C I T Y O F B O U L D E R
WATER RESOURCES ADVISORY BOARD
INFORMATION ITEM

MEETING DATE: June 20, 2016

AGENDA TITLE: Information Item – Update on Rate Study and Background for July 2016 WRAB Discussion

PRESENTER/S:
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Ken Baird, Utilities Financial Manager
Eric M. Ameigh, Public Works Project Coordinator

I. PURPOSE

The purpose of this memo is to provide the board with information relevant to its upcoming July 2016 meeting on the Utility Rate Study. The July meeting will focus on the findings from the first phase of the Rate Study and staff will seek WRAB feedback on potential directions for updating the rate structures in the water, wastewater, and stormwater/flood management utilities.

II. BACKGROUND

In late 2014, Utilities Division staff met with customers to better understand the impacts of utility rate increases approved by council in fall 2014. Many customers indicated they did not understand utility rate structures and/or had questions and concerns about the calculation of the charges on their utility bills.

The Utilities Division periodically reviews its rate setting methodology to assure that utility rates are meeting community goals and are aligned with fee-based principles. These findings led staff to propose an evaluation of the rate structure and associated calculations for water, wastewater, and stormwater/flood management utilities as part of the 2015 work plan. As a first step, a public engagement process was implemented to solicit broader feedback across all customer classes. The initial public engagement process took place in April and May 2015 and consisted of three open houses and an online survey. More than 26,000 postcards were mailed to utilities customers to notify them about the engagement opportunities.

In June 2015, staff presented to WRAB the results of the public engagement process, as well as options for the Utility Rate Study's guiding principles and its areas of study. Guiding principles are high-level goals and speak to what the rate structures should be designed to accomplish. The public engagement process did not indicate a strong need or desire to change the five existing guiding principles for the water rate structure. WRAB recommended that the guiding principles should apply not only to water but also to the other two utilities. In addition, it was determined that the stormwater/flood management utility should have a guiding principle specifically encouraging development that minimizes stormwater impacts. These discussions resulted in

recommended guiding principles and their application across the three utilities, as shown in the following table.

Principle	Water Utility	Wastewater Utility	Stormwater/Flood Management Utility
Discourage wasteful use, while promoting all justified types and amounts of use.	**X**		
Be effective in yielding total revenue requirements.	**X**	**X**	**X**
Provide revenue stability and predictability for the utilities.	**X**	**X**	**X**
Fairly allocate the total cost of service across customer classes to attain equity.	**X**	**X**	**X**
Be dynamic and proactive to address changing supply and demand conditions, as well as the city's sustainability and resilience goals.	**X**		
Encourage low-impact development to decrease stormwater impacts.			**X**

Based on WRAB feedback and guidance related to guiding principles and areas of study, staff developed a scope of work for the analysis phase of the project. The scope of work informed a request for consultant proposals (RFP) which was issued in early November 2015. Staff received four complete proposals and selected Denver-based Raftelis Financial Consultants (RFC) to assist with the project.

The project is roughly divided into three phases, as follows:

Phase 1 – Investigation and Assessment (February – June)
RFC will assist the staff in comprehensively understanding what is happening within the rate structures and the pros and cons of the current systems. The consultant team and staff will present these preliminary findings to WRAB at the July meeting. WRAB's feedback will help determine which identified issues require a new approach within the rate structures.

Phase 2 – Analysis of Potential Alternatives (July – September)
Based on WRAB feedback at the July meeting, and staff direction, RFC will develop and analyze options to address issues identified in the first phase. Alternatives will be developed and tested across all three utilities and all customer classes and bill impacts will be calculated. Staff and RFC will present the results of the options analysis at the September meeting and offer draft recommendations as appropriate. Depending on the results of this phase, staff may update council within the context of the 2017 budget process and, if feasible, any simple and/or non-controversial changes may be recommended for adoption in the budget.

Phase 3 – Recommendations (October – December)

Based on the results of the second phase and WRAB discussion in September, staff and RFC will refine the analysis and draft recommendations and present a final report for WRAB's acceptance and recommendation to council.

III. NEXT STEPS

Staff and RFC will present preliminary findings and seek WRAB feedback at the July18 meeting.

