



Amend City Code - Proposed Water Service Rate Increase (Ordinance G-6541)

Request the City Council amend sections 37-63 and 37-133 of the Phoenix City Code to adjust water service rates to increase rate revenue by 6.0 percent effective the first bill-day of February 2019, followed by an additional increase of 6.0 percent effective the first bill-day of February 2020.

Summary

The Finance Department, in conjunction with the Water Services Department, develops a Water Financial Plan to determine the revenue requirements that support the capital infrastructure replacement, rehabilitation, and development needs, the operating budget, and the debt service requirements of the water utility. The proposed changes to the water rates planned for February 2019 and February 2020 are estimated to produce \$24.1 million of additional revenue in the first full year and an additional \$25.0 million in the second full year.

The proposed water rate changes for February 2019 will be applied to the fixed monthly service charge, seasonal volume charges, and the environmental charge. On average, customer bills for water will increase 6.0 percent. Depending on the actual water consumption, some customers may pay more or less than this average.

The proposed water rate changes for February 2020 will be applied to fixed monthly service charge, seasonal volume charges, and the environmental charge. On average, customer bills for water will increase 6.0 percent. Depending on the actual water consumption, some customers may pay more or less than this average.

An independent rate consultant has reviewed and evaluated the Water Financial Plan and determined that the financial plan information supports rate adjustments that are reasonable and consistent with rating agency standards (**Attachment A**).

There is no increase to wastewater rates in either 2019 or 2020.

Concurrence/Previous Council Action

The citizens' Water/Wastewater Rate Advisory Committee unanimously recommended that the City Council approve the water rate increases at its Aug. 16, 2018, meeting.

The City Council Water, Wastewater, Infrastructure, and Sustainability Subcommittee heard information on water resources, infrastructure, and financial plans at its Sept. 5, 2018, meeting. The City Council heard a report on water resources, infrastructure, and financial plans at the Oct. 9, 2018, Policy Session (**Attachment B**). The Notice of Intention to consider an increase in water rates and/or rate components and to set a public hearing date to consider the proposed increase was passed unanimously at the Oct. 9, 2018, Policy Session. The public hearing to consider this amendment is on this same agenda.

Public Outreach

In accordance with Arizona Revised Statute 9-511.01, the City Council will conduct a public hearing on Dec. 12, 2018, to receive comments on the proposed increase in water rates. Additional information regarding public outreach efforts is detailed in the Council Report for the public hearing agenda item.

Responsible Department

This item is submitted by Deputy City Manager Karen Peters and the Water Services and Finance departments.



December 3, 2018

Mayor and City Council
City of Phoenix
200 West Washington Street
Phoenix, Arizona 85003

Subject: Water Financial Plan Review

Dear Ladies and Gentlemen:

Raftelis Financial Consultants, Inc. ("Raftelis") was retained as an Independent Rate Consultant ("Consultant") to review and evaluate projected near- and longer-term financial projections as prepared by the City of Phoenix ("City") for the City's Water Department ("Department").

FINANCIAL PLAN

Introduction

The Department's fiscal year (FY) 2019-2023¹ Water System Financial Plan ("Financial Plan") estimates the cash-based costs expected to be incurred during a five-year planning or forecast period, the revenues projected to be received based on existing rates during the period, and additional revenues resulting from forecasted revenue/rate increases to balance costs and revenues and conform with or achieve the financial policies of the Department and the City. The Department prepares a rolling five-year plan – when prepared in subsequent years, the first year in the prior plan is removed and a new year is added. The Department's financial planning process is aligned with the City's budget process; the Mayor and City Council are provided with the Financial Plan information, including forecasted revenue increases, to support the Department's capital improvements and operations, prior to the City Council's review of the Department's budgets.

Financial Inputs and Policies

The Department utilized the following data inputs in developing the FY 2019-2023 Financial Plan:

- Forecasts of projected revenues at existing rates and other revenue sources.
- Forecasts of projected operating requirements.
- Estimated Capital Improvement Program (CIP) outlay.

The Financial Plan developed from these inputs reveals if, and in what years, water sales revenue increases (rate adjustments) are needed to meet the Department's annual cash requirements and to conform to the following financial policies:

- All costs associated with the operation of the Water System shall be funded from revenues derived from water rates and other water-related income sources.
- Annual debt service coverage goal at a minimum level of 2.00 times the annual debt service requirement.

¹ The City's fiscal year is from July 1 to June 30. "FY 2019" refers to the 12 months ending June 30, 2019.

- The Department shall maintain available cash reserves at a minimum level of 1.00 times the annual debt service requirement.

Adherence to these policies helps ensure that the Department has ready access to low cost capital and allows them to respond to unforeseen circumstances in a timely manner. These policies are consistent with rating agencies standards and are comparable to other highly rated water utilities.

The Financial Plan developed from these inputs reveals if, and in what years, water sales revenue increases (i.e., rate adjustments) are required to meet the Department's annual cash requirements and achieve established financial planning/performance policies.

Financial Plan Summary

Table 1 presents the Financial Plan and provides some detail of the revenue and cost estimates. A discussion of the key Financial Plan components follows.

FY 2019 – FY 2023 Revenue Forecast

Potable water sales revenues (i.e., revenues generated from the Metered Water Charge and Environmental Charge) are the largest source of projected operating revenues contained in the Financial Plan. Water sales revenue projections are based on estimated customer accounts and water sales during the five-year planning period.

The Department expects to experience an annual increase in the rate of new accounts connected as the economy continues to grow in Phoenix. Additionally, the Department monitors historical temperature and rainfall patterns in the Phoenix service area that drive future consumption per account forecasts. FY 2018 was unusually hot and dry resulting in higher than normal per account consumption. The Department projects the higher use per account to continue into the FY 2019 summer months (July and August of 2018), and then to fall to more "normal" levels for the balance of FY 2019 and FY 2020. As a result, the average use per account experienced in FY 2018 on an annual basis is projected to decrease by 1.14 percent in FY 2019, decrease another 1.54 percent in FY 2020, and decrease again at an annual average of 0.44 percent from the FY 2021-2023 period. These two factors – growth in the number of new accounts and metered water usage per account – are expected to result in a modest increase in revenue under existing rates of 0.77 percent for FY 2019, a decrease of 1.85 percent in FY 2020, and modest annual increases averaging 0.77 percent in the last three years of the five-year planning period.

