

Big Bear Area Regional Wastewater Agency

Special Board Meeting Agenda
January 20, 2025 at 10:00 a.m.
121 Palomino Drive, Big Bear City, CA 92314

- 1. Call to Order**
- 2. Pledge of Allegiance**
- 3. Approval of Agenda**
- 4. Public Forum** - Public testimony is permitted only on matters listed on the posted agenda. Public comment on items listed on the posted agenda will be taken at the time each item is called for discussion. State law prohibits the Agency from taking action on any items not listed on the posted agenda.
- 5. New Business – Discussion/Action Items**
 - a. DISCUSSION ONLY** - Equivalent Dwelling Unit Calculation and Total Annual Charge Methodology
- 6. Adjournment**

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Copies of staff reports or other written documentation relating to each item of business referred to on this agenda are on file in the office of the Big Bear Area Regional Wastewater Agency and are available for public inspection during normal business hours.

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Agenda Item 5.A.

Meeting Date: January 20, 2025

To: Governing Board of the Big Bear Area Regional Wastewater Agency

From: David Lawrence, P.E., General Manager

Subject: **DISCUSSION ONLY** – Equivalent Dwelling Unit Calculation and Total Annual Charge Methodology

Background:

On May 3, 1977, the Governing Board adopted Operating Agreement No. 1. Section 1.09 defines an EDU (Equivalent Dwelling Unit) as a single family dwelling unit (residence) or a business establishment which will not contribute substantially more sewage and wastewater to the Regional System than the average daily quantity contributed by a single family residence and which will not contribute sewage and wastewater to the Regional System having a pollutant loading greater than that of the sewage and wastewater from a single family residence. For other sewer users such as hotels, motels, apartment buildings, restaurants, laundromats, ski areas, schools and governmental buildings, that have multiple plumbing fixtures or that will contribute substantially more sewage and wastewater to the Regional System than the average daily quantity contributed by a single family residence or that will contribute sewage and wastewater to the Regional System having a pollutant loading greater than that of a single family residence, depending on the total average daily quantity or pollutant loading of sewage and wastewater that such a sewer user will contribute to the Regional System, such a user may be assigned more than one EDU. EDU means a quantity of sewage and wastewater equivalent to the average daily quantity produced by a single family residence and having a pollutant loading equivalent to that of the sewage and wastewater from a single family residence.

On April 13, 1978, the Governing Board adopted Ordinance No. 2, Prescribing Connection Fees. Section 1.1 defines an EDU as the equivalent flow and pollutant loading of sewage and wastewater from a single-family dwelling unit. The amounts of various fees and charges to be paid by users of the Agency's sewerage system are determined based on the number of EDUs assigned to such users by the Collecting Agencies (Member Agencies) in accordance with the Agency's user charge system.

On June 28, 1984, the Governing Board adopted Ordinance No. 21, Modifying User Charge Classifications and Repealing Ordinance No. 1.

On May 23, 1985, the Governing Board adopted Ordinance No. 25, Modifying and Reestablishing User Charge Classifications and Repealing Ordinance No. 21.

On July 22, 1998, the Governing Board adopted Ordinance No. 66, Modifying and Reestablishing User Charge Classifications and Repealing Ordinance No. 25. Section

5.12.010, Item B, defines an EDU as the equivalent flow and pollutant loading of sewage and wastewater from a single-family dwelling unit and establishes the basis for the Connection Fee and Annual User Fee. Section 5.12.030 defines the User Charge Classifications as:

- a. User charges for all users of the public sewer system shall be based on the number of EDU's assigned to such users by the Collecting Agencies based on the following formula.
- b. Residential User: 1 EDU per living unit.
- c. Commercial User, Industrial waste and special cases:

$$\frac{\text{Daily Flow } [(0.642) + (\text{BOD}) (0.179) + (\text{SS}) (0.179)]}{160 \text{ gpd}} = \text{EDU's}$$

BBARWA's 2010 Sewer Master Plan states the Agency's current annual sewer flow is approximately 2.5 million gallons per day (mgd) including 1.40 mgd of base flow, 0.70 mgd of other sanitary flows (generated by visitors, part-time residential and commercial activities), and 0.4 mgd of infiltration/inflow (I&I). The sewer load index is approximately 172 gallons per day per full-time residential EDU.

A special case calculation can be assumed as follows:

$$\frac{\text{Daily Flow } [(0.555) + (\text{BOD}) (0.310) + (\text{SS}) (0.135)]}{172 \text{ gpd}} = \text{EDU's}$$

On August 2, 2011, BBARWA and its Member Agencies met to review this material and to share methods each used to assign EDU's. Upon review of the various resolutions and rating systems, it appeared that all Member Agency policies and procedures were similar. The discussion was continued to the regular meeting on September 28, 2011. On February 29, 2012, the Governing Board was presented with the status of the EDU definition, ordinance, and current Member Agency billing methodology. No changes were made to the EDU definition or calculation.