ATTACHMENTS

A – Water Budget Rules
B – Rate Structure Informational Handouts
C – 2016 Rates and Fees

RULE ESTABLISHING THE METHODOLOGY TO BE UTILIZED IN DETERMINING THE MONTHLY WATER BUDGET FOR THE COMPONENT OF THE MONTHLY WATER USER CHARGES KNOWN AS THE TREATED WATER QUANTITY CHARGE, AND FOR DETERMINING THE MONTHLY WASTEWATER USER CHARGES.
AMENDED – EFFECTIVE AUGUST 1, 2009

1. Authority.

These rules are issued pursuant to Section 11-1-3, "Rules and Regulations," B.R.C. 1981 to implement the provisions of Sections 11-1-44, "Water User Charges," 4-20-25(b), "Monthly Water Service Charges – Treated Water Quantity Charges," B.R.C. 1981, and 4-2-28, "Monthly Wastewater User Charges", B.R.C. 1981.

2. Purpose and Applicability.

The monthly water user charges set forth in Section 4-20-25, B.R.C. 1981, identify two components for the monthly charges that are billed to consumers. Section 4-20-25(a), B.R.C. 1981, sets forth the treated water monthly service charge which is a fixed amount based on the meter size. Section 4-20-25(b) sets forth the treated water quantity charges which vary depending on use. Beginning in January 2007, the treated water quantity charge portion of water bills were calculated using a water budget block rate structure such that the price of water increases as more water is used, particularly when the amount of water used exceeds the customer's water budget. The increasing price is necessary not only to promote water conservation, but also is related to the additional marginal cost associated with water development and water conservation. Effective August 1, 2009, water budget methodology enhancements have been made to multifamily, commercial/industrial/institutional, and metered irrigation accounts.

The purpose of this rule is to establish a methodology that shall be utilized to determine the monthly water budget for the treated water quantity charge, and for determining the monthly wastewater user charges. This rule establishes a system whereby the revenue produced will meet the treated water quantity charge portion of the revenue requirements for the water utility. This rule does not include or apply to the treated water monthly service charges set forth at Section 4-20-25(a), B.R.C. 1981.

It is also the purpose of this rule to establish a rate structure that will promote water conservation and the efficient use of water, support community goals, reflect the value of water, send a price signal to customers who waste water, and avoid the costs of new water development and expanded water treatment.

3. Definitions and Abbreviations.

"AMU" means average monthly use.

"AWC" means the average monthly water consumption as reflected on a customer's bill from December through March.

"CII" means Commercial/Industrial/Institutional.

"ET" means evapotranspiration (also, see ET Rate).

"ET rate" means the amount of water (in inches) a lawn will use on any specific day through the natural processes of surface evaporation and plant transpiration (loss of water through the leaves). The historic monthly ET rate is specifically defined in the following chart:

Historic Monthly ET Rate		
Month	ET (inches)	Share of Annual Outdoor Allocation
January	0.00	0%
February	0.00	0%
March	0.40	1%
April	2.72	7%
May	5.10	14%
June	7.52	20%
July	7.60	20%
August	6.67	18%
September	4.43	12%
October	2.92	7%
November	0.32	1%
December	0.00	0%
Total	**37.68**	**100%**

"GPSF" means gallons per square foot.

"HMU" means historical monthly use.

"Irrigable area" means the area (in square feet) that a customer is required to maintain pursuant to Title 6, Title 8 and Title 9, B.R.C. 1981, is not covered by a hard surface (such as a roof, driveway, patio or sidewalk) and that may require some outdoor watering. Right-of-way may be included as part of a customer's irrigable area but the city's geographical information system ("GIS system") may not automatically include city right-of-way. Customers may seek inclusion of right-of-way pursuant to paragraph 7 below.

"Kgal" means thousand gallons.

"Monthly water budget" means the amount of water allocated to the water utility customer to meet that customer's anticipated water needs for the month. The monthly water budget shall be the sum of the indoor and/or outdoor allocation for each water utility customer. The allocation

shall be based on reasonable and necessary indoor and/or outdoor use, water conservation, and other relevant factors associated with water use in the city.

"Public ROW" means public right-of-way.

