAWS’ impact on the environment. These initiatives are exemplified by SAWS’ Dos Rios Water Recycling Center which recycles water, biosolids and methane, and houses one of the largest solar fields in the state via a public-private partnership. Upon visiting Dos Rios, former EPA Administrator Gina McCarthy stated, “I don’t think there’s a better example than San Antonio. It’s remarkable what you’ve done here...It’s going to be the kind of project we tout across the U.S.” SAWS also has implemented load reduction programs that lower emissions, by shifting energy load to non-peak hours.

SAWS is uniquely well positioned to manage the challenges predicted by changing conditions and by extreme weather variations, due to its resiliency via diversification, relative immunity to increased evaporation, distance from the coast, and lack of reliance to snowpack. Geographically, San Antonio is just south enough from Tornado Alley, just northwest enough from the destruction caused by hurricanes and sea level rise, and just east enough from arid west Texas. SAWS continues to join water utilities across the nation that are analyzing how variable and extreme weather patterns might impact supplies, demand and infrastructure, and this Plan outlines a water management program that mitigates these conditions, and are also good business practices for SAWS.
The 2017 Water Management Plan identifies the path toward SAWS’ water security. Implementing the plan provides a balanced planning approach between conservation and a diversified water portfolio. However, no matter how well a plan is developed, uncertainty remains. The underlying assumptions used to develop the WMP are conservative in nature and rely on the side of meeting demand through a hybrid drought of record rather than risk the potential of not having enough water to meet demand. The WMP is flexible enough and updated often enough to adjust and mitigate for those changes. Risks and uncertainties take many forms such as the examples provided in the following: under/over predicting demand (inaccurate population projections and/or GPCD targets), variability of water supply yield, changes in regulations impacting access to water supply, storage capacity of ASR, severity and duration of the next drought, and fluctuations in water quality. The list of risks and uncertainties identified (while not exhaustive) provide the greatest impact to the success of the WMP. The WMP is generally updated on a five year basis unless conditions warrant change sooner. A significant change to one or more assumptions due to a described risk would warrant a revision of the WMP prior to the five year cycle. The table below describes strategies that could be included, should significant change occur, in an update or amendment to this WMP if needed.
## Risk Mitigation Strategies

<table>
<thead>
<tr>
<th>Risk</th>
<th>Mitigation Strategies</th>
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</thead>
<tbody>
<tr>
<td><strong>Over estimating demand</strong></td>
<td>Supplies are planned to meet certain demand projections. If demand falls short of expectations, SAWS will effectively manage the utilization of current supplies as well as reevaluate the delivery date of planned water supplies such as brackish groundwater desalination and expanding the Local Carrizo project.</td>
</tr>
<tr>
<td><strong>Under estimating demand</strong></td>
<td>The WMP provides for flexibility in adjusting for demands exceeding projections. Additional conservation initiatives will be initiated to offset the higher than projected GPCD.</td>
</tr>
<tr>
<td></td>
<td>If demand warrants, SAWS will bring online the expanded Local Carrizo project and additional phases of brackish groundwater desalination sooner than identified in this document. In addition, the option of implementing a project included in the further consideration section would be evaluated.</td>
</tr>
<tr>
<td><strong>Variability of water supply yield</strong></td>
<td>Water supply yields are based on the best available information at the time of the WMP publication. Conditions can change based on the physical limitations of the source water or by infrastructure based limitations to produce, treat and/or distribute. SAWS has the ability to gain access to additional water through current agreements to offset loss of supply. Infrastructure limitations will be identified and mitigated by implementing a capital improvement program correcting project limitations.</td>
</tr>
<tr>
<td><strong>Changes in regulations impacting access to water supply</strong></td>
<td>All SAWS water supplies are affected by varying degrees of regulatory constraints. SAWS will continue to work collaboratively and partner with those regulating entities towards the goal of developing the best science and policy.</td>
</tr>
<tr>
<td></td>
<td>If regulations reduce project yields, SAWS will bring online the expanded Local Carrizo project and additional phases of brackish groundwater desalination sooner than identified in this document. In addition, the option of implementing a project included in the further consideration section would be evaluated.</td>
</tr>
</tbody>
</table>
### Storage capacity of the ASR

SAWS commissioned the University of Texas at San Antonio to calculate the potential maximum storage capacity of the ASR program. Researchers identified a maximum storage capacity of 200,000 acre-feet. Current ASR storage is 143,000 acre-feet. If additional storage bears evidence of being hydrogeologically constrained, SAWS will re-evaluate the impact of this reduced storage capacity to the supply and demand model. The ability to store above the 200,000 acre-feet is also a possibility that would be of tremendous benefit in mitigating longer term droughts. Updates to the WMP would be made if change to storage capacity is of enough significance.

### Severity and duration of drought

Changes in climatic conditions could result in less supply than planned and/or greater demand than planned. Should the region experience a drought more severe or longer than SAWS hybrid Drought of Record, mitigation could be achieved by:

- SAWS proactive demand management programs including drought restrictions could serve to reduce demand during an extended or severe drought.
- SAWS has the ability to bring online the expanded Local Carrizo project and additional phases of brackish groundwater desalination sooner than identified in this document. In addition, the option of implementing a project included in the further consideration section of this plan would be evaluated.
While this Plan identifies the timing and magnitude of water supply projects and water conservation programs up until 2070, SAWS evaluates many different strategies and technologies. In the event of a change in demand projections or supply reliability, other options are also available to SAWS for further consideration. These options are compared against other projects and could be implemented during the planning horizon. Similarly, should the planning assumptions in this document prove to be accurate, the projects identified in this section would provide water security for San Antonio for decades beyond 2070.

Expansion of Brackish Groundwater Desalination

Above and beyond the three phases of brackish desalination identified in Sections 3 and 10, additional brackish groundwater desalination could be undertaken in the future. SAWS would acquire brackish groundwater production rights from interested landowners whose properties overlie aquifers containing brackish groundwater. Wells would be drilled and brackish water would be piped to a desalination plant constructed proximate to San Antonio. The amount of water that would be developed would be based on future needs, and could be constructed in phases as demand develops. SAWS did a preliminary analysis of an expanded desalination project into Wilson County in 2011; however, regulatory and permitting challenges were noted, and the project was found to be a similar per unit cost as Vista Ridge.
**Expansion of the Direct Non-Potable Recycled Water System**

Presently, more than 130 miles of pipeline deliver high-quality recycled water for use by commercial and industrial customers, golf courses, and parks, as well as the River Walk. As the volume of wastewater treated by SAWS increases with population growth, SAWS may consider further expansion of the recycled water system to offset future potable water needs.

**Direct Potable Reuse of Treated Wastewater**

The technology and techniques for treating wastewater to potable standards to be reused as drinking water are well established and mature. Texas leads the nation in direct potable reuse, with El Paso (pilot project), Wichita Falls (currently indirect potable) and Colorado River Municipal Water District (Big Spring) currently engaged in potable reuse to some degree. The largest obstacle to direct potable reuse of treated wastewater is public perception. This type of project would require significant public discussion before proceeding.

**Desalination at the Gulf of Mexico**

One day it may be economically feasible to desalinate seawater, manage the resulting brine in an environmentally responsible way, and pump the treated water inland to San Antonio. SAWS will continue to evaluate the feasibility of seawater dealination. However, the intent now, and for the foreseeable future, is to remain focused on brackish groundwater desalination in close proximity to Bexar County. The present obstacles to using brackish groundwater are primarily regulatory in nature, and SAWS intends to continue cooperating with those stakeholders considering state-wide regulatory reforms that facilitate responsibly making more brackish groundwater available for desalination.

**Stormwater Management**

Stormwater management can be categorized into recharge enhancements and direct surface applications. Regarding recharge enhancements, the San Antonio community is already taking advantage of the Edwards Aquifer’s astounding ability to harvest stormwater naturally. The Edwards Aquifer is one of the most effective aquifers in the country at recharging stormwater. In fact, EAA operates four recharge dams on the Edwards Aquifer Recharge Zone, which have recharged approximately 210,000 acre-feet since their construction in the 1970s/1980s for the benefit of its regional permit holders. Future stormwater management via recharge will require partnerships, scientific studies, and collaboration. The present regulatory environment is not favorable for recharge enhancement initiatives for municipal supply purposes. SAWS views the enhancement of recharge as a public good and continues to support its implementation.
as a regional benefit, but will not be pursuing the matter from the municipal water supply perspective at this time. However, there are smaller projects that will continue to be explored, and implemented when benefit can be shown.