Additional water sales revenues will be needed to meet annual operating and maintenance (O&M) expenses and capital costs and to ensure compliance with the Department's financial policies. Revenues are expected to be generated through a series of annual water revenue/rate increases of 6.0 percent in February 2019 and February 2020, followed by 3.5 percent increases in each of the remaining three years (March 2021, March 2022, March 2023).

FY 2019 – FY 2023 Operating Requirements

O&M expenses comprise a significant portion of total Department costs or revenue requirements. Total O&M expenses are projected to increase at an annual average rate of approximately 4.7 percent over the forecast period. Increases in O&M are based on customer growth, the rate of inflation, and individualized projections for major line items including electricity, chemicals, raw water, and granular activated carbon.

Table 1
City of Phoenix Water System
FY 2019-2023 Financial Plan
(millions of dollars)

	2018-19 Forecast	2019-20 Forecast	2020-21 Forecast	2021-22 Forecast	2022-23 Forecast
REVENUES					
Metered Water Charge	\$ 340.00	\$ 333.56	\$ 336.37	\$ 338.64	\$ 340.46
Environmental Charge	34.36	33.91	34.33	34.76	35.20
Raw Water Charge	26.66	26.13	26.46	26.79	27.12
Rate Revenue	401.02	393.60	397.16	400.19	402.78
Rate Revenue Adjustments	9.28	33.27	54.40	70.74	87.79
Total Rate Revenue	410.30	426.87	451.56	470.93	490.57
Water Resource Acquisition Fee	2.33	2.26	2.18	2.19	2.19
Development Occupation Fee	4.12	4.12	4.09	4.11	4.14
Other Revenue	27.89	26.94	29.38	27.86	28.44
TOTAL OPERATING REVENUE	444.64	460.19	487.21	505.08	525.34
EXPENDITURES					
Operating & Maintenance	214.49	221.73	230.86	238.36	245.76
Operating Capital (PAYGO)	90.32	113.58	81.70	103.72	83.63
Other Expenses and Transfers	24.29	25.46	26.48	27.79	28.80
Total Operating Expenses	329.10	360.77	339.04	369.87	358.19
Debt Service - Existing	113.20	120.57	113.63	113.64	113.64
Debt Service - Commercial Paper	2.00	5.00	-	3.75	8.00
Debt Service - Future \$ 600 m	-	-	27.00	27.00	27.00
Total Debt Service	115.20	125.57	140.63	144.39	148.64
Net Transfers to/(from) Capital Funds	-	-	-	-	-
TOTAL EXPENDITURES	444.30	486.34	479.67	514.26	506.83
Net Increase/(Decrease)	0.34	(26.15)	7.54	(9.18)	18.51
BEGINNING FUND BALANCE	92.77	93.11	66.96	74.50	65.32
ENDING FUND BALANCE	93.11	66.96	74.50	65.32	83.83
Less: Restricted Funds					
Development Occupation Fund	19.89	19.24	20.48	21.91	25.00
Water Resource Acquisition Fund	23.67	11.76	13.40	12.34	14.44
Total Restricted Funds	43.56	31.00	33.88	34.25	39.44
OPERATING FUND BALANCE	49.55	35.96	40.62	31.07	44.39
Add: Water Reserve Fund	100.00	100.00	100.00	100.00	100.00
AVAILABLE FUND BALANCE	\$ 149.55	\$ 135.96	\$ 140.62	\$ 131.07	\$ 144.39
Month of Projected Increase	Feb	Feb	Mar	Mar	Mar
Percent Revenue Impact	6.00%	6.00%	3.50%	3.50%	3.50%
Junior Lien Debt Coverage	2.04	2.10	1.82	1.90	1.99
Available Fund Balance to Debt Service	1.3	1.1	1.0	0.9	1.0

FY 2019 – FY 2023 Capital Requirements

The Department's FY 2019-2023 CIP is largely focused on rehabilitation of the various components of the water system. The FY 2019-2023 CIP ("Uses") along with proposed funding ("Sources") is shown in Table 2.

Table 2
City of Phoenix Water System
Capital Improvement Program Summary
FY 2019-2023
(millions of dollars)

	2018-19	2019-20	2020-21	2021-22	2022-23	Total
	Forecast	Forecast	Forecast	Forecast	Forecast	
Uses of Funds						
Pipelines	\$ 104.75	\$ 117.86	\$ 89.41	\$ 114.23	\$ 98.59	\$ 524.84
Pumps	37.72	32.40	35.98	13.44	35.62	155.15
Resiliency	81.37	57.08	298.62	20.60	34.80	492.48
Treatment	43.55	34.83	18.36	40.52	46.69	183.95
Water Storage	6.03	14.71	11.52	12.98	7.62	52.85
Other	28.31	43.51	7.54	17.82	6.50	103.68
Total Uses	<u>\$ 301.73</u>	<u>\$ 300.39</u>	<u>\$ 461.43</u>	<u>\$ 219.59</u>	<u>\$ 229.82</u>	<u>\$1,512.95</u>
Sources of Funds						
Water Resource Acquisition Fee	\$ 0.01	\$ 14.17	\$ 0.54	\$ 3.25	\$ 0.10	\$ 18.06
Water Revenue	82.89	92.16	75.34	95.12	79.25	424.77
Water Maintenance and Operation	0.44	-	-	-	-	0.44
Development Occupation Fee	4.40	4.77	2.85	2.67	1.05	15.73
Mesa Participation	2.58	2.48	2.98	2.68	3.24	13.94
CIC - Water Bonds	211.42	186.82	379.73	115.87	146.18	1,040.01
Total Sources	<u>\$ 301.74</u>	<u>\$ 300.40</u>	<u>\$ 461.44</u>	<u>\$ 219.59</u>	<u>\$ 229.82</u>	<u>\$1,512.95</u>

As shown in the Uses and Sources Table 2, the Department anticipates using the proceeds from revenue bonds (CIC – Bonds) to fund most of its CIP over the forecast period with the next largest funding source being annual rate revenues. Given the magnitude of the CIP, this approach of funding ongoing repair, replacement and rehabilitation of existing assets with revenue bonds is consistent with industry best practices, i.e., the use of debt to fund longer lived, large dollar amount, capital projects.