4. Block Rate Structure for Treated Water Quantity Charges.

The block rate structure established in Section 4-20-25(b)(1), B.R.C. 1981, is utilized in conjunction with the monthly water budget in order to determine the bill for each customer on a monthly basis. The monthly water budget represents the amount of water allocated to a customer to meet the anticipated watering needs for the month. Customers are billed for the amount of water they use each month, not for their budgeted amount of water. The amount billed per Kgal increases as customers use more water. (See table below.)

	Block Rate (per Kgal)	Rate (per Kgal)	Block Size (% of water budget)
Block 1	Each Block Rate will be as reflected in Section 4-20-25 (b)(1), B.R.C. 1981	¾ Base Rate	0 – 60%
Block 2		Base Rate	61 – 100%
Block 3		2 x Base Rate	101 – 150%
Block 4		3 x Base Rate	151 – 200%
Block 5		5 x Base Rate	Greater than 200%

Some customers have a "looped" water system in which multiple water meters are used in an effort to increase reliability and to provide redundancy to their water system. In these "looped" water systems, water meter accounts will be combined for budgeting and billing purposes.

5. Customer Classes.

This rule establishes four different customer classes: single-family residential, multifamily residential, CII and metered irrigation. CII will have four sub-customer classes: 1) CII AMU (default option); 2) CII HMU; 3) CII indoor/outdoor, and 4) CII efficiency standard. The method used to calculate the water budget for each of these classes and sub-customer classes is described below. The bills for all customer classes utilize the customer's water budget amount which is then applied to the block rates to determine the monthly water bill.

a. Single-Family Residential

The single-family residential customer's budget shall consist of indoor and outdoor allocations for water. The indoor allocation for each customer with a household size of up to four people shall be set at 7,000 gallons per month. The outdoor allocation shall be based on customer-specific irrigable area as determined by the city's GIS system. This system maps and calculates areas within defined property boundaries and hard surface boundaries. The total annual outdoor allocation shall be based on the following application rates:

- For the first 5,000 square feet of irrigable area: 15 gpsf
- For the next 9,000 square feet of irrigable area: 12 gpsf
- For irrigable area in excess of 14,000 square feet: 10 gpsf.

In order to reflect varying seasonal outdoor monthly watering requirements, the total annual allocation of water for irrigable area shall be distributed to each month based upon that month's annual outdoor amount as described by the historic monthly ET rate.

Customers are able to base their budget on an amount less than their total irrigable area.

Single-family residential customers may seek water budget adjustments pursuant to paragraph 7 below.

b. Multifamily Residential

The multifamily residential customer's budget shall consist of indoor and outdoor allocations. The indoor allocation for each residential dwelling unit shall be set at 4,000 gallons per month. The outdoor allocation shall be based on customer-specific irrigable area as determined by the city's GIS system and a total annual application rate of 15 gpsf. In order to reflect varying seasonal outdoor monthly watering requirements, the total annual allocation of water for irrigable area shall be distributed to each month based upon that month's annual outdoor amount as described by the historic monthly ET rate.

Customers are able to base their budget on an amount less than their total irrigable area and will be allocated 15 gpsf for the total amount of the reduced area.

Multifamily residential customers may seek water budget adjustments pursuant to paragraph 7 below.

c. Commercial/Industrial/Institutional (Non-residential)

1. CII Customer Budgets - Existing

1) CII AMU customer budgets shall be based on 100% of historical AMU for the 12-month period in 2005. This AMU amount will be fixed as the monthly budget until another AMU period is defined. Customers may apply for a CII AMU adjustment (see paragraph 7 below) based on actual water usage in years subsequent to 2005. CII AMU (2005) is the default methodology unless customers apply for a water budget adjustment by selecting one of the other options listed below. AMU will result in monthly wastewater charges based on all water used which could include water used for irrigation. Customers may choose a different CII option only one time per year.

2) CII HMU customer budgets shall be based on the most recent three-year historical average for water use for each month and recalculated every year. January three-year historical average would become the January water budget, February three-year historical average would become the February water budget, etc. HMU will result in monthly wastewater charges based on all water used, which could include water used for irrigation.

3) CII indoor/outdoor customer budgets shall be based on an indoor allocation as determined by the customer's most recent average winter consumption (AWC) and an outdoor allocation based on the irrigable area (including public ROW), using an application rate of 15 GPSF and apportioned monthly using the historical monthly ET rate. Public ROW will automatically be included in the irrigable area for CII indoor/outdoor customers. CII indoor/outdoor customers will be billed wastewater charges on actual water used or indoor budget allocation (AWC) whichever is lower, for the billing period. A customer may not select the CII indoor/outdoor option if there is not any irrigable area (therefore, no outdoor allocation) associated with the account.