Directly using stormwater at the surface for irrigation on a large scale by SAWS would still require significant treatment facilities, as well as multiple grey infrastructure facilities for storing and distributing the water across the service area. Unless treated to the same quality as SAWS existing water sources, which would be very cost intensive, a larger stormwater management system would be required, as well as new end-user plumbing upgrades. Instead, SAWS is pursuing more natural stormwater management solutions, such as distributing rain barrels, and partnering with builders, and community organizations to promote its respective incentives to build rain gardens. From a water supply perspective, stormwater supply is highly variable, and would frequently not be available during the times of highest demands and extended drought conditions. In fact, stormwater management efforts could be significantly challenging when one considers the potential of longer and more intense droughts that will likely occur in the future, meaning water would not be available when its needed. SAWS will continue to monitor industry developments in stormwater management technology and evaluate potential applications.
To allow for meaningful comparison, the updated costs per acre-foot of the water supply projects and the associated integration projects that have been described in this plan are presented here. Specifically, the costs for projects that have been completed will be presented alongside planned projects. This section also presents the impact on average residential monthly charges through the year 2020.

**Water Supply Project Costs per Acre-Foot**

The annual costs per acre-foot of current and planned projects in the 2017 Water Management Plan are shown below in Figure 16-1.

*Figure 16-1: Annual Cost per Acre-Foot by Project (NOTE: Does not include integration costs.)*
Integration Costs

Major transmission pipelines are necessary to transport water from several water supply projects to distribution lines serving SAWS customers. Since these transmission lines may support multiple projects, it is difficult to allocate the costs of integration infrastructure directly to specific projects. Consequently, integration capital costs are not included in Figure 16-1 above. Separate integration costs per acre-foot are shown in the below table in Figure 16-2. Calculation of the integration costs per acre-foot follow the same assumptions used to develop the project costs shown in Figure 16-1 above, to include debt service payments, pump station energy costs and maintenance on the pump stations and pipelines.

*Figure 16-2: Integration Costs per Acre-Foot*

<table>
<thead>
<tr>
<th>Integration Project</th>
<th>Cost per AF</th>
<th>Capacity (MGD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern (Complete)</td>
<td>$212.17</td>
<td>50</td>
</tr>
<tr>
<td>Western Phase I (Complete)</td>
<td>$226.74</td>
<td>50</td>
</tr>
<tr>
<td>Western Phase II (Future)*</td>
<td>$458.55</td>
<td>25</td>
</tr>
<tr>
<td>Central Water Integration (Future)*</td>
<td>$316.61</td>
<td>45</td>
</tr>
</tbody>
</table>

*O&M cost estimates are not final.

Impact on Water Supply Fee Charges

In November 2015, to ensure that sufficient resources are available to implement the Vista Ridge project, the City Council approved in advance five consecutive years of Water Supply Fee (WSF) rate adjustments (2016 through 2020). The fee adjustments approved for the four years from 2017 through 2020 are maximum allowable adjustments. If the projected costs in these years are less than the anticipated costs, the rate adjustment will be lowered accordingly.

Please see the table in Figure 16-3 below. The maximum anticipated increases to the WSF each year are expressed in terms of its impact on the projected total average residential bill for a customer using 7,092 gallons of water and 5,668 gallons of wastewater. The table below shows the maximum adjustments authorized each year through 2020.
Rate Structure and Affordability

SAWS rates continue to be in a tiered structure to incentivize lower water consumption. This is meant to send a price signal to the higher water usage tiers in hopes of achieving more water conservation through our rate structure. In addition to conservation, SAWS new rate structure also strives to ensure that life essential uses of water are made as affordable as possible. While a rate strategy, this is also a water management, conservation, and affordability strategy that is revisited approximately every five years through a community Rates Advisory Committee.
Community Input

SAWS’ Board of Trustees and Executive Management committed early in the process to expand the outreach to not only inform the public of the process of updating the utility’s Water Management Plan, but also to solicit feedback concerning the priorities that form the basis for planning the utility’s water future through 2070.

In its continued commitment to transparency, SAWS started previewing information on the upcoming Water Management Plan to the SAWS Citizens Advisory Panel which made recommendations to staff and the SAWS Board of Trustees on key aspects of formulating the 2017 WMP along with presentations to the Community Conservation Committee. SAWS committed to live stream every Board meeting, have updates on the Vista Ridge project at every Board meeting, conduct both public meetings and one-on-ones with key stakeholders, as well as holding Facebook Live community input sessions. Going forward, SAWS is committed to keep the community updated throughout the process.

A public relations campaign was launched to begin soliciting input from previously underrepresented groups. The website WaterCitySA.com featured overview videos of the Water Management Plan and included opportunities for input from those who would normally not attend homeowner/neighborhood association or public meetings.
Water-related information disseminated through the WaterCitySA.com site allowed SAWS to better reach the community. Visitors to the site have reached nearly 10,000. To further reach the community, information was promoted through social media platforms including Twitter, Facebook, and Nextdoor. Communications also reached out to the city’s extensive bloggers groups (influencers), who then shared information via their social channels, increasing SAWS’ reach.

Continued outreach by SAWS Water Resources and Communications solicited input from homeowner/neighborhood associations as well as leadership groups including:

- San Antonio City Council
- City of San Antonio
- Chambers of commerce
- Environmental groups
- Industry and trade organizations

In a SAWS first, Facebook Live broadcasts were utilized to inform the community of the Water Management Plan’s importance as an open discussion of the WMP’s key components. There have been over 20,000 viewers who have watched the Facebook broadcasts and were able to ask questions providing input during and after the live broadcast.

As a result of thoughtful input from the community prior to this plan’s approval by SAWS Board of Trustees, the 2017 Water Management Plan Task Force added language and data that addresses comments they received. Some of these topics include conservation strategies, stormwater management, sustainable groundwater management and mitigation, risk management, water quality, and transparency.
Summary

San Antonio Water System’s path toward water supply diversity began in the 1990s with the onset of state regulation of San Antonio’s only water source, the Edwards Aquifer.

With regulation of the Edwards Aquifer, what was once an unlimited source of water became a permitted supply that alone couldn’t sustain the long-term needs of the region. Rapidly increasing population, coupled with the threat of another extended drought, stressed the capacity of available water.

Once perceived as a city with limited water availability, San Antonio leadership has worked for the last 20 years to radically change the water supply situation, thereby sustaining a thriving economy. Development of numerous water supply projects constructed over that time frame, combined with progressive conservation efforts, place San Antonio in an enviable position.

In fact, San Antonio has stepped forward to provide primary or backup water services to the city’s water-challenged military bases, ensuring bases can sustain current and future missions and accommodate growth.

Once perceived as a city with limited water availability, San Antonio leadership has worked for the last 20 years to radically change the water supply situation.
Since the 2012 Water Management Plan, SAWS has implemented a number of water supply and conservation initiatives securing San Antonio’s water future:

- Over 2 million square feet of water-intensive grass was replaced with low water-use plants or permeable patios through WaterSaver Landscape Coupon programs.
- Regional Carrizo Water Project was brought on line in 2013, providing more than 10,000 acre-feet of water in both 2015 and 2016 from the Carrizo Aquifer in Gonzales County to San Antonio.
- In January 2017, SAWS held the grand opening of the H2Oaks Desalination Plant and water center, Phase I of which is capable of producing 12 million gallons of drinking water daily from desal operations.
- WaterSaver Irrigation Consultations providing home irrigation and landscape education visits have reduced household usage by 84 million gallons per year.
- The GardenStyleSA.com website and e-newsletter providing timely San Antonio-focused low water use landscape information to reduce outdoor watering.
- SAWS’ ASR at H2Oaks has reached a record storage volume of 143,000 acre-feet, representing over a half-year of SAWS potable demand.
- SAWS has partnered with The University of Texas at Austin based Pecan Street to develop an integrated conservation platform that will expand water conservation opportunities in the future.
- The public-private partnership with Vista Ridge LLC for up to 50,000 acre-feet per year of groundwater from Burleson County by 2020 is recognized globally as a benchmark agreement in water projects.

All this has been achieved by implementing continuous planning, with the Water Management Plan as the road map for San Antonio’s water future. SAWS will continue to expand on its previous successes in implementing the 2017 Water Management Plan using a two-pronged approach by reducing demand through its industry-leading conservation programs and investment in reducing its nonrevenue water.

These efforts will ultimately lead to a decrease in the total gallons per capita per day (GPCD) in an average year from 124 GPCD in 2017 to 88 GPCD in 2070, with additional savings during drought from outdoor watering restrictions.

Conservation coupled with the timely development of diversified water supply projects will provide water security for SAWS ratepayers through 2050 with current supplies and water supply projects currently under construction.
Meeting demands beyond 2050 requires continued implementation of key elements in this plan to include: progressive GPCD goals, further diversification of supply, and targeted investment in infrastructure to reduce nonrevenue water loss. Implementing the 2017 Water Management Plan ensures water security for San Antonio through 2070.