Discussion:

Recently, a Governing Board Member raised concerns about the fairness of the current EDU calculation method. Specifically, the Board Member pointed out that under the current system, a 6-bedroom house pays the same sewer user charge as a 1-bedroom house, which may not accurately reflect the difference in wastewater usage between larger and smaller households. This issue warrants further consideration to ensure that the sewer user charges are equitable. The Governing Board and their respective agencies may explore potential adjustments to the EDU calculation method to address this inequity.

In addition to revisiting the EDU calculation, the Governing Board may also consider modifications to the current Total Annual Charge methodology as a way to address this inequity. The existing structure may not fully account for differences in the distribution of costs among Member Agencies. By adjusting the Total Annual Charge approach, the Governing Board could explore more equitable methods. This could help ensure that each Member

Agency's Total Annual Charge reflects a fairer distribution of costs, potentially improving the overall equity of the system.

Below is a summary of options the Governing Board and Member Agencies may consider. If the Governing Board chooses, BBARWA staff can facilitate these discussions.

Member Agency EDU Allocation Method

Each Member Agency assigns EDUs, based on the methodology discussed above, and the total number of EDUs is reported to BBARWA annually. The total EDUs per Member Agency are used to calculate the sewer user charge. Member Agencies may explore changes to how EDUs are defined or calculated, as well as how they are distributed, in response to concerns about equity. Any proposed changes must be made at the Member Agency level and require agreement from all Member Agencies.

Sewer Meter

This method would require each Member Agency to install a sewer meter at each property. Each Member Agency would then bill the property owner based on actual sewer usage, similar to water usage. This would be the most accurate method; however, there may be a discrepancy between the actual sewer usage at the meter (billed by the Member Agency to its customer) and the flow meter used by BBARWA to bill Member Agencies due to I&I.

Water Consumption Based Fee

A water consumption based fee for wastewater treatment rates is a pricing structure where the cost of wastewater services is determined by the amount of water a customer uses. The more water consumed, the higher the wastewater fee. This approach reflects the idea that the volume of wastewater generated by a customer is closely related to the amount of water they use. The customer's water usage is measured through their water meter and serves as a basis for calculating the wastewater fee. This approach is considered equitable because it links wastewater charges directly to the volume of wastewater a customer generates, based on their water consumption. It assumes that the more water a household or business uses, the more wastewater it produces. The Member Agency would determine the amount charged to each property based on water usage. This method could be difficult to implement due to the Big Bear City Community Services District's (CSD) sewer customers receiving water from the City of Big Bear Lake Department of Water and Power (DWP) and I&I issues.

Square Footage

This method involves determining the square footage that correlates with one EDU. Member Agencies would conduct a system wide survey, reassign EDUs based on square footage, and report the new totals to BBARWA. This method may not accurately reflect sewer usage.

Fixture Count

This method requires Member Agencies to determine how many fixtures equal one EDU. Each Member Agency would conduct a system wide survey and reassign EDUs based on fixture counts, with the total number of EDUs reported to BBARWA. This method may be more time consuming and still may not accurately reflect sewer usage.

Capacity Based Method

Charges are based on the potential sewer system capacity needed by the property, considering factors like the number of bathrooms or potential occupancy. This would involve a formula considering the number of fixtures, rooms, or estimated usage. Each Member Agency would conduct a system wide survey. While it reflects potential demand on the sewer system, this method requires detailed property information and can be challenging to update.

Flow Quality and Quantity

Wastewater treatment and disposal charges could be calculated by Member Agencies by allocating the costs of wastewater treatment and disposal in accordance with sewage quantity (flow) and quality (indicated by suspended solids and biochemical oxygen demand or BOD). Member Agencies would install individual meters at each sewer connection and provide testing of the sewer strength. This would be the most difficult method to calculate and implement.

BBARWA’s Total Annual Charge

The Governing Board may consider changes to the current Total Annual Charge calculation to address concerns about inequities in the distribution of costs. The current rate methodology includes a fixed rate and a variable rate. The fixed cost rate includes fixed operating costs and capital expenditures as a percentage of all operating costs plus debt service. Fixed operating costs include Salaries and Benefits, Communications Expense, Contractual Services, Permits and Fees, Property Tax Expense, Insurance, and Other Operating Expense. The fixed operating costs are calculated at 74.1% of total operating costs for FY 2025. The fixed portion of capital expenditures is calculated by taking total capital expenditures (minus any offsets such as grants) multiplied by the percentage of total operating costs used for the fixed operating cost calculation. The variable cost rate is the remaining percentage of total operating costs and capital expenditures. As part of this review, the Governing Board may explore adjustments to the rate methodology to better align with equity concerns, ensuring that charges reflect a fairer distribution of costs across all Member Agencies.