4) CII efficiency standard customer budgets shall be determined by a specific review of the customer's indoor and outdoor uses based on reasonable and documented efficiency standards as determined in the methodology described in paragraph 6 below. CII efficiency standard customers will be billed wastewater charges on actual water used or indoor budget allocation, whichever is lower, for the billing period.

2. CII PIF Custom Customer Budgets - New or Redevelopment

1) New or existing CII customers who are placing an increased demand on the city's water system must determine the appropriate meter size and select an annual budget. These customers will use the CII Plant Investment Fee (PIF) custom annual budget which is based on 25, 50 or 85 percent of the AWC for a specified meter size (see table below). The CII PIF customer may then select how this annual water budget is distributed throughout the twelve months. This annual budget distribution may be specified by the CII PIF customer once per year.

TABLE: Annual Water Budget Based on AWC (gallons)

Meter Size	25% AWC	50% AWC	85% AWC
¾"	N/A	30,000	165,000
1"	42,000	108,000	503,000
1-1/2"	99,000	228,000	924,000
2"	183,000	483,000	1,941,000

2) Mixed-use properties water budget will be calculated based on a combination of the amount they have purchased based on the meter size for the CII portion of the building, and the number of dwelling units and bedrooms for the multifamily portion of the building, as described in these rules.

3) New CII customers that have water meter(s) larger than 2" will be allocated an efficiency standard custom budget as indicated in paragraph 6 below.

4) CII customers may seek water budget adjustments pursuant to paragraph 7 below.

d. Metered Irrigation

Metered irrigation customer budgets shall be based on customer-specific irrigable area as determined by the city's GIS system, and an annual application rate of 15 gpsf. The budget shall change each month based upon that month's share of annual outdoor allocation described by the historic ET rates, except that metered irrigation accounts will be given an additional 1% of their annual outdoor watering budget for each month in December, January and February. The purpose of this additional 1% is to establish a monthly water budget that is greater than zero and allows for some limited outdoor watering. Public ROW will automatically be included and added to the irrigable area for all metered irrigation accounts.

Customers are able to base their budget on an amount less than their total irrigable area and will be allocated 15 gpsf for the total amount of the reduced area.

Metered irrigation customers may seek water budget adjustments pursuant to paragraph 7 below.

6. Standards and Practices Regarding Water Audits for CII Customers That Request the Efficiency Standard Water Budget Option.

The CII efficiency standard water budget option is intended to provide a customer-specific water budget (indoor allocation and outdoor allocation) that is determined by a specific review of the customer's indoor and outdoor uses, needs and facilities, by a Colorado registered professional engineer with a focus on various components, including without limitation:

- industrial or production processes,
- bathroom and locker rooms,
- kitchen and food preparation areas,
- cooling and heating facilities,
- humidity control, and
- aquatics or pool needs.

The purpose of the customer-specific review is to develop a monthly indoor water allocation based on reasonable and documented efficiency standards and, if needed, a monthly outdoor allocation. If a customer has any irrigable area that is not included in a separate metered irrigation-only account, the irrigable area size should be included for use in the CII Efficiency Standard option. The monthly outdoor allocation shall be based on the irrigable area (including public ROW), an application rate of 15 GPSF and apportioned monthly using the historical monthly ET rate. Because plant materials, irrigation systems components, weather, soil conditions, etc, are not needed in determining the outdoor allocation, it is not necessary to have a landscape architect or a certified landscape irrigation auditor involved in the audit unless there is an indoor garden or horticulture need.