Principal Assumptions and Considerations

The Financial Plan projections represent an assessment by the Department of projected operating results for the period FY 2019 to FY 2023. Raftelis has reviewed the projections at a summary level and we believe that these projected operating results are reasonable for the Department's financial planning purposes. The Department's revision of the Financial Plan in the future may result in changes to its projected operating results. We cannot predict what changes, if any, will be made or what impact these changes may have on the Department's projected operating results.

In analyzing the Financial Plan, Raftelis relied on certain assumptions related to future Water System conditions. There will usually be differences between assumed and actual conditions because events and circumstances frequently do not occur as expected, and those differences may be significant. The Department's principal assumptions as used in the Financial Plan are:

- The number of customer accounts will increase by approximately 0.75 percent in FY 2019, 1.00 percent in FY 2020, followed by approximately 1.25 percent annual increases over the next three years.
- Water consumption per account is expected to decrease at an annual rate of 1.14 percent in FY 2019 and 1.54 in FY 2020. Per account water consumption increased significantly in FY 2018 due to unusually high temperatures and low rainfall, however the Department expects consumption to return to more typical levels by FY 2020. Water consumption per account is projected to decrease at an average annual rate of 0.44 percent the remaining three years, FY 2021 through FY 2023. Projections of water consumption per account are based on average weather conditions. Actual water sales are subject to significant year-to-year variations due to fluctuations in weather conditions and will likely vary from the projections in the Financial Plan.
- Water sales under existing rate projections, which consider both the number of customer accounts and the consumption per account, are projected to increase by approximately 0.77 percent in FY 2019 and decrease by 1.85 percent in FY 2020. Water sales in the remaining years of the forecast are projected to increase at a rate of approximately 0.77 percent annually.
- Future O&M expenses are projected to change annually based on the rate of inflation and customer growth, as well as new recurring programs or initiatives. Future year costs, apart from treatment costs and costs associated with implementation of new treatment processes, which are forecasted separately, include an inflation adjustment of 4.0 percent annually. Overall, O&M expenses are projected to increase at an annual average rate of approximately 4.7 percent.
- The CIP prepared by the Department is expected to meet current environmental standards and projected customer growth requirements over the study period. Costs associated with any possible changes in current EPA drinking water standards cannot be estimated until the new standard levels are established.
- Interest rates and issuance costs of future debt are expected to be comparable with current market conditions and credit rating.
- It is expected that the Mayor and City Council will continue to have full control over the establishment of rates for water service and will adjust rates as necessary to meet the financial needs of the Department, including compliance with the Department's financial policies.

Reliance on Department Data

The purpose of this letter is to provide the City with an independent review of the Department-prepared Financial Plan. To accomplish these objectives, Raftelis did not conduct an independent financial audit or an in-depth evaluation of the Department's operations or financial planning initiatives or processes.

During this project the Department provided Raftelis with a variety of data and information relevant to the Water System. We have relied on this data and information in completing our review of the Department-prepared Financial Plan. However, we have not independently verified the data and information as provided and, accordingly, take no responsibility for its accuracy. Furthermore, during our review and analysis, and the preparation of this letter, nothing has come to our attention that would cause us to believe that the assumptions used by the Department are unreasonable. Nevertheless, there will usually be differences between forecasted and actual results, because events and circumstances frequently do not occur as expected and those differences may be material. Changed conditions that occur or become evident after the date of this letter could affect the analysis presented. As such, we have no responsibility to update this letter for events and circumstances occurring after the date of this letter.

Conclusions

Based on our review of the Department's Financial Plan and the considerations and assumptions set forth herein, Raftelis offers the following opinions:

- The Department's Financial Plan, calling for annual revenue increases of 6.0 percent in February 2019 and February 2020, followed by subsequent annual increases of 3.5 percent in March 2021, March 2022, and March 2023, is expected to provide the funding necessary to meet O&M expenses, implement the CIP as currently proposed and generally meet the Department's financial goals, targets and policies. In our professional opinion, the proposed rate increases are reasonable for the estimated rate revenue required. To the extent that each of the rate adjustments anticipated in the Financial Plan are not approved, it is likely that revenues will not be sufficient to cover the Department's O&M expenses and the Department will be required to draw on available cash reserves, likely depleting these reserves to levels below those established by the Department's financial policies. Doing so could severely limit the Department's ability to respond to unforeseen problems and, more importantly, could lead to a downgrade in the credit rating of the Department's debt, thereby increasing, in the future, the Department's cost of capital.
- The Department has developed several financial policies relating to the funding of the Water System and outstanding debt. Adherence to these policies helps ensure that the Department has ready access to capital at a reasonable cost and allows the Department to respond to unforeseen circumstances in a timely manner. These policies are consistent with rating agencies standards and are comparable to other highly-rated water utilities.
- In certain years of the Financial Plan the financial targets are not met; however, in years subsequent they trend back towards the target. For instance, in FY 2021 the annual debt service coverage falls to 1.82, but trends up in subsequent years towards the 2.00 target, reaching 1.99 by FY 2023. Similarly, the available cash reserves fall below the 1.0 target to 0.9 in FY 2022 but rebound to 1.0 in FY 2023. These financial policies are self-imposed and therefore it is acceptable to fall below targets in a given year assuming that they trend back towards the targets in subsequent years.

Raftelis appreciates the opportunity to assist the City with this matter. If you have questions regarding the contents of this letter or if you require additional information, please contact me at (303) 305-1136.