Agency	FY 2025 Total Annual Charge	% of Total Annual Charge
City of Big Bear Lake (CBBL)	\$4,343,580.81	47.51%
Big Bear City Community Services District (CSD)	4,369,986.19	47.79%
San Bernardino County CSA 53B (CSA 53B)	430,033.05	4.70%
Total	\$9,143,600.05	

For reference, FY 2025 EDU information is below:

Agency	FY 2025 EDUs	EDU % per Agency
CBBL	11,813.70	46.10%
CSD	12,545.70	48.95%
CSA 53B	1,268.00	4.95%
Total	25,627.40	

The following changes in rate methodology are based on the FY 2025 Total Annual Charge of \$9,143,600.05.

Flow-Based Rate

A flow-based rate would be determined by multiplying each Member Agency's 3-year average flow percentage by the Total Annual Charge.

FY 2025 flow information is below:

Agency	FY 2025 3-Yr Avg Flow	% of Avg Flow
CBBL	365,721,360	52.40%
CSD	307,639,894	44.08%
CSA 53B	24,558,806	3.52%
Total	697,920,060	

The table below represents changing to a flow-based rate.

Agency	FY 2025 Total Annual Charge	Flow Based Total Annual Charge	Difference
CBBL	\$4,343,580.81	\$4,791,393.21	\$447,812.40
CSD	4,369,986.19	4,030,454.33	-339,531.86
CSA 53B	430,033.05	321,752.51	-108,280.54
Total Annual Charge	\$9,143,600.05	\$9,143,600.05	

The flow-based Total Annual Charge would be divided by the number of EDUs each Member Agency reports. The revised sewer user charge, including Replenish Big Bear, per EDU would have been:

Agency	FY 2025 EDU	Flow Based EDU	Difference
CBBL	\$367.67	\$405.58	\$37.91
CSD	\$348.33	\$321.26	-27.06
CSA 53B	\$339.14	\$253.75	-85.39

Straight Rate (No Variable Rate)

A straight rate would eliminate the variable portion of the sewer user charge. It would be calculated by multiplying the Total Annual Charge by the percentage of EDUs reported by each Member Agency. The table below represents changing to a straight rate per EDU with no variable rate.

Agency	FY 2025 Total Annual Charge	Straight Rate Total Annual Charge	Difference
CBBL	\$4,343,580.81	\$4,215,010.02	-\$128,570.79
CSD	4,369,986.19	4,476,180.30	106,194.11
CSA 53B	430,033.05	452,409.72	22,376.67
Total Annual Charge	\$9,143,600.05	\$9,143,600.05	

The Straight Rate Total Annual Charge would then be divided by the number of EDUs each Member Agency reports. The revised sewer user charge, including Replenish Big Bear, per EDU would have been:

Agency	FY 2025 EDU	Straight Rate EDU	Difference
CBBL	\$367.67	\$356.79	-\$10.88
CSD	\$348.33	\$356.79	8.46
CSA 53B	\$339.14	\$356.79	17.65

70/30 Rate (70% Fixed Rate, 30% Variable Rate)

The 70/30 rate would set the fixed and variable portions of the sewer user charge at 70% and 30%, respectively. The table below represents changing to a 70% fixed rate with a 30% variable rate.

Agency	FY 2025 Total Annual Charge	70/30 Total Annual Charge	Difference
CBBL	\$4,343,580.81	\$4,400,468.47	\$56,887.66
CSD	4,369,986.19	4,322,999.35	-49,986.83
CSA 53B	430,033.05	420,132.22	-9,900.82
Total Annual Charge	\$9,143,600.05	\$9,143,600.05	

The 70/30 Total Annual Charge would then be divided by the number of EDUs each Member Agency reports. The revised sewer user charge, including Replenish Big Bear, per EDU would have been:

Agency	FY 2025 EDU	70/30 EDU	Difference
CBBL	\$367.67	\$372.49	\$4.82
CSD	\$348.33	\$344.58	-3.75
CSA 53B	\$339.14	\$331.33	-7.81

Additional Information

Any changes to the current Total Annual Charge, and/or EDU definition or calculation must be adopted by all Member Agencies. Amendments would be needed to Operating Agreement No. 1 and the Payment and Collection Agreement. BBARWA would also need to adopt a new ordinance to incorporate any changes. The ordinance adoption process can proceed concurrently with the necessary amendments to the agreements.

Financial Impact:

The full financial impact is unknown at this time and will be based on the direction of the Governing Board. Costs related to changes to the EDU calculation would be borne by Member Agencies.

Recommendation:

Discussion only. Staff recommends that Governing Board Members engage with their respective agencies to discuss the potential financial impact of both EDU distribution and the overall Total Annual Charge methodology before implementing any changes, ensuring that all financial obligations and responsibilities are clearly understood and appropriately addressed. If the Governing Board chooses, this item can be placed on a future meeting agenda for additional discussion and direction.