The indoor water audit and evaluation shall consider the following, if applicable:

- The City is a partner with the EPA WaterSense program and information is available on the EPA WaterSense web site. Standards related to high-efficiency plumbing fixtures will be used for the audit. For example, while a 1.6 gallon/flush toilet is today's regulated standard, a high-efficiency toilet, as promoted by WaterSense, uses 1.28 gallon/flush or less and should be used in the audit and development of the indoor budget allocation.
- Data for high-efficient, front loading clothes washers.
- Recycle and reuse process water.
- Limited or no humidification: requires documented need for equipment or medical reasons.
- Use of automatic on/off sensors on faucets in restrooms in larger facilities.
- High-efficiency dishwashers in kitchen areas, especially in restaurants and catering facilities.
- Use of a cover in facilities that have large, open vessels of water.
- Efficient operation of cooling towers.
- Sanitation and cleaning practices in office buildings. Use of high-efficient plumbing fixtures and appliances. Use of sensor activated or timed faucets.
- Use of plumbing fixtures, dishwashers and ice machines in restaurants. Servers offering a glass of water on request, but not as an automatic service. Use sensor activated or timed faucets. Reduce water in food preparation activities.
- Efficiencies for cooling water, food preparation, boilers and chillers in supermarkets.
- Plumbing fixtures, laundry facilities and ice machines in hotels and motels. Request guests to reuse their towels and linens to reduce laundry needs.
- Efficiencies in cafeteria food preparation, plumbing fixtures, restrooms and locker rooms in schools.

The report shall include a recommendation for each month's indoor water budget allocation, based on the audit and evaluation. In addition, effective June 1, 2008, the wastewater charge for a customer who uses the CII efficiency standard water budget option will be based on each accounts indoor water budget allocation or actual water used, whichever is lower, for the billing period. If an account does not have an outdoor water budget allocation, wastewater charges will be based on actual water used as measured by the water meter.

Requests by CII customers for a water budget adjustment application requesting use of the efficiency standard water budget option, shall include a report prepared by a Colorado registered professional engineer which documents and describes the evaluation and audit, including a recommendation for the CII efficiency standard monthly water budget. The city manager or his/her delegate will review and approve, revise or deny the water budget adjustment request prior to its implementation and use. A fee will be charged to review the CII efficiency standard water budget option request and its associated report pursuant to Section 4-20-43(c)(7) B.R.C. 1981, which establishes a technical document review fee for a miscellaneous plan review.

7. <u>Water Budget Adjustments.</u>

Water budget adjustments may be granted by the city manager or his/her delegate to insure that the needs of the water utility customer are reasonably balanced against the purposes for this rule in paragraph 2 above. The city manager or his/her delegate may consider the following:

- Number of people in household (more than four people may receive 1,000 gallons per month per person) (single family accounts only and is renewable on an annual basis)
- Irrigable area square footage (landscaping area)
- Irrigable area of public ROW that customers are required to care for and maintain
- Number of dwelling units (multifamily accounts only)
- Number of bedrooms in a dwelling unit (multifamily accounts only). Dwelling units that have more than two bedrooms may receive an additional 1,000 gallons per month, but the total indoor allocation per dwelling unit may not exceed 7,000 gallons per month, which is the equivalent of five bedrooms..
- Average Monthly Use (CII accounts only)
- Historical Monthly Use (CII accounts only)
- Indoor/Outdoor (CII accounts only)
- Efficiency Standard (CII accounts only)
- Licensed in-home childcare or eldercare facility
- Other (medical needs, etc.).
- Monthly budget allocation (CII PIF Custom accounts only)*

Customers shall submit a water budget adjustment application in order to have their request considered by the city manager or his/her delegate. Information contained on the application may be subject to an audit and, if necessary, additional documentation may be required in order to substantiate the requested adjustment. This information is outlined on the water budget adjustment application.

*Customers who have a PIF budget must submit their budget change request to Planning & Development Services for approval.

When reviewing the water budget adjustment application, the city manager or his/her delegate may consider the following information:

- Completeness of required documentation submitted with the Application
- Authenticity of supporting documents

- Duration of household size or medical need
- Historic water usage information for property
- Correct errors or changed circumstances
- Other factors relevant to making a determination, provided that the needs of the water utility customer are balanced against the purposes for this rule in paragraph 2 above.

Water budgets will not be adjusted to accommodate:

- Pools, spas, or hot tubs
- In-home businesses or hobbies that use an increased amount of water
- Gardens (gardens are included in the initial calculation of irrigable area and will not be the basis for additional water budget adjustments).

8. <u>Water Budget Calculation Example – Single-Family Residential.</u>

The single family residential water budget is the sum of an indoor and outdoor allocation. The indoor allocation is 7,000 gallons per month.