<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Action</th>
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</thead>
<tbody>
<tr>
<td><strong>Near Term</strong></td>
<td>Reduce total planned GPCD in an average year from 124 GPCD in 2017 to 112 GPCD in 2025</td>
</tr>
<tr>
<td></td>
<td>Secure up to 50,000 acre-feet per year of Vista Ridge groundwater</td>
</tr>
<tr>
<td></td>
<td>Reduce nonrevenue water to 14 percent by total production volume</td>
</tr>
<tr>
<td><strong>Mid Term</strong></td>
<td>Reduce total planned GPCD in an average year from 112 GPCD in 2026 to 96 GPCD in 2040</td>
</tr>
<tr>
<td></td>
<td>Expand treatment capacity at H₂Oaks Center for ASR recovery and Local Carrizo production</td>
</tr>
<tr>
<td><strong>Long Term</strong></td>
<td>Reduce total planned GPCD in an average year from 96 GPCD in 2040 to 88 GPCD in 2070</td>
</tr>
<tr>
<td></td>
<td>Build out Brackish Groundwater Desalination, for a total yield of 33,600 acre-feet per year</td>
</tr>
<tr>
<td></td>
<td>Develop the 21,000 acre-feet per year Expanded Carrizo project</td>
</tr>
</tbody>
</table>
Acronyms and Abbreviations

AACOG   Alamo Area Council of Governments
AF      acre-foot (325,851 gallons)
ASR     Aquifer Storage & Recovery facility
BGD     Brackish Groundwater Desalination
BMA     Bexar-Medina-Atascosa Water Control & Improvement District #1
BexarMet Bexar Metropolitan Water District
BSR     Bulverde Sneckner Ranch
CoSA    City of San Antonio
CAP     Citizens Advisory Panel
CCC     Community Conservation Committee
CCN     Certificate of Convenience and Necessity
CPSE    CPS Energy
CRWA    Canyon Regional Water Authority
DFCs    Desired Future Conditions
DOR     Drought of Record
EAA     Edwards Aquifer Authority
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tr>
<td>EAHCP</td>
<td>Edwards Aquifer Habitat Conservation Plan</td>
</tr>
<tr>
<td>EAPP</td>
<td>Edwards Aquifer Protection Program</td>
</tr>
<tr>
<td>EARIP</td>
<td>Edwards Aquifer Recovery Implementation Program</td>
</tr>
<tr>
<td>GGRA</td>
<td>Guadalupe-Blanco River Authority</td>
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<tr>
<td>GMA</td>
<td>Groundwater Management Area</td>
</tr>
<tr>
<td>GPCD</td>
<td>Gallons per Capita per Day</td>
</tr>
<tr>
<td>ICI</td>
<td>Industrial, Commercial, Institutional (General Class)</td>
</tr>
<tr>
<td>ILI</td>
<td>Infrastructure Leak Index</td>
</tr>
<tr>
<td>MAG</td>
<td>Modeled Available Groundwater</td>
</tr>
<tr>
<td>MGD</td>
<td>Million Gallons per Day</td>
</tr>
<tr>
<td>MPO</td>
<td>Metropolitan Planning Organization</td>
</tr>
<tr>
<td>MW</td>
<td>Megawatt</td>
</tr>
<tr>
<td>NRW</td>
<td>Nonrevenue Water</td>
</tr>
<tr>
<td>RCP</td>
<td>Regional Carrizo Project</td>
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<tr>
<td>SARA</td>
<td>San Antonio River Authority</td>
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<tr>
<td>SAWS</td>
<td>San Antonio Water System</td>
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<tr>
<td>SSLGC</td>
<td>Schertz-Seguin Local Government Corporation</td>
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<tr>
<td>TCEQ</td>
<td>Texas Commission on Environmental Quality</td>
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<td>TSDC</td>
<td>Texas State Data Center</td>
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<td>TWDB</td>
<td>Texas Water Development Board</td>
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<td>USFWS</td>
<td>U.S. Fish and Wildlife Service</td>
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<td>WECo</td>
<td>Water Exploration Company</td>
</tr>
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<td>WMP</td>
<td>Water Management Plan</td>
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Appendices
Supply and Demand Model Assumptions

Population Projections

- Utilized COSA adopted full migration growth rates from 2015-2040. The population from 2017 – 2040 is 1,817,387 to 2,596,769.
- Utilized 2014 Texas State Data Center half migration growth rates to extend the SAWS population projections out to 2070. The population for this period (2040-2070) is 2,596,769 to 3,278,889.

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2020</th>
<th>2030</th>
<th>2040</th>
<th>2050</th>
<th>2060</th>
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<tr>
<td>Population</td>
<td>1,817,387</td>
<td>1,919,271</td>
<td>2,257,905</td>
<td>2,596,769</td>
<td>2,824,828</td>
<td>3,052,026</td>
<td>3,278,889</td>
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Disaggregated Demand Projections

Residential (single family and multi-family)

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<th>2040</th>
<th>2050</th>
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<tbody>
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<td>Population</td>
<td>1,817,387</td>
<td>1,919,271</td>
<td>2,257,905</td>
<td>2,596,769</td>
<td>2,824,828</td>
<td>3,052,026</td>
<td>3,278,889</td>
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<tr>
<td>Planned GPCD</td>
<td>73</td>
<td>71</td>
<td>69</td>
<td>63</td>
<td>59</td>
<td>57</td>
<td>55</td>
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<tr>
<td>Planned Demand (AF)</td>
<td>158,331</td>
<td>162,622</td>
<td>174,382</td>
<td>182,803</td>
<td>186,578</td>
<td>194,578</td>
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Industrial, Commercial, and Institutional

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<th>2040</th>
<th>2050</th>
<th>2060</th>
<th>2070</th>
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</thead>
<tbody>
<tr>
<td>Number of Connections</td>
<td>25,849</td>
<td>26,910</td>
<td>30,771</td>
<td>35,187</td>
<td>40,237</td>
<td>46,011</td>
<td>52,614</td>
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<tr>
<td>Monthly Usage (kgal/bill)</td>
<td>48.5</td>
<td>47.1</td>
<td>43.3</td>
<td>40.0</td>
<td>38.1</td>
<td>36.5</td>
<td>35.0</td>
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<tr>
<td>Annual Usage (kgal/bill)</td>
<td>582</td>
<td>566</td>
<td>519</td>
<td>480</td>
<td>458</td>
<td>438</td>
<td>420</td>
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<tr>
<td>Planned Demand (AF)</td>
<td>46,135</td>
<td>46,711</td>
<td>49,031</td>
<td>51,833</td>
<td>56,523</td>
<td>61,820</td>
<td>67,815</td>
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Industrial, Commercial, and Institutional - Irrigation

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</thead>
<tbody>
<tr>
<td>Number of Connections</td>
<td>8,163</td>
<td>8,498</td>
<td>9,717</td>
<td>11,112</td>
<td>12,706</td>
<td>14,530</td>
<td>16,615</td>
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<tr>
<td>Monthly Usage (kgal/bill)</td>
<td>26.4</td>
<td>23.0</td>
<td>18.4</td>
<td>15.8</td>
<td>15.0</td>
<td>15.0</td>
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<tr>
<td>Annual Usage (kgal/bill)</td>
<td>316</td>
<td>276</td>
<td>220</td>
<td>190</td>
<td>180</td>
<td>180</td>
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<tr>
<td>Planned Demand (AF)</td>
<td>7,928</td>
<td>7,210</td>
<td>6,574</td>
<td>6,472</td>
<td>7,019</td>
<td>8,026</td>
<td>9,178</td>
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Nonrevenue Water Program

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<th>2030</th>
<th>2040</th>
<th>2050</th>
<th>2060</th>
<th>2070</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Loss + Apparent Loss + Authorized Use (AF)</td>
<td>40,457</td>
<td>38,392</td>
<td>37,440</td>
<td>39,250</td>
<td>40,717</td>
<td>43,064</td>
<td>45,418</td>
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<tr>
<td>Nonrevenue as % of Total Production</td>
<td>16.00%</td>
<td>15.06%</td>
<td>14.00%</td>
<td>14.00%</td>
<td>14.00%</td>
<td>14.00%</td>
<td>14.00%</td>
</tr>
</tbody>
</table>

Non-Revenue Water (NRW)

- An initial 17% NRW has been planned for, decreasing to 14% by 2025. Staff will continue to review System processes and outside consultant recommendations to determine what improvements can be implemented that are financially beneficial.
Total Demand Projections without restrictions (*high, average, and low*)