Sincerely,
RAFTELIS



Richard D. Giardina
Executive Vice President

City Council Policy Session



City of Phoenix

City Council Report

Agenda Date: 10/9/2018, Item No. 1

Water Resources, Infrastructure and Financial Plans

This report provides the City Council with an update on the Water Services Department's plans regarding Colorado River issues. Additionally, it addresses rehabilitation of aging infrastructure, as well as the impact of these costs on the community water system's financial plan, the need to invest in our future water needs and rebuild our core infrastructure led the Citizen Water Rate Advisory Committee to recommend a 6 percent water rate increase in each of the next two years.

THIS ITEM IS FOR INFORMATION AND DISCUSSION.Investing In Our Future

The Colorado River is over-allocated. The Lower Basin states of Arizona, California, and Nevada, as well as the Republic of Mexico take more water out of Lake Mead than is returned to the system, creating a structural deficit. This structural deficit causes water levels in Lake Mead to decline over time. To make matters worse, the Colorado River basin has been experiencing an extended drought since the year 2000. Water levels in Lake Mead are currently at historic lows.

The most recent Bureau of Reclamation projections show a 57 percent chance of shortage in 2020, rising to a 70 percent chance by 2022, and a 14 percent chance that Lake Mead will fall below elevation 1,025 feet, the third tier of shortage, by 2023. Most alarmingly, the Bureau of Reclamation recently presented a chart that shows Lake Mead could hit 985 feet in elevation within four years. Elevation 985 feet constitutes deadpool in Lake Mead; below this elevation water cannot be released from the dam (**Attachment A**).

Phoenix and the metro region have taken several actions over many decades to prepare for these conditions, recognizing central Arizona's priority on the river system is the lowest and water delivered through the Central Arizona Project canal is first to be cut under shortage declarations. Millions of acre-feet of Colorado River water have been banked in central Arizona aquifers to mitigate the impact of shortages.

Wastewater is reclaimed and extensively reused throughout the Valley of the Sun. We have tied the availability of adequate water supplies to the ability to subdivide land and grow, so that growth does not outstrip supplies. Phoenix has acquired a physically and

legally diverse set of water supplies so that we have a bank of water to rely on in times of shortage. We have proactively protected our local aquifers so that groundwater are available during surface water shortages.

Nonetheless, conditions are worsening and the Colorado River basin appears to be "aridifying". Because the Colorado River is over-allocated, and snowpack has diminished, shortage appears to be inevitable. Phoenix has planned methodically for shortage on the Colorado River and can withstand even tier three shortage declarations by the Secretary of the Interior at Lake Mead elevation 1,025 feet.

However, Lake Mead is shaped like a "V", and once water levels begin to fall they can continue to fall at a non-linear rate. Given no drastic solution to the problem of over-allocation, and assuming snowpack continues to be paltry, it is possible that Lake Mead elevations will fall below elevation 1,025 feet in the next few years. Below this level the Law of the River is unclear and we enter uncharted territory. The uncertainty that could result from extreme Colorado River shortages has the potential to hamper economic opportunity in our region and impact property values. The responsibility of Phoenix Water is to counter this uncertainty, and ensure provision of safe, reliable water supplies in all foreseeable circumstances for public health, economic opportunity, and quality of life.

The good news is that underneath Phoenix is a vast alluvial aquifer containing trillions of gallons of fossil groundwater supplies and millions of acre-feet of Colorado River water previously banked underground that, if managed wisely, can be used to meet demands for generations to come. However, in its decision 40 years ago to fully convert to a renewable surface water supply system to save groundwater supplies for the future, Phoenix Water for the most part abandoned its well fields, and our ability to physically access this banked water and groundwater is extremely limited. The Phoenix Water distribution system is designed to meet demands based on continued surface water availability. Because of this, portions of our distribution system are vulnerable to extreme shortages on the Colorado River.

When it comes to water conservation, Phoenix plays the long game. We want our customers to use water wisely as a lifestyle choice in the desert, regardless of conditions on our watershed from year to year. Phoenix Water has developed a culture of wise water use through education and outreach, and structured water rates to clearly signal the scarcity of water in the desert, giving residents a direct economic incentive to conserve our most precious resource. As a community, we use water far more efficiently than we did several years ago; Phoenix's water consumption rates have fallen approximately 30 percent in the last 20 years. However with shortage on the Colorado River looming, we must ask our customers to conserve more. We are

developing a new, multi-pronged conservation effort that will include, for example, additional retrofits of interior plumbing to more efficient fixtures, enhanced social media, free business and HOA water audits, a self-audit tool, and enhanced print, billboard, bus, light rail wraps, and other outreach media. We will emphasize providing residents with the tools they need to save money, conserve water, and play a role in positive solutions.

Phoenix has long practiced integrated supply and demand management planning; conservation is the bedrock of our water resource planning. However, ensuring reliable water deliveries under extreme Colorado River shortages will require both conservation and infrastructure. This is because even if customers use less water in other portions of our service territory, we cannot physically pump the conserved water to these vulnerable areas. This is a problem with the hydraulics of our distribution system that can only be resolved with new pump stations, transmission mains, and pressure-reducing valves. Nor can we move water appurtenant to lands within the Salt River Valley Water Users' Association (SRV) to lands outside of the district. This is a matter of state and federal law.

To rectify this situation, prepare for deep shortage conditions on the Colorado River, and ensure reliable water deliveries under all foreseeable scenarios, Phoenix Water is focused on improving its physical access to water banked underground and groundwater. To this end, Phoenix has entered into a series of agreements. The first was the exchange agreement with the City of Tucson. Through this agreement, Phoenix banks Colorado River water in Tucson aquifers, and can call upon that water during future times of shortage. Tucson recovers Phoenix's banked water, delivers it to Tucson Water customers, and in exchange directs the Central Arizona Water Conservation District to deliver Tucson's Colorado River water to Phoenix's surface water treatment plants. Last November, Phoenix entered into a similar agreement with the City of Avondale. These agreements provide Phoenix with additional physical access to banked water during shortage, but these exchanges work only so long as Tucson and Avondale have access to Municipal & Industrial priority Colorado River water delivered through the Central Arizona Project canal. That is, these exchanges work well during moderate but not extreme shortages.

