**IRWD Residential Water Allocations**

IRWD bills its customers in a tiered rate structure that is based on water allocations which can also be referred to as water budgets. Customers who stay within their allocations will have a lower bill and the costs per unit increase in each tier as the percentage over-allocation increases.

The universal water industry billing unit is a CCF, 100 cubic feet of water, which is equal to 748 gallons.

Monthly allocation includes a fixed component for indoor usage and a variable component based on the evapotranspiration rate for landscape irrigation.

Although the allocations are based on both components, we cannot tell where a customer uses their water because the allocations are not individually metered. Customers are free to make their own choices on how to use their water in order to stay within allocation.

**Outdoor Water