**Total GPCD (high, average, low)**

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2020</th>
<th>2030</th>
<th>2040</th>
<th>2050</th>
<th>2060</th>
<th>2070</th>
</tr>
</thead>
<tbody>
<tr>
<td>high</td>
<td>133</td>
<td>128</td>
<td>115</td>
<td>106</td>
<td>101</td>
<td>98</td>
<td>96</td>
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<tr>
<td>average</td>
<td>124</td>
<td>119</td>
<td>106</td>
<td>96</td>
<td>92</td>
<td>90</td>
<td>88</td>
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<tr>
<td>low</td>
<td>113</td>
<td>108</td>
<td>97</td>
<td>89</td>
<td>85</td>
<td>82</td>
<td>80</td>
</tr>
</tbody>
</table>

**Total Acre-Feet per Year (high, average, low)**

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2020</th>
<th>2030</th>
<th>2040</th>
<th>2050</th>
<th>2060</th>
<th>2070</th>
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</thead>
<tbody>
<tr>
<td>high</td>
<td>270,000</td>
<td>273,000</td>
<td>289,000</td>
<td>305,000</td>
<td>317,000</td>
<td>335,000</td>
<td>352,000</td>
</tr>
<tr>
<td>average</td>
<td>253,000</td>
<td>255,000</td>
<td>267,000</td>
<td>280,000</td>
<td>291,000</td>
<td>308,000</td>
<td>324,000</td>
</tr>
<tr>
<td>low</td>
<td>229,000</td>
<td>231,000</td>
<td>244,000</td>
<td>255,000</td>
<td>266,000</td>
<td>281,000</td>
<td>296,000</td>
</tr>
</tbody>
</table>

- Total demand projections above incorporate the progressive GPCD goals in SAWS 2017 WMP, but not additional Stage 1 and 2 drought restrictions. However, SAWS 2017 WMP does assume demand reductions from its residential customers due to Stage 1 and 2 drought restrictions, throughout the nine-year hybrid Drought of Record.

**Supply Assumptions**

**Edwards**

- Allow leased Edwards portfolio to reduce from 36,000 AFY to 25,000 AFY. The maintenance of the 25,000 AFY long-term will be achieved via combination of leasing, buying, dry year option and spot leasing.
- Total Edwards inventory maintained at 281,146 AFY. Short-term 273,146 AFY available to meet demand and 8,000 AFY committed to the HCP through 2027.

**Trinity**

- Available through planning period

**Regional Carrizo** – planned volume of 13,557 in 2017, 2018 to 2070 at 11,057 AFY with no planned SSLGC surplus.

**CRWA** – Current volume 6,300 AF with an additional 500 AFY in 2024 for a total of 6,800 AF
BMA

- Contract yield is 19,974 AF with an expiration date of December 31, 2049
- 13,000 AF included in the Supply & Demand model in 1st, 2nd and 9th years of a drought

Western Canyon

- Contract expires on December 31, 2037, but can be extended by SAWS to December 31, 2077

Current ASR Recovery Assumptions

- Current recovery expected to be 30,100 AFY from ASR up the Eastern Leg
- With the addition of the Water Resource Integration Pipeline, ASR recovery could increase to 57,000 AFY.
- Maximum annual ASR storage 50,000 AFY (45 mgd)
- ASR storage capped at 200,000 AF

Brackish Groundwater Desalination

- Peak capacity of phase I of the Brackish Groundwater Plant is 13,440 AFY (12 mgd)
- Phases II & III will provide an additional 13,440 AFY (12 mgd) and 6,720 AFY (6 mgd) respectively. These will be developed and brought online as potential supply gaps are anticipated.

Local Carrizo

- Phases I, II & III are all planned at 7,000 AFY (6.25 mgd) and will be developed and incorporated into the System as water is needed to meet potential supply gaps in the future.
Vista Ridge LLC

<table>
<thead>
<tr>
<th>Source</th>
<th>Unilateral or Mutual Consent?</th>
<th>Staff Recommendation</th>
<th>Reason</th>
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</thead>
<tbody>
<tr>
<td>Medina System</td>
<td>N/A</td>
<td>Assume termination in 2049</td>
<td>Extension not an option</td>
</tr>
<tr>
<td>WECo</td>
<td>Mutual Consent</td>
<td>Assume termination in 2027</td>
<td>Not unilateral</td>
</tr>
<tr>
<td>BSR</td>
<td>Unilateral</td>
<td>Assume termination in 2020</td>
<td>Not firm supply</td>
</tr>
<tr>
<td>Western Canyon</td>
<td>Unilateral</td>
<td>Assume termination in 2037</td>
<td>Large lump sum payment required</td>
</tr>
<tr>
<td>Lake Dunlap</td>
<td>Mutual Consent</td>
<td>Assume termination in 2038</td>
<td>Not unilateral</td>
</tr>
<tr>
<td>Wells Ranch</td>
<td>Mutual Consent</td>
<td>Assume termination in 2047</td>
<td>Not unilateral</td>
</tr>
<tr>
<td>Oliver Ranch</td>
<td>Unilateral</td>
<td>Assume extension to 2035</td>
<td>Unilateral</td>
</tr>
<tr>
<td>SSLGC</td>
<td>Unilateral</td>
<td>Assume extension to 2070</td>
<td>Unilateral</td>
</tr>
<tr>
<td>Vista Ridge</td>
<td>Unilateral</td>
<td>Assume extension to 2070</td>
<td>Unilateral</td>
</tr>
</tbody>
</table>

**Water Supply Contract Terms**

SAWS assumes that the EAHCP commitment will continue throughout the planning period. EAHCP commitment requires two triggers before SAWS is required to forbear Edwards Aquifer production. The two triggers are:

- J-17 falling below 630’ MSL before June 30th
- The Rolling 10 year average of the Edwards Aquifer recharge falling below 500,000 AFY

Once triggered SAWS would be required to forbear 110,300 AF of Edwards over a 3 ⅓ year period if the EAA has provided the water to store. Forbearance has to be initially targeted towards the Northeast quadrant of the SAWS service area.
Future Water Supply Portfolios

SAWS’ 2017 WMP plans for a recurrence of the Drought of Record. In this scenario, SAWS’ Edwards Aquifer supply is reduced by ~44%, plus the EAHCP forbearance (discussed above). SAWS’ water supply portfolio in 2017 and 2070 under drought conditions is illustrated below.

Supply Portfolio Diversification (Drought Year)

In average years, SAWS water supply portfolio expands, and the Edwards Aquifer comprises a larger percentage. SAWS’ water supply portfolio in 2017 and 2070 in average conditions is illustrated below.
Figure 1-3: SAWS aims to achieve a total GPCD of 88 by 2070. If SAWS were to remain at 124 GPCD through 2070, SAWS demand would be an additional 132,000 AFY, as identified in the light gray bars below.

Figure 5-6: SAWS population projections, total GPCD projections, and total demand projections. Total Water Demand = GPCD x Population. If SAWS were to remain at 124 GPCD through 2070, SAWS demand would be an additional 132,000 AFY, as identified in the light gray bars below.

<table>
<thead>
<tr>
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<th>2020</th>
<th>2030</th>
<th>2040</th>
<th>2050</th>
<th>2060</th>
<th>2070</th>
</tr>
</thead>
<tbody>
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<td>Population</td>
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<td>3,052,026</td>
<td>3,278,889</td>
</tr>
<tr>
<td>Planned GPCD</td>
<td>124</td>
<td>119</td>
<td>106</td>
<td>96</td>
<td>92</td>
<td>90</td>
<td>88</td>
</tr>
<tr>
<td>Planned Demand (1000s of AF)</td>
<td>253</td>
<td>255</td>
<td>267</td>
<td>280</td>
<td>291</td>
<td>308</td>
<td>324</td>
</tr>
<tr>
<td>Additional Demand @ 124 GPCD (1000s of AF)</td>
<td>0</td>
<td>12</td>
<td>47</td>
<td>81</td>
<td>102</td>
<td>117</td>
<td>132</td>
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</table>
Figure 1-6: SAWS ensures water for generations by setting progressive demand goals with stage 1 and 2 landscape watering restrictions, and then evaluating the need to develop future planned supplies. Scenario below represents a Drought of Record.

Figure 11-2: SAWS Long Term supply and demand outlook shows no supply gap with further supply development, with desalination and Expanded Carrizo fully built. Scenario below represents a Drought of Record.