The outdoor allocation is based on customer-specific irrigable area as provided by the city's geographical information system. This allocation changes monthly based on seasonal watering needs. The annual outdoor allocation is calculated as follows:

- The first 5,000 square feet of irrigable area is allocated15 gallons of water per square foot (gpsf)
- The next 9,000 square feet of irrigable area is allocated 12 gpsf
- All excess irrigable area gets 10 gpsf.

A customer with 14,400 square feet of irrigable area would have the following annual outdoor allocation:

Irrigable Area (square feet)	**Gallons per Square Foot**	**Total Gallons**
5,000	15	75,000
9,000	12	108,000
400	10	4,000
Annual Outdoor Allocation		**187,000**

The annual outdoor allocation is distributed throughout the year to meet changing monthly seasonal outdoor watering needs. The table below shows the percentages by month that will be applied to the annual outdoor allocation. These percentages were derived from historic ET data (as displayed in paragraph 3, above).

Historic ET Rate	
Month	Share of Annual Outdoor Allocation
January	0%
February	0%
March	1%
April	7%
May	14%
June	20%
July	20%
August	18%
September	12%
October	7%
November	1%
December	0%
Total	**100%**

A customer with an annual outdoor allocation of 187,000 gallons would receive 20% (37,400 gallons) in June. This number will be rounded up to the nearest 1,000 gallon; therefore, this customer would receive 38,000 gallons in June.

In June, this customer's monthly water budget would be 45,000 gallons: the sum of the indoor allocation (7,000 gallons) plus the outdoor allocation (38,000 gallons) 45,000 gallons.

If this customer used 70,000 gallons in June (budget is 45,000 gallons), the water usage would be billed as follows:

Rate Block	**% of Budget**	**Gallons per Rate Block**	**Billed Water Usage (gallons)**
Block 1	0-60% of budget	0 – 27,000	27,000
Block 2	61-100% of budget	27,001 – 45,000	18,000
Block 3	101-150% of budget	45,001 – 68,000	23,000
Block 4	151-200% of budget	68,001 – 90,000	2,000
Block 5	over 201% of budget	Over 90,000	0

The customer's monthly bill uses the volume of water used in each rate block multiplied by the rate ($) for each billing block to determine the treated water quantity charge component of the monthly water bill.

Water Budgets
Single Family Residential

Residential water budgets consist of two parts: an indoor allocation and an outdoor allocation. The indoor allocation is set at 7,000 gallons per month (for four people). Customers with larger families can apply to get an additional 1,000 gallons a month for each additional person in the home. As customers use more water in relation to their water budgets, consumption moves up into higher "blocks" as outlined below.

Block	Quantity Charge (per 1,000 gal)	2015 Rates (per 1,000 gal)	Gallons billed in each Block
Block 1	¾ x Base Rate	$ 2.55	0 to 60% of total monthly water budget
Block 2	Base Rate	$ 3.40	61-100% of total monthly water budget
Block 3	2 x Base Rate	$ 6.80	101-150% of total monthly water budget
Block 4	3 x Base Rate	$10.20	151-200% of total monthly water budget
Block 5	5 x Base Rate	$17.00	> 200% of total monthly water budget

The outdoor allocation is based on customer-specific irrigable area as provided by the city's geographic information system (GIS) and changes monthly using historic evapotranspiration (ET) rates which correlate with seasonal watering needs. The annual outdoor allocation is calculated as follows:

- The first 5,000 square feet of irrigable area gets 15 gallons of water per square foot (gpsf).
- The next 9,000 square feet of irrigable area gets 12 gpsf.
- All irrigable area in excess of 14,000 square feet gets 10 gpsf.

Customers also pay a fixed service charge based on meter size. The service charge is based on the size of the water meter, which varies based on the amount of water required at the location. For example, most single family residential dwellings have a ¾ inch meter. Commercial or industrial facilities may have a larger meter size depending on their water need.