Most recently, Phoenix entered into an agreement with Salt River Project (SRP) that provides Phoenix physical access to banked water even during extreme shortage conditions. Phoenix Water purchased a right-of-first-refusal to SRP's well pumping capacity. Phoenix can direct SRP to pump up to 20,000 acre-feet per year of banked water on Phoenix's behalf. That banked water gets pumped out of SRP wells and into the SRP canal system, where it can then be delivered to the 24th Street and Deer Valley Water Treatment Plants. From there, the water would need to be pumped to the

portions of the Phoenix Water distribution system normally served from the Union Hills Water Treatment Plant with Colorado River water. To do so, we will need to build additional transmission mains, pump stations, and pressure-reducing valves. These mains, pumps, and pressure-reducing valves will cost approximately \$300 million. Design of these improvements is slated to begin in January 2019, and construction is expected to be completed at the end of 2023. It may be possible to achieve completion earlier if necessary.

In addition, Phoenix Water is drilling wells to provide improved physical access to banked water and groundwater in portions of our service territory normally served with Colorado River water. We are in the process of designing, constructing, and equipping 15 new wells for that purpose. These wells should be in place by the end of 2022, at a cost of approximately \$110 million. We will also continue to recharge as much water as possible to ensure that we have a large store of banked water that we can draw upon for many years. The cost of recharging water and other related resiliency efforts constitutes an additional \$75 million over the next five years. All told, Phoenix can expect to expend nearly \$500 million over the next five years to ensure reliable water deliveries in the face of shortage on the Colorado River. This compares favorably with the \$1.5 billion that Southern Nevada Water Authority spent to lower its Lake Mead intake as mitigation against falling Lake Mead water levels, funding for which resulted in a 19 percent rate increase for its customers.

Water is the foundation of public health, economic opportunity, and quality of life in our desert city. Continued economic investment and the stability of our regional economy depend very closely on our ability to ensure absolute certainty in the delivery of clean, safe water. With these infrastructure improvements in place, a continued focus on our culture of conservation, and sustained investment in sound aquifer management, Phoenix Water can provide certainty even under worst-case scenarios on the Colorado River and for generations to come.

Building Our Core Infrastructure

The City of Phoenix water system is one of the largest in the nation. It is composed of five surface water treatment plants, 107 pump stations, 22 active wells, 48 reservoirs and storage facilities, 53,000 hydrants, 160,000 valves, approximately 430,000 service lines, and nearly 7,000 miles of pipelines, all of which are used to serve around 1.6 million customers with safe, clean reliable water at the tap twenty-four hours a day and 365 days a year over 540 square miles. People often think of Phoenix as a young city, but the City's water utility has been in operation for more than 110 years, and this infrastructure is aging.

Pipeline rehabilitation and replacement is the largest single infrastructure cost in the

City's water utility. Over the next five years, Phoenix Water anticipates spending approximately \$525 million on pipelines. In addition to this, Phoenix Water anticipates spending approximately \$185 million on surface water treatment plants, \$145 million on water pump stations and pressure-reducing valves, around \$55 million on reservoirs and other water storage facilities, and \$105 million on other system needs, such as power redundancy, security, telemetry, and technology upgrades. Infrastructure rehabilitation, replacement, and improvements are necessary to ensure the delivery of safe, clean, reliable water supplies to our community.

Community Water System Financial Strategy

The Phoenix City Council acts as steward for the community water system. Each year, the Water Services and Finance Departments develop a rolling five-year financial plan for the water utility to ensure continued financial viability. The financial plan is the basis for forecasting necessary rate adjustments that provide revenue to recover the cost of operating a safe and reliable system, maintain high-quality bond ratings, develop the infrastructure necessary to respond to shortages on the Colorado River, respond to outside market cost increases for raw water, chemicals, and infrastructure materials, and ensure system reliability through rehabilitation and replacement of aging infrastructure. Revenues and costs are balanced over a five-year financial plan to avoid large swings in water utility rates, affording our customers and businesses a level of certainty for budget planning and business investment.

The City's water utility does not operate for profit. Rather, the goal of rate adjustments is to earn sufficient revenue to cover the cost of debt service, operations, and required rehabilitation, replacement, and development of capital infrastructure while allowing the utility to end each fiscal year with a cash fund balance large enough to pay for unforeseen needs, and to maintain ratings that keep borrowing costs low.

The five-year financial plan is updated by the Finance and Water Services Departments each year. The need for capital infrastructure rehabilitation, replacement, and development is re-evaluated and re-prioritized. Operating expenses and revenues are updated and re-projected. Necessary rates are then calculated over the five-year time frame to ensure adequate revenues and ending fund balances. The resulting plan is presented to the City Council, the steward of the community water system, when rate adjustments are necessary.

Over the next five years, approximately \$1.515 billion in infrastructure improvements are necessary to continue the provision of safe, clean, reliable water to Phoenix customers. Of this, approximately \$500 million is necessary to develop the infrastructure and other improvements that will ensure Phoenix can continue reliable water deliveries even in worst-case shortage scenarios on the Colorado River. \$525

million is needed for rehabilitation and replacement of aging water pipelines. Approximately \$185 million is necessary for surface water treatment plant rehabilitation, nearly \$145 million for aging pump stations and pressure-reducing valves, \$55 million for aging reservoirs, and another \$105 million on various projects including power redundancy, homeland security, and telemetry improvements.

Water/Wastewater Rate Advisory Committee

The water financial plan indicates that a rate adjustment of six percent is required in February 2019, and a future rate adjustment of six percent in February 2020 is necessary to support the capital, operational, and financial requirements of the water system. These rate adjustments are necessary to maintain the target level for fund balances and ensure there are adequate net revenues to support debt service, which are essential in maintaining bond ratings. The wastewater financial plan indicates that rate adjustments are not necessary at this time.