<table>
<thead>
<tr>
<th>Year</th>
<th>Projected Demand High</th>
<th>Projected Demand</th>
<th>Projected Demand Low</th>
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<td>324,717</td>
<td>297,543</td>
<td>270,363</td>
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<td>2063</td>
<td>326,418</td>
<td>300,808</td>
<td>271,793</td>
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<td>2064</td>
<td>328,120</td>
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<td>321,197</td>
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<td>322,849</td>
<td>310,600</td>
<td>265,207</td>
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<tr>
<td>2070</td>
<td>338,319</td>
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<table>
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<tr>
<th>Year</th>
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<td>0</td>
</tr>
<tr>
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<td>23,097</td>
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<td>178,547</td>
<td>49,898</td>
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<tr>
<td>2069</td>
<td>178,547</td>
<td>0</td>
</tr>
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<td>35,397</td>
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Figure 4-1: SAWS Water Management Plan population projections

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<th>2040</th>
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<td>1,577,597</td>
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<td>1,791,681</td>
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<td>1,429,000</td>
<td>1,536,800</td>
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<td>2012 WMP*</td>
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* Includes population in areas formerly served by Bexar Metropolitan Water District.
Figure 5-2: Long-Term Conservation Projections for Residential Customers

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<th>2060</th>
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<tbody>
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<td>81</td>
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Total Residential GPCD
Single + Multi-Family

2001 2006 2011 2016 2021 2026 2031 2036 2041 2046 2051 2056 2061 2066
GPCD

- High Demand
- Average Demand
- Low Demand
- Historical GPCD
Figure 5-3: Long-Term Conservation Projections for ICI Irrigation Water Use

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<th>2020</th>
<th>2030</th>
<th>2040</th>
<th>2050</th>
<th>2060</th>
<th>2070</th>
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ICI Irrigation Trend

Monthly Usage Per Bill
Industrial, Commercial, Institutional

![Graph showing ICI Irrigation Trend](image-url)
Figure 5-4: Long-Term Conservation Projections for ICI Usage

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<th></th>
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<th>2020</th>
<th>2030</th>
<th>2040</th>
<th>2050</th>
<th>2060</th>
<th>2070</th>
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<td>43</td>
<td>40</td>
<td>38</td>
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<th>2005</th>
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ICI Trend

Monthly Usage Per Bill
Industrial, Commercial, Institutional

Gallons

2001 2006 2011 2016 2021 2026 2031 2036 2041 2046 2051 2056 2061 2066

High Demand  Average Demand  Low Demand  Historic Demand
**Figure 5-5: Long-Term Total Demand Projections for All Customer Classes**

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<th>2050</th>
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**Total GPCD Trend**

- **High Demand**
- **Average Demand**
- **Low Demand**
- **Historic GPCD**
Figure 8-1: SAWS Near Term supply and demand outlook shows a supply gap of 13,130 acre-feet could occur in 2024 without further supply development, such as Vista Ridge. Scenario below represents a Drought of Record.
Figure 8-2: SAWS Near Term supply and demand outlook shows no supply gap with further supply development, such as Vista Ridge. Scenario below represents a Drought of Record.

### Projections

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</tr>
<tr>
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<td>13,440</td>
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<td>13,440</td>
<td>13,440</td>
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<td>13,440</td>
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<tr>
<td>Non-Edwards Supplies</td>
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<td>75,321</td>
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<td>52,530</td>
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</table>

### Bar Graphs

- **Non-Edwards Aquifer**
- **Planned Supplies**
- **Edwards Aquifer**
- **ASR Recovery**
- **ASR Storage**
- **Proj Demand**
- **Proj Demand High**
- **Proj Demand Low**
Figure 11-1: After 30 years of water security from Vista Ridge supply, SAWS Long Term supply and demand outlook shows a supply gap of 5,757 acre-feet could occur in 2050 without further supply development, such as desalination or Expanded Carrizo. Scenario below represents a Drought of Record.

<table>
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<tr>
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<th>2044</th>
<th>2045</th>
<th>2046</th>
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<td>Edwards Aquifer Supply</td>
<td>227,166</td>
<td>218,141</td>
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<td>167,992</td>
<td>141,567</td>
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<td>11,057</td>
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<tr>
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**Figure 16-1: Annual Cost per Acre-Foot by Project**

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<th>Project</th>
<th>Yield (AFY)</th>
<th>Total Capital</th>
<th>Annual O&amp;M</th>
<th>Annual Debt</th>
<th>Without Integration ($/1000 gal)</th>
<th>Without Integration ($/AF)</th>
<th>Integration Cost ($/AF)</th>
<th>Total Cost ($/AF)</th>
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<tr>
<td>Edwards Aquifer Purchase (Best)</td>
<td>284,277</td>
<td>549,094,374</td>
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<td>8,692,527</td>
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<td>1,072</td>
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<td>652,628</td>
<td>1.93</td>
<td>806</td>
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<td>1,678</td>
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<td>1,281,643</td>
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<tr>
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<td>97,700,000</td>
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<td>6.00</td>
<td>1,954</td>
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</tbody>
</table>

*This includes ASR Program costs*
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Questions about the contents of this plan?

Email wmp-input@saws.org
TO: San Antonio Water System Board of Trustees

FROM: Sam Mills, P.E., Director, Development, and Andrea L.H. Beymer, P.E., Vice President, Engineering and Construction

THROUGH: Robert R. Puente, President/Chief Executive Officer

SUBJECT: UTILITY SERVICE AGREEMENT FOR WATER AND/OR WASTEWATER SERVICES TO TRACTS REQUIRING THE SAN ANTONIO WATER SYSTEM FINANCIAL PARTICIPATION IN THE DEVELOPMENT OF INFRASTRUCTURE THROUGH Oversizing or IMPACT FEE CREDITS AND/OR ARE LOCATED OUTSIDE THE SAN ANTONIO WATER SYSTEM WATER AND/OR WASTEWATER CERTIFICATE OF CONVENIENCE AND NECESSITY

Board Action Date: October 10, 2017

SUMMARY AND RECOMMENDATION:

The attached resolution approves Utility Service Agreements (USA) to provide water and/or wastewater services to the specified tracts of land requiring San Antonio Water System’s (the “System”) financial participation in the development of infrastructure through oversizing or impact fee credits, and/or are located outside the System’s water and/or wastewater Certificate of Convenience and Necessity (CCN).

- This board item consists of three tracts, which total 909.09 acres; 2,629 water Equivalent Dwelling Units (EDUs); and 2,329 wastewater water EDUs.

- Board approval is required since the tracts require the System’s financial participation in the development of infrastructure through oversizing or impact fee credits and/or is located outside the System’s water and/or wastewater CCN.

- The Yates Property Tract is located inside the City of San Antonio limits, inside the System’s water CCN and inside the wastewater CCN. The USA provides 2,610 EDUs of water and 2,320 EDUs of wastewater services.

- Davita Judson Tract is located inside the City of San Antonio limits, inside the System’s water CCN and outside the wastewater CCN. The USA provides 16 EDUs of water and seven EDUs of wastewater services.

- Fountain Oaks Professional Park Tract is located inside the Town of Hollywood Park, inside the System’s water CCN and outside the wastewater CCN. The USA provides three EDU’s of water and two EDUs of wastewater services.
The Developer is required to install all necessary on-site facilities in accordance with the Board’s regulations and at the Developer’s total cost.

The Developer is responsible for the construction and engineering costs associated with all required water and/or wastewater mains to serve the tract (on-site and off-site).

Staff recommends that the Board approve this resolution.

<table>
<thead>
<tr>
<th>No.</th>
<th>Tract Name</th>
<th>Developer</th>
<th>Acres</th>
<th>W EDUs</th>
<th>WW EDUs</th>
<th>CoSA / CoSA ETJ / Outside</th>
<th>EARZ / CZ</th>
<th>Board Reason</th>
<th>W CCN</th>
<th>WW CCN</th>
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<td>John O. Yates Trust</td>
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<td>2,610</td>
<td>2,320</td>
<td>COSA</td>
<td>INSIDE</td>
<td>OVR</td>
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<td>2</td>
<td>Davita Judson Tract</td>
<td>SAKDC Judson Dialysis, LLC</td>
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<td>7</td>
<td>COSA</td>
<td>OUTSIDE</td>
<td>CCN</td>
<td>INSIDE</td>
<td>OUTSIDE</td>
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<td>Fountain Oaks Professional Park Tract</td>
<td>BDDFLT BLD, LLC</td>
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<td>Hollywood Park</td>
<td>INSIDE</td>
<td>CCN</td>
<td>INSIDE</td>
<td>OUTSIDE</td>
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</table>

Total 909.09 2,629 2,329

Acronyms:

- EARZ = Edwards Aquifer Recharge Zone
- OVR = Oversizing
- CCN = Certificate of Convenience and Necessity
- CZ = Edwards Aquifer Contributing Zone
- WW = Wastewater
- IFC = Impact Fee Credits
- CoSA = City of San Antonio limits
- ETJ = Extraterritorial Jurisdiction

**EXTENT AND CONDITIONS OF UTILITY SERVICE AGREEMENT:**

Upon approval by the System of this USA, the Developer Customers have 36 months to complete the required utility master plan and to start construction. If a Developer Customer fails to complete these requirements within the 36-month period, the USA will expire and a request for a new agreement must be submitted to the System. During the effective term of this USA, capacity in the System’s water and wastewater systems will be set aside. The Developer Customers are not guaranteed capacity until all required off-site infrastructure is built by the Developer, accepted by the System, and all impact fees are paid.
FINANCIAL IMPACT:

In compliance with the System’s Board of Trustees water extension policy, Developer Customer applicants are responsible for financing all required local benefit facilities and for payment of all applicable impact fees. The Developers will contribute all impact fees in effect at the time of plat recordation or the latest date allowable by law for each subdivision unit. The fees to be collected by the System will be recorded in the Service Recovery Account and are estimated as follows, based on current charges and full build out of the tracts:

<table>
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<tr>
<th>No.</th>
<th>Tract Name</th>
<th>Water Impact Fees</th>
<th>Wastewater Impact Fees</th>
<th>Total Impact Fees</th>
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<tr>
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<td>Davita Judson Tract</td>
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<td>3</td>
<td>Fountain Oaks Professional Park Tract</td>
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<td>$20,258,407</td>
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</table>

The System is responsible for providing access to existing general benefit facilities and/or financing the construction of additional general benefit facilities.

OVERSIZING AND/OR IMPACT FEE CREDITS:

The following USAs have recommendations for the System’s financial participation in the development of infrastructure through oversizing or impact fee credits and/or facilities based on the System’s Master Plan.

<table>
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<tr>
<th>No.</th>
<th>Tract Name</th>
<th>Oversize SAWS</th>
<th>Oversize Developer</th>
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<th>Oversize Developer (%)</th>
<th>Oversize System (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yates Property Bulverde RD Tract 24-INCH</td>
<td>$3,645,650</td>
<td>$2,312,650</td>
<td>$5,958,300</td>
<td>38.81%</td>
<td>61.19%</td>
</tr>
</tbody>
</table>
Utility Service Agreement to the Specified Tract Requiring Oversizing
And/or Outside the System's Water and/or Wastewater CCN

The Developer is required to install all other necessary on-site facilities in accordance with the Board's regulations at the Developer's total cost.

Sam Mills, P.E.
Director
Development

Andrea L.H. Beymer, P.E.
Vice President
Engineering and Construction

APPROVED:

Robert R. Puente
President/Chief Executive Officer

Attachments:
1. Table 1, Tract Information
<table>
<thead>
<tr>
<th>No.</th>
<th>Tract Name</th>
<th>Developer</th>
<th>Principal</th>
<th>CoSA / CoSA ETJ / Outside</th>
<th>EARZ / CZ</th>
<th>PZ</th>
<th>Acres</th>
<th>Water EDU</th>
<th>WW EDU</th>
<th>Watershed</th>
<th>Board Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yates Property Bulverde RD Tract</td>
<td>John O. Yates Trust</td>
<td>John O. Yates</td>
<td>COSA INSIDE 9&amp;10</td>
<td>907.36</td>
<td></td>
<td>2,610</td>
<td>2,320</td>
<td></td>
<td>Mud Creek</td>
<td>OVR</td>
</tr>
<tr>
<td>2</td>
<td>Davita Judson Tract</td>
<td>SAKDC Judson Dialysis, LLC</td>
<td>Clay Roby</td>
<td>COSA OUTSIDE 9</td>
<td>1.397</td>
<td></td>
<td>16</td>
<td>7</td>
<td></td>
<td>Dietz Creek-Cibolo Creek</td>
<td>CCN</td>
</tr>
<tr>
<td>3</td>
<td>Fountain Oaks Professional Park Tract</td>
<td>BDDFLT BLD, LLC</td>
<td>Craig Franklin, CPA, PC</td>
<td>Hollywood Park INSIDE 7</td>
<td>0.33</td>
<td></td>
<td>3</td>
<td>2</td>
<td></td>
<td>Mud Creek</td>
<td>CCN</td>
</tr>
</tbody>
</table>

**Total** 909.09 2,629 2,329

**Acronyms:**
- EARZ = Edwards Aquifer Recharge Zone
- OVR = Oversizing
- IFC = Impact Fee Credits
- CZ = Edwards Aquifer Contributing Zone
- WW = Wastewater
- PZ = Pressure Zone
- CoSA = City of San Antonio limits
- ETJ – Extraterritorial Jurisdiction
RESOLUTION NO.

OF THE SAN ANTONIO WATER SYSTEM BOARD OF TRUSTEES APPROVING A UTILITY SERVICE AGREEMENT TO PROVIDE WATER AND/OR WASTEWATER SERVICES TO THE SPECIFIED TRACTS OF LAND REQUIRING THE SAN ANTONIO WATER SYSTEM'S FINANCIAL PARTICIPATION IN THE DEVELOPMENT OF INFRASTRUCTURE THROUGH OVERSIZING OR IMPACT FEE CREDITS AND/OR ARE LOCATED OUTSIDE THE SAN ANTONIO WATER SYSTEM'S WATER AND/OR WASTEWATER CERTIFICATE OF CONVENIENCE AND NECESSITY (CCN), SUBJECT TO THE EXPIRATION OF SUCH AGREEMENTS IF NOT EXERCISED IN THIRTY-SIX MONTHS; FINDING THE RESOLUTION TO HAVE BEEN CONSIDERED PURSUANT TO THE LAWS GOVERNING OPEN MEETINGS; PROVIDING A SEVERABILITY CLAUSE; AND ESTABLISHING AN EFFECTIVE DATE

WHEREAS, the Developer Customers, specified in the table below, have requested the San Antonio Water System (the “System”) to provide water and/or wastewater service(s), and have satisfied the requirements of the Board's Regulations for Developer Customers Applicant; and

<table>
<thead>
<tr>
<th>No.</th>
<th>Tract Name</th>
<th>Developer</th>
<th>Acres</th>
<th>Water EDUs</th>
<th>Wastewater EDUs</th>
<th>CoSA / CoSA ETJ / Outside</th>
<th>EARZ / CZ</th>
<th>Board Reason</th>
<th>W CCN</th>
<th>WW CCN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yates Property Bulverde RD Tract</td>
<td>John O. Yates Trustee</td>
<td>907.36</td>
<td>2,610</td>
<td>2,320</td>
<td>COSA INSIDE</td>
<td>OVR INSIDE</td>
<td>INSIDE INSIDE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Davita Judson Tract</td>
<td>SAKDC Judson Dialysis, LLC</td>
<td>1.397</td>
<td>16</td>
<td>7</td>
<td>COSA OUTSIDE</td>
<td>CCN INSIDE</td>
<td>OUTSIDE CCN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Fountain Oaks Professional Park Tract</td>
<td>BDDFLT BLD, LLC</td>
<td>0.33</td>
<td>3</td>
<td>2 Hollywood Park</td>
<td>INSIDE CCN</td>
<td>INSIDE OUTSIDE</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total 909.09 2,629 2,329

WHEREAS, the Developer Customer’s provisions to acquire water and/or wastewater services within the System’s jurisdiction is generally illustrated in the attached Project Site Maps; and

WHEREAS, the Developer Customer is obligated to pay the prescribed fees and to comply with other applicable requirements as set forth in the Regulations for Water and/or Wastewater Service; and
WHEREAS, the San Antonio Water System Board of Trustees desires (i) to approve the Utility Service Agreement and to provide water and/or wastewater services to tracts of land requiring the System’s financial participation in the development of infrastructure through oversizing or impact fee credits and/or are located outside the System’s water and/or wastewater Certificate of Convenience and Necessity, and (ii) to provide that the Utility Service Agreement will be honored for a period of thirty-six months, and that if not exercised during this period, the Utility Service Agreements will expire; now, therefore:

BE IT RESOLVED BY THE SAN ANTONIO WATER SYSTEM BOARD OF TRUSTEES:

1. That the System hereby approves the Utility Service Agreement and agrees to provide water and/or wastewater services to tracts of land requiring the System’s financial participation in the development of infrastructure through oversizing or impact fee credits and/or are located outside the System’s water and/or wastewater Certificate of Convenience and Necessity as generally illustrated in the attached Project Site Maps hereto, on a Developer Customer basis as provided for in the Board's Regulations, applicable amendments to the Regulations, and any other applicable federal, state or local regulations.

2. That the Utility Service Agreement shall be honored for a period of thirty-six months, and if not exercised during this thirty-six-month period, the Utility Service Agreement will expire.

3. It is officially found, determined and declared that the meeting at which this resolution is adopted was open to the public, and that public notice of the time, place and subject matter of the public business to be conducted at such meeting, including this resolution, was given to all as required by the Texas Codes Annotated, as amended, Title 5, Chapter 551, Government Code.

4. If any part, section, paragraph, sentence, phrase or word of this resolution is for any reason held to be unconstitutional, illegal, inoperative or invalid, or if any exception to or limitation upon any general provision herein contained is held to be unconstitutional, illegal, invalid or ineffective, the remainder of this resolution shall nevertheless stand effective and valid as if it had been enacted without the portion held to be unconstitutional, illegal, invalid or ineffective.

5. This resolution shall take effect immediately from and after its passage.
PASSED AND APPROVED this 10th day of October, 2017.

Berto Guerra, Jr., Chairman

ATTEST:

Ernesto Arrellano, Jr., Secretary

Attachments:
1. Project Site Maps
Approx. 700-feet 24-inch main (100% Oversized by SAWS)

Approx. 2,900-feet 8-inch main (Oversized to a 24-inch)

Approx. 5,300-feet 12-inch main (Oversized to a 24-inch)

Approx. 1,200-feet 15-inch main (Oversized to a 24-inch)

Approx. 9,000-feet 18-inch main (Oversized to a 24-inch)

24-inch outfall gravity main
TO: San Antonio Water System Board of Trustees

FROM: Sam Mills, P.E., Director, Development, and Andrea L.H. Beymer, P.E., Vice President, Engineering and Construction

THROUGH: Robert R. Puente, President/Chief Executive Officer

SUBJECT: AWARD OF PROFESSIONAL SERVICES CONTRACT IN CONNECTION WITH THE MITCHELL LAKE WETLANDS WATER QUALITY TREATMENT INITIATIVES

Board Action Date: October 10, 2017

SUMMARY AND RECOMMENDATION:

The attached resolution awards a professional services contract to Alan Plummer Associates, Inc., a local, non-SMWVB firm, and authorizes funds in the amount of $1,321,490.00 for the period of October 16, 2017 to December 31, 2020 in connection with Mitchell Lake Wetlands Water Quality Treatment Initiatives.

- The San Antonio Water System (the “System”) owns Mitchell Lake, which is located in south Bexar County, Texas. The lake surface covers approximately 670 acres.

- Mitchell Lake is a nationally significant water body with unique, diverse ecosystems and avian fauna populations. It is one of the very few places on the North American Central Flyway where migrating birds can rest and feed. More than 300 migrant bird species, including the Western Yellow-billed Cuckoo (*Coccyzus americanus*), federally listed as threatened under the Endangered Species Act, and 30 species on the Audubon Watch List for declining populations, have been documented at the lake.

- In addition, Mitchell Lake is an invaluable public resource for environmental education and community stewardship. In 1973, the City of San Antonio (the “City”) designated Mitchell Lake as a refuge for shore birds and water fowl. In 2004, the System entered into an operating agreement with the National Audubon Society establishing the first Audubon Center in Texas.

- Mitchell Lake is a historic remnant of the City’s sewage treatment operations, and was used as a receiving water body for storing raw or partially treated sewage, which would later be used to irrigate crops. In 1901, a dam was constructed on the southern edge of an existing natural wetlands that inundated the natural wetlands and created the current lake surface elevation. Since at least 1962, the lake has been subject to waste discharge permits issued by the State of Texas.
In 1987, discharge of treatment process residuals into the lake ceased. Today, the lake receives some stormwater from its drainage basin, and fully treated recycled water from the nearby Leon Creek Water Recycling Center. Recent residential development in the watershed has increased the amount of stormwater Mitchell Lake receives.

Mitchell Lake is subject to Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0010137004 issued by the Texas Commission on Environmental Quality. The TPDES Permit specifies water quality limits for Total Suspended Solids; Biochemical Oxygen Demand; *E.coli*; pH, and Dissolved Oxygen. The United States Environmental Protection Agency has concurrent jurisdiction of the permit.

Water quality samples are taken at a designated discharge location at the dam spillway. The lake may overflow following significant rain events. Depending on the duration of the rainfall period, a discharge may continue for an extended period of time.

Discharge permit excursions primarily result from algal concentrations in the lake. The algal eutrophication is driven predominately by nutrient concentrations in the water column and potentially in the sediments, along with the shallow condition of the lake. A nutrient source may also be introduced from stormwater originating from nearby residential communities.

The objective of this project is to evaluate and implement one or more natural processes to treat water leaving Mitchell Lake to the water quality limits (excluding bacteria-*E.coli*) defined in the TPDES permit for the Mitchell Lake treatment facility.

This project will be conducted in two major phases. The System, at its sole discretion, will determine if the project advances between the first and second phases, or if additional phases of work are warranted. Further, the role of the consultant in the second phase of the work will be to provide professional services related to the project as determined to be in the best interest of the System, which may include professional services as a design engineer in assisting with design of bid documents for the second phase of work, or as an owner’s representative or other role in connection with an alternative project delivery of the second phase of the project.

The scope of services for Phase 1 of this project include the following:

- Evaluate regulatory issues associated with Mitchell Lake discharges that may be modified to assist in resolution of the challenges facing the current facility or the proposed modifications.
- Evaluate the viability of constructing a wetlands treatment system immediately downstream of the lake to address the water quality limits defined in the existing TPDES permit prior to discharge to the receiving stream (excluding *E.coli*).
o Evaluate whether treatment options within the lake could assist the treatment performance of the constructed wetlands.

o Design, provide construction management, and operate a pilot scale wetlands to demonstrate the water quality treatment performance of a full scale wetlands.

o Evaluate and recommend modifications or improvements to the dam and spillway that will allow for raising and lowering the level of the lake water surface and incrementally providing water from the lake to the proposed constructed wetlands.

o Evaluate the flow rates/hydrology and surface area needed downstream of the lake to meet stormwater management goals and desired treatment levels.

o Explore opportunities for local, state or federal funding for any proposed modifications.

o Explore and identify potential community partnerships with private, public and non-profit sector entities with complimentary projects planned for the vicinity and assist the System in developing a plan to incorporate these community partnerships into the proposed solutions, while exploring any funding or public relations advantages brought by these partnerships.

• Construction of the pilot wetlands will be handled under a separate contract and is not included in the work to be performed by Alan Plummer Associates, Inc.

• Depending on the outcome of the Phase 1 services, the System may consider certain additional Phase 2 services, which may include:

  o Providing certain implementation activities, which could include design, construction management, and commissioning of a full scale wetlands and dam reconstruction.

  o Providing recommendations regarding maintenance and flood event mitigation activities needed for the wetlands system to achieve maximum treatment capabilities after significant rain events.

• Alan Plummer Associates, Inc., will provide Phase 1 services for this project in an amount not to exceed $1,321,490.00 for the period of October 16, 2017 to December 31, 2020.

Staff recommends that the Board approve this resolution.
FINANCIAL IMPACT:

The item/services will be paid from System funds budgeted in the 2017 budget (Company: 1000, Accounting Unit: 5039100, Accounts: 511312, Estimated total 2017 amount: $81,050.00).

The services will be paid from System funds budgeted in the 2018, 2019 and 2020 budgets, pursuant to and contingent upon Board approval of the 2018, 2019, and 2020 budgets with a line item for such expenditures (Company: 1000, Accounting Unit: 5039100, Accounts: 511312, estimated total 2018 amount is $778,276.00, 2019 is $229,297.00 and 2020 is $232,867.00).

The total contract amount will not exceed $1,321,490.00.