Monthly Outdoor Allocation Distribution	
Month	Percent of Annual Outdoor Allocation
January	0%
February	0%
March	1%
April	7%
May	14%
June	20%
July	20%
August	18%
September	12%
October	7%
November	1%
December	0%
Total	**100%**

Service Charges		
Meter Size (Inches)	Inside City	Outside City
¾	$9.67	$14.51
1	$16.27	$24.40
1 ½	$35.04	$52.27
2	$61.38	$92.08
3	$136.54	$204.81
4	$241.76	$362.63
6	$542.52	$813.78
8	$963.56	$1,445.34

Water Budgets
Multifamily Residential

Residential water budgets consist of two parts: an indoor allocation and an outdoor allocation. Multifamily residential accounts have a monthly indoor allocation of 4,000 gallons per dwelling unit. If an apartment has more than two bedrooms, an additional 1,000 gallons of water per bedroom can be requested for up to three additional bedrooms for a maximum of 7,000 gallons per living unit per month. As customers use more water in relation to their water budgets, consumption moves up into higher "blocks" as outlined below.

Block	Quantity Charge (per 1,000 gal)	2015 Rates (per 1,000 gal)	Gallons billed in each Block
Block 1	¾ x Base Rate	$ 2.55	0 to 60% of total monthly water budget
Block 2	Base Rate	$ 3.40	61-100% of total monthly water budget
Block 3	2 x Base Rate	$ 6.80	101-150% of total monthly water budget
Block 4	3 x Base Rate	$10.20	151-200% of total monthly water budget
Block 5	5 x Base Rate	$17.00	> 200% of total monthly water budget

The outdoor allocation is based on customer-specific irrigable area as provided by the city's geographic information system (GIS) and changes monthly using historic evapotranspiration (ET) rates which correlate with seasonal watering needs. All irrigable area gets 15 gallons of water per square foot.

Customers also pay a fixed service charge based on meter size. The service charge is based on the size of the water meter, which varies based on the amount of water required at the location. For example, most single family residential dwellings have a ¾ inch meter. Commercial or industrial facilities may have a larger meter size depending on their water need.

Monthly Outdoor Allocation Distribution	
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March	1%
April	7%
May	14%
June	20%
July	20%
August	18%
September	12%
October	7%
November	1%
December	0%
Total	**100%**

Service Charges		
Meter Size (Inches)	Inside City	Outside City
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Water Budgets
Commercial/Industrial/Institutional (CII)

CII customers can choose from four different water budget options.

The four budget options are:

- **Average Monthly Use (AMU)** - This is the default option. The AMU budget is calculated using the historical average of 12 consecutive months of water use for that account, so that every month's water budget is the same. Customers can now apply to change the timeframe used for the 12-month average. (The default timeframe is January through December 2005.) If you feel that the AMU used in calculating your water budget is incorrect, you can apply for an adjustment. Please provide information explaining the reason for an adjustment along with a new estimated AMU. This information will be used in conjunction with historical water usage in reviewing the adjustment application. Budget adjustments for AMU do not expire.

- **Historical Monthly Use (HMU**) - The HMU budget is calculated using a rolling three-month average for each individual month. For example, the average of the past three Januarys' use would be next year's January budget.

- **Indoor/Outdoor** - The Indoor/Outdoor budget is similar to the single-family budget in that it is comprised of both an indoor water allocation and an outdoor water allocation. The indoor allocation is based on the most recent Average Winter Consumption (AWC), which is the average water use for that account for December through March. The outdoor allocation is calculated based on irrigable area, including right of way, and seasonal watering needs.

- **Efficiency-Standard** - This option allows for a specific customized water budget. The customer must hire a professional engineer to evaluate and recommend a personalized indoor budget, which then must be reviewed and approved by the city. The customer will be charged a fee for the city review.

As customers use more water in relation to their water budgets, consumption moves up into higher "blocks" as outlined below.

Block	Quantity Charge (per 1,000 gal)	2015 Rates (per 1,000 gal)	Gallons billed in each Block
Block 1	¾ x Base Rate	$ 2.55	0 to 60% of total monthly water budget
Block 2	Base Rate	$ 3.40	61-100% of total monthly water budget
Block 3	2 x Base Rate	$ 6.80	101-150% of total monthly water budget
Block 4	3 x Base Rate	$10.20	151-200% of total monthly water budget
Block 5	5 x Base Rate	$17.00	> 200% of total monthly water budget

Customers also pay a fixed service charge based on meter size.

Wastewater Charges

Wastewater charges are based on the quantity of indoor water use and a monthly service charge. The quantity charge is based on Average Winter Consumption (AWC) of water, which is defined as the average monthly amount of water used during the winter months of December through March. Each month the wastewater quantity charge is billed based on your AWC or actual water use, whichever is less.