If water rates are not raised, the water utility must drastically shrink infrastructure investment to avoid depleting fund balances. This could put the operational reliability of the utility at risk, and the City would not be able to guarantee water deliveries in certain portions of its service territory during deep shortage conditions on the Colorado River. Further, not maintaining infrastructure, adequate revenues, and fund reserves could lead to a downgrade in bond ratings.

At its Aug. 16, 2018, meeting, the Water/Wastewater Rate Advisory Committee voted unanimously to recommend to the City Council that water rates be raised by six percent in the spring of 2019 and by another six percent in the spring of 2020. The Water Services Department plans to ask the Phoenix City Council to adopt a notice of intent to increase water rates at the Oct. 9, 2018, City Council Policy session, and will seek public input through a variety of opportunities during the months of October and November 2018. A final vote by Phoenix City Council is planned for December 2018. If these votes are positive, new rates would take effect beginning in February 2019.

Affordability

Phoenix water rates are among the lowest in the nation and will continue to be among the lowest even with the proposed rate increase in place (**Attachment B**). The Citizens' Water/Wastewater Rate Advisory Committee completed a study on the affordability of Phoenix water and sewer rates in the spring of 2018, and concluded rates can be increased while still maintaining acceptable levels of affordability in the community. Phoenix water and sewer rates rank among the most affordable among the 25 largest cities in the U.S. by the AR20 (Affordability Ratio at the 20th income percentile) measure of affordability and by the Hours at Minimum Wage measure of affordability (**Attachment C**).

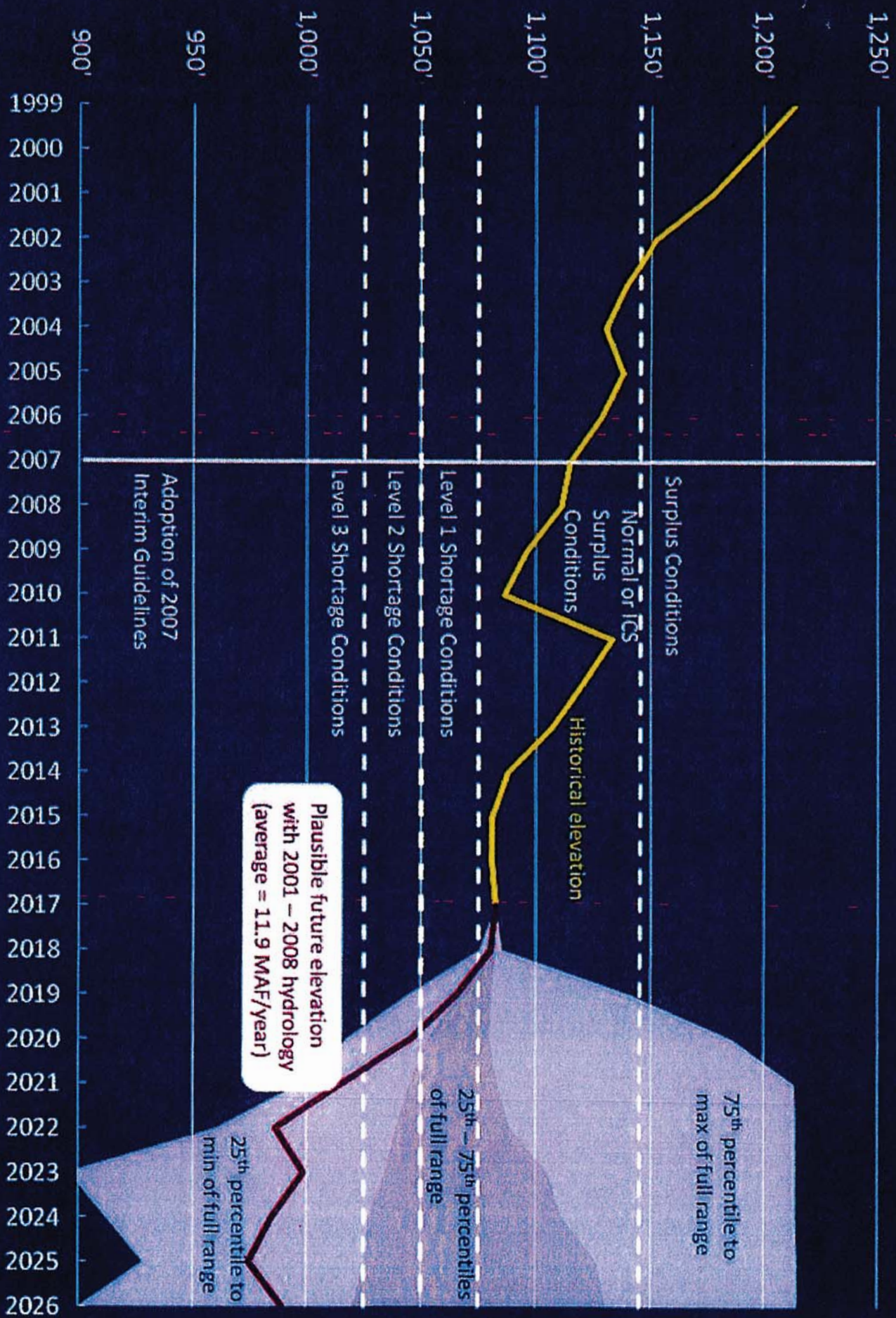
Concurrence/Previous Council Action

The City Council Water, Wastewater, Infrastructure, and Sustainability Subcommittee heard this item at its Sept. 5, 2018 meeting. The City Council will hear a Notice of Intention to consider an increase in water rates and/or rate components and set a public hearing date to consider the proposed increased on this same agenda.

Responsible Department

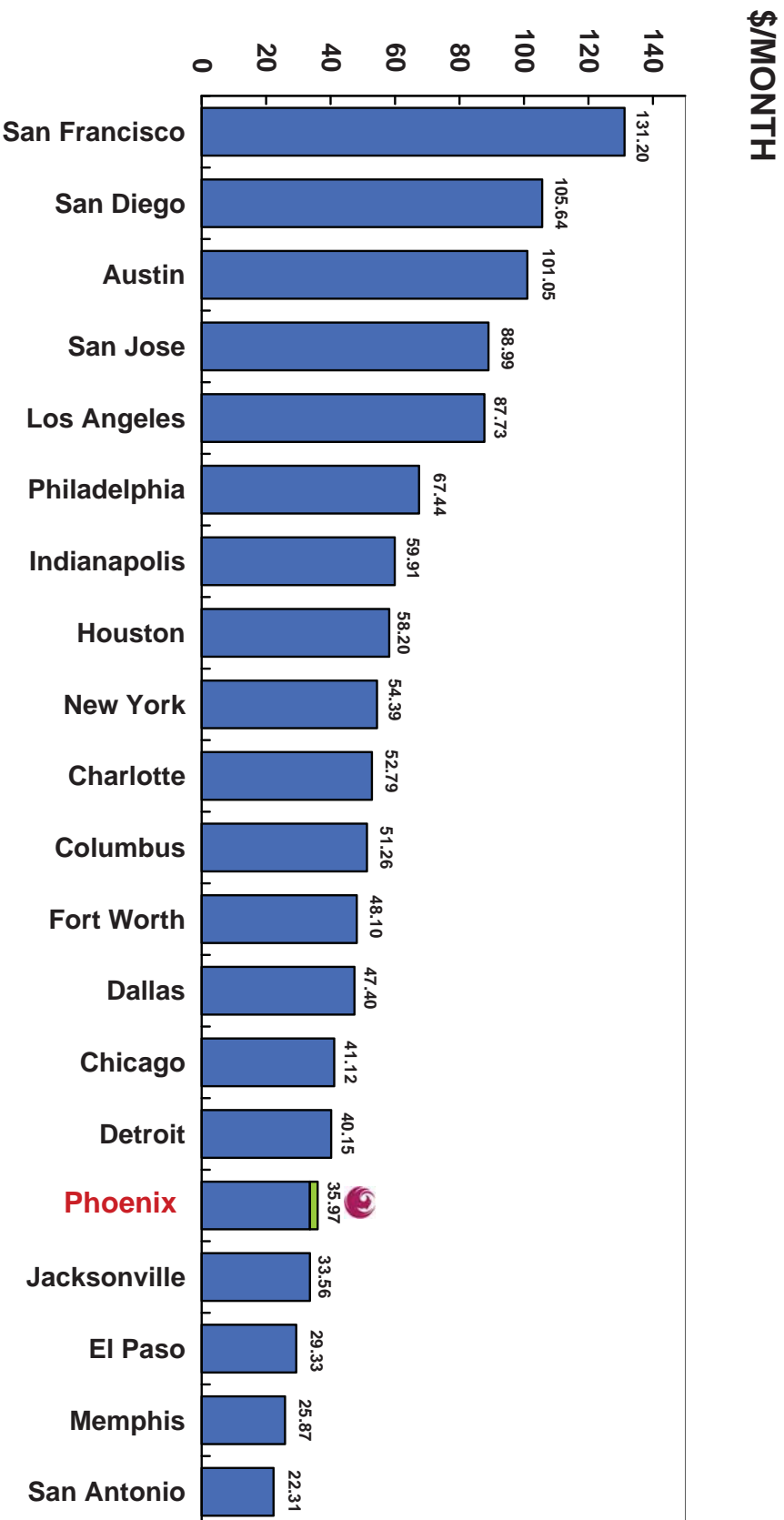
This item is submitted by City Manager Ed Zuercher, Deputy City Manager Karen Peters and the Water Services Director and Chief Financial Officer.

Historical and Plausible Future Lake Mead End-of-December Elevation



Attachment B

SINGLE FAMILY WATER RATE COMPARISON OF MONTHLY BILLS TWENTY LARGEST U.S. CITIES



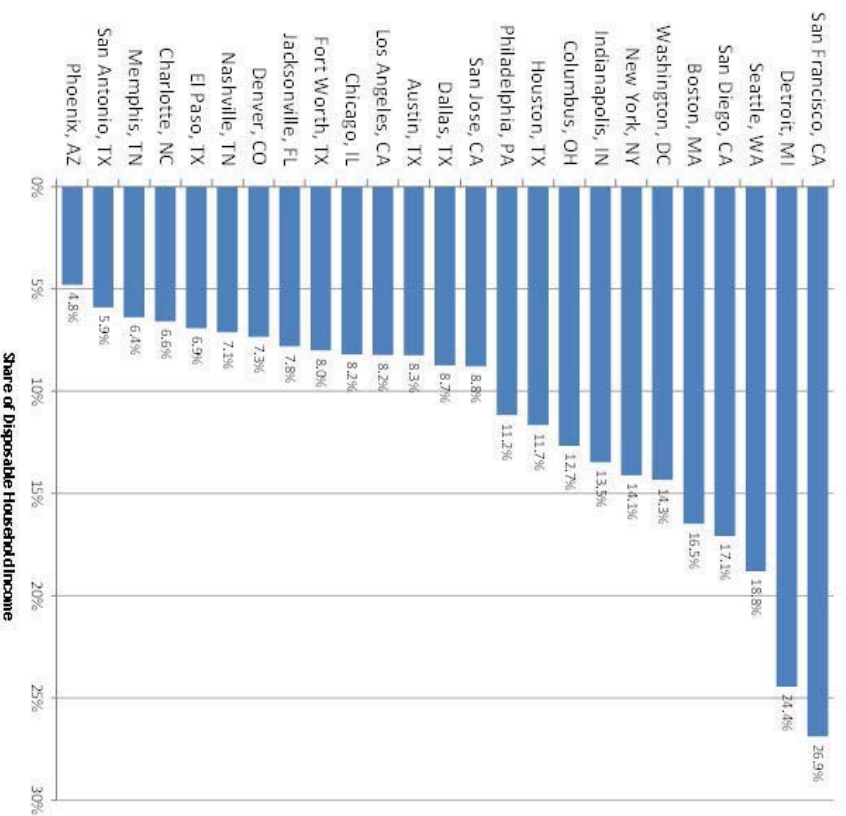
Single family residential customer with a 5/8" meter using a monthly average over a 12 month period of 13.95 ccf and rates in place July 2018. Philadelphia bill based on rate increase approved for September 2018. San Antonio bill based on rate increase approved for 2019.

Attachment C

Affordability in Largest 25 U.S. Cities in 2017

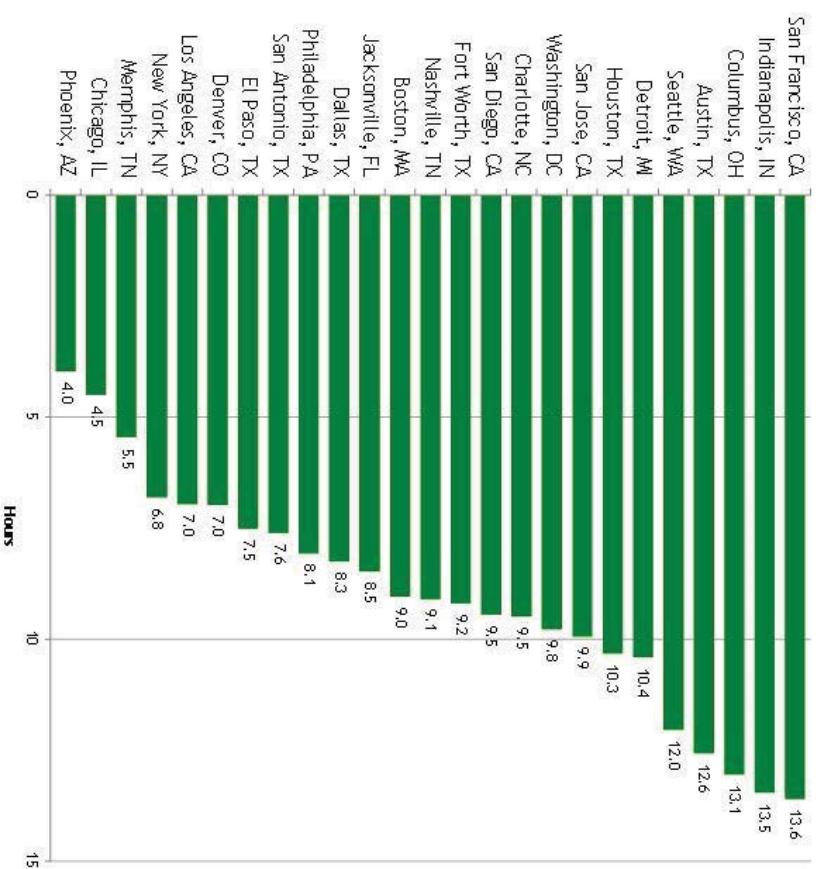
Affordability Ratio at the 20th Income Percentile (AR₂₀)

2017 basic water & sewer cost for family of four as share of disposable income



Monthly Basic Water & Sewer Cost as Hours at Minimum Wage

2017 rates, family of four at 50 gpcc



City Council Policy Session



City of Phoenix

City Council Report

Agenda Date: 10/9/2018, Item No. 2

Notice of Intention To Consider An Increase In Water Rates and/or Rate Components and Set a Public Hearing Date To Consider the Proposed Increase

In accordance with Arizona Revised Statutes, section 9-511.01, request the City Council adopt this notice of intention to consider an increase of 6 percent in each of the next two years in water rates and/or rate components and set a date for a public hearing to consider the proposed increase.

THIS ITEM IS FOR DISCUSSION AND POSSIBLE ACTION.

Summary

In accordance with Arizona Revised Statutes, section 9-511.01, the City Council announces its intention to consider increases in water rates and/or rate components for future years and set a date for a public hearing to consider the proposed increases.

Rate adjustments are identified in the Water Financial Plan as necessary to generate revenue required to invest in our future by developing infrastructure and water supplies necessary to prepare for declared shortages on the Colorado River; rebuild our core infrastructure through repair, rehabilitation, or replacement aging infrastructure, particularly pipelines; and maintain an adequate fund balance to retain a AAA bond rating. The proposal would increase water rates effective in February 2019, and would result in an annual rate revenue increase of 6 percent, with a second increase to take effect in February 2020, that would result in a second annual rate revenue increase of 6 percent.

The water rate adjustments will apply to all water service customers served by the City of Phoenix. No adjustment in wastewater rates will be considered at this time.

The City Council sets Dec. 12, 2018, at 2:30 p.m. in the City Council Chambers, 200 W. Jefferson St., as the time and place for the public hearing to receive public comment on the water rate adjustment proposal. The City Council may act to adopt the proposed adjusted water rates and rate components following the hearing.

Information detailing the proposed adjustments to the water rates and rate components, Financial Plans, and the Five-Year Water Capital Improvement Program

will be available to the public at least 30 days in advance of the public hearing in the City of Phoenix Clerk Department, located at 200 W. Washington St., 15th floor, during normal business hours. The information will also be available 30 days in advance of the public hearing on the City of Phoenix website:
<http://phoenix.gov/citygovernment/codes/notices/index.html>.

Concurrence/Previous Council Action

The citizens' Water/Wastewater Rate Advisory Committee unanimously recommended that City Council approve the water rate increases at its August 16, 2018 meeting. The City Council Water, Wastewater, Infrastructure, and Sustainability Subcommittee heard information on water resources, infrastructure and financial plans at its Sept. 5, 2018 meeting. The City Council will hear a report on water resources, infrastructure and financial plans on this same agenda.

Public Outreach

The Water Services Department plans to conduct public outreach through open houses, community meetings, a mailed post card to all customers, social media, and online outreach in the months of October and November 2018.

Responsible Department

This item is submitted by Deputy City Manager Karen Peters and the Water Services and Finance departments.