SUPPLEMENTARY COMMENTS:

The five firms that provided qualification statements for this project are listed below:

<table>
<thead>
<tr>
<th>NAME OF FIRM</th>
<th>LOCAL/SMWVB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alan Plummer Associates, Inc.*</td>
<td>Local/Non–SMWVB</td>
</tr>
<tr>
<td>GHD Services, Inc.</td>
<td>Non–Local/Non–SMWVB</td>
</tr>
<tr>
<td>Merrick &amp; Company</td>
<td>Local/Non–SMWVB</td>
</tr>
<tr>
<td>RE/SPEC INC dba RESPEC</td>
<td>Local/Non–SMWVB</td>
</tr>
<tr>
<td>TTL Inc. dba TTL/Drash Consultants</td>
<td>Local/Non–SMWVB</td>
</tr>
</tbody>
</table>

*Selected Firm

Alan Plummer Associates, Inc., proposed to use the following subconsultants for services on this contract:

<table>
<thead>
<tr>
<th>NAME OF FIRM</th>
<th>PERCENT OF FEE</th>
<th>LOCAL/SMWVB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams Environmental, Inc.</td>
<td>2.30%</td>
<td>Local/WBE–Caucasian</td>
</tr>
<tr>
<td>Aguillon and Associates, Inc.</td>
<td>4.00%</td>
<td>Local/WBE–Hispanic</td>
</tr>
<tr>
<td>Arias and Associates, Inc.</td>
<td>4.60%</td>
<td>Local/MBE–Hispanic</td>
</tr>
<tr>
<td>Bio-West, Inc.</td>
<td>1.00%</td>
<td>Non–Local/Non–SMWVB</td>
</tr>
<tr>
<td>Freese and Nichols, Inc.</td>
<td>12.30%</td>
<td>Local/Non–SMWVB</td>
</tr>
<tr>
<td>Gupta and Associates, Inc.</td>
<td>3.10%</td>
<td>Local/MBE–Asian</td>
</tr>
<tr>
<td>Prewitt and Associates, Inc.</td>
<td>2.10%</td>
<td>Non–Local/Non–SMWVB</td>
</tr>
<tr>
<td>San Antonio Testing Laboratory, LLC</td>
<td>2.90%</td>
<td>Local/WBE–Hispanic</td>
</tr>
<tr>
<td>Vickrey and Associates, Inc.</td>
<td>12.00%</td>
<td>Local/WBE–Caucasian</td>
</tr>
<tr>
<td>Wetland Solutions, Inc.</td>
<td>3.80%</td>
<td>Non–Local/Non–SMWVB</td>
</tr>
</tbody>
</table>

Additionally, the overall SMWVB analysis is shown in the following table:
Award of Professional Services Contract
Mitchell Lake Wetlands Water Quality Treatment Initiatives

Mitchell Lake Wetlands Water Quality Treatment Initiatives
ALAN PLUMMER ASSOCIATES, INC.

SMWVB ANALYSIS – BOARD AWARD

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SBE</td>
<td>0.00%</td>
</tr>
<tr>
<td>MBE–African American</td>
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</tr>
<tr>
<td>MBE–Asian</td>
<td>3.10%</td>
</tr>
<tr>
<td>MBE–Hispanic</td>
<td>4.60%</td>
</tr>
<tr>
<td>MBE–Other</td>
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<tr>
<td>WBE–Minority</td>
<td>6.90%</td>
</tr>
<tr>
<td>WBE–Non–Minority</td>
<td>14.30%</td>
</tr>
<tr>
<td>SMWVB Total</td>
<td>28.90%</td>
</tr>
</tbody>
</table>

APPROVED:

Sam Mills, P.E.
Director
Development

Andrea L.H. Beymer, P.E.
Vice President
Engineering and Construction

Robert R. Puente
President/Chief Executive Officer
OF THE SAN ANTONIO WATER SYSTEM BOARD OF
TRUSTEES ACCEPTING THE PROPOSAL OF ALAN
PLUMMER ASSOCIATES, INC., IN THE AMOUNT OF
$1,321,490.00 IN CONNECTION WITH THE MITCHELL
LAKE WETLANDS WATER QUALITY TREATMENT
INITIATIVES; AWARDING A PROFESSIONAL SERVICES
CONTRACT TO ALAN PLUMMER ASSOCIATES, INC., IN
THE AMOUNT OF $1,321,490.00 FOR THE PERIOD OF
OCTOBER 16, 2017 THROUGH DECEMBER 31, 2020 FOR
PROJECT ENGINEERING WORK; AUTHORIZING THE
EXPENDITURE OF FUNDS IN THE AMOUNT NOT TO
EXCEED $1,321,490.00, AND THAT SUBSEQUENT YEAR'S
EXPENDITURES ARE PURSUANT TO AND CONTINGENT
UPON BOARD APPROVAL OF THE SUBSEQUENT
YEAR’S BUDGETS WITH A LINE ITEM FOR SUCH
EXPENDITURES; AUTHORIZING THE
PRESIDENT/CHIEF EXECUTIVE OFFICER OR HIS DULY
APPOINTED DESIGNEE TO EXECUTE A PROFESSIONAL
SERVICES CONTRACT WITH ALAN PLUMMER
ASSOCIATES, INC., AN AMOUNT NOT TO EXCEED
$1,321,490.00 FOR PROJECT ENGINEERING WORK;
FINDING THE RESOLUTION TO HAVE BEEN
CONSIDERED PURSUANT TO THE LAWS GOVERNING
OPEN MEETINGS; PROVIDING A SEVERABILITY
CLAUSE; AND ESTABLISHING AN EFFECTIVE DATE

WHEREAS, the San Antonio Water System (the “System”) desires to evaluate and
implement one or more natural processes to treat water leaving Mitchell Lake to the water quality
limits defined in the Texas Pollutant Discharge Elimination System (TPDES) permit for the
Mitchell Lake treatment facility; and

WHEREAS, in support of this project the System desires to engage a professional
service firm to evaluate options, perform pilot work, design, and provide construction phase
services for a series of water quality treatment initiatives in and around Mitchell Lake; and

WHEREAS, this project will be conducted in two major phases and the System, at
its sole discretion, will determine if the project advances between the first and second phases, or
if additional phases of work are warranted; and

WHEREAS, construction of the pilot wetlands will be handled under separate
contract and is not included in the work to be performed by Alan Plummer Associates, Inc.; and
WHEREAS, the System desires to authorize Alan Plummer Associates, Inc., a local, non-SMWVB firm, to conduct professional services for Phase 1 of the Mitchell Lake Wetlands Water Quality Treatment Initiatives; and

WHEREAS, the System desires to authorize the expenditure for professional services to Alan Plummer Associates, Inc., in an amount not to exceed $1,321,490.00, for the Mitchell Lake Wetlands Water Quality Treatment Initiatives; and

WHEREAS, the San Antonio Water System Board of Trustees desires (i) to accept the proposal of Alan Plummer Associates, Inc., in the amount of $1,321,490.00 in connection with Mitchell Lake Wetlands Water Quality Treatment Initiatives, (ii) to award a professional services contract to Alan Plummer Associates, Inc., in the amount of $1,321,490.00 for the period of October 16, 2017 to December 31, 2020 for project engineering work; (iii) to authorize the expenditure of funds in an amount not to exceed $1,321,490.00, and that subsequent year’s expenditures are pursuant to and contingent upon board approval of the subsequent year’s budgets with a line item for such expenditures, and (iv) to authorize the President/Chief Executive Officer or his duly appointed designee to execute a professional services contract with Alan Plummer Associates, Inc., and to pay Alan Plummer Associates, Inc., an amount not to exceed $1,321,490.00 for project engineering work; now, therefore:

BE IT RESOLVED BY THE SAN ANTONIO WATER SYSTEM BOARD OF TRUSTEES:

1. That the proposal of Alan Plummer Associates, Inc., in the amount of $1,321,490.00 in connection with Mitchell Lake Wetlands Water Quality Treatment Initiatives is hereby accepted.

2. That a professional services contract is hereby awarded to Alan Plummer Associates, Inc., in the amount of $1,321,490.00 for the period of October 16, 2017 to December 31, 2020 for project engineering work.

3. That the expenditure of funds in an amount not to exceed $1,321,490.00 is hereby authorized, and that subsequent year’s expenditures are pursuant to and contingent upon board approval of the subsequent year’s budgets with a line item for such expenditures.

4. That the President/Chief Executive Officer or his duly appointed designee is hereby authorized to execute a professional services contract with Alan Plummer Associates, Inc., and to pay Alan Plummer Associates, Inc., an amount not to exceed $1,321,490.00 for project engineering work.

5. It is officially found, determined and declared that the meeting at which this resolution is adopted was open to the public, and the published notice of the time, place, and subject matter of the public business to be conducted at such meeting, including this resolution, was given to all as required by the Texas Codes Annotated, as amended, Title 5, Chapter 551, Government Code.

6. If any part, section, paragraph, sentence, phrase, or word of this resolution is for any reason held to be unconstitutional, illegal, inoperative or invalid, or if any exception to or limitation upon any general provision herein contained is held to be unconstitutional, illegal, invalid or ineffective,
the remainder of this resolution shall nevertheless stand effective and valid as if it had been enacted without the portion held to be unconstitutional, illegal, invalid, or ineffective. This resolution becomes effective immediately upon its passage.

7. This resolution becomes effective immediately upon its passage.

PASSED AND APPROVED this 10th day of October, 2017.

____________________________________
Berto Guerra, Jr., Chairman

ATTEST:

____________________________________
Ernesto Arrellano, Jr., Secretary