Quantity charges are based on the following rate per 1,000 gallons of wastewater.

Inside City	Outside City
$5.76	$8.64

Service charges are based on water meter size, which varies based on the amount of water required at the location. For example, most single family residential dwellings have a ¾ inch meter. Commercial or industrial facilities may have a larger meter size depending on their water need.

Meter Size (Inches)	Inside City	Outside City
¾	$1.43	$2.15
1	$2.51	$3.76
1 ½	$5.73	$8.60
2	$10.10	$15.15
3	$22.71	$34.07
4	$40.42	$60.63
6	$90.94	$136.40
8	$161.67	$242.50

Stormwater & Flood Management Fees

The single family residential fee varies on the basis of parcel size as follows.

Parcel Size	Monthly Fee
0- 15,000 square feet	$13.46
15,000-30,000 square feet	$16.82
30,000 or more square feet	$20.20

The fees for all properties that are not single family residential are individually calculated. The formula is constructed to be in proportion to the base rate assessed to single-family dwellings. The fee is equal to the following.

$$\frac{\text{(Total Site Area in square feet)(Runoff Coefficient)(Base Rate)}}{\text{(7,000 square feet)(0.43)}}$$

A property's runoff coefficient, for the purposes of the fee, is equal to the following:

$$\frac{\text{(Total Impervious Area in square feet)(0.9) + (Total Pervious Area in square feet)(0.2)}}{\text{Total Area}}$$

For example, a commercial property with a total area of 40,000 square feet, of which 20,000 square feet are impervious and 20,000 square feet are pervious, would have a runoff coefficient of 0.55 and would pay $98.38 per month, calculated as follows:

$$\frac{\text{(40,000 square feet)(0.55)(\$13.46)}}{\text{(7,000 square feet)(0.43)}} = \$98.38$$

The 0.55 runoff coefficient in the above example is calculated as follows:

$$\frac{\text{(20,000 sq. feet impervious area)(0.9)+(20,000 sq. feet pervious area)(0.2)}}{\text{(40,000 square feet total area)}} = 0.55$$

City of Boulder
2016 Monthly Utility Charges and Water Service Fees

Monthly Water Charges

Service Charges		
Meter Size	Inside City	Outside City
3/4"	$10.44	$15.67
1"	$17.57	$26.36
1 1/2"	$37.84	$56.76
2"	$66.29	$99.44
3"	$147.46	$221.19
4"	$261.10	$391.65
6"	$585.92	$878.88
8"	$1,040.64	$1,560.97

Bulk Water & Metered Hydrant Rate
$8.00 per 1000 gallons

Quantity Charges/ 1000 gallons		
Block 1	$2.76	Water usage up to 60% of monthly water budget
Block 2	$3.68	Water usage between 61-100% of monthly water budget
Block 3	$7.36	Water usage over monthly water budget up to 150% of monthly water budget
Block 4	$11.04	Water usage between 150-200% of monthly water budget
Block 5	$18.40	Water usage over 200% monthly water budget

Miscellaneous Charges	
To terminate water service	$33.00
To mail water service termination notice	$14.00
To remove water meter	$63.00
To reset water meter	$55.00
To resume water service	$31.00
To resume water service after 3:00 p.m., weekends or holidays	$61.00
Special meter read	$39.00
To test meter and meter tests accurate	$50.00
To purchase water monitor	$110.00

Monthly Wastewater Charges

Service Charges		
Meter Size	Inside City	Outside City
3/4"	$1.50	$2.25
1"	$2.64	$3.95
1 1/2"	$6.02	$9.02
2"	$10.61	$15.91
3"	$23.85	$35.77
4"	$42.44	$63.66
6"	$95.49	$143.23
8"	$169.75	$254.63

Quantity Charges/ 1000 Gallons	
Inside City	Outside City
$6.05	$9.07

Monthly Stormwater and Flood Management Charges

Owners of single family dwellings within the city limits will pay the following stormwater charges:

Size of Parcel	
up to 15,000 sq. ft.	$14.00
15,000 to 30,000 sq.ft.	$17.49
30,000 sq. ft. and up	$21.01

The fee for all non-single family dwellings is individually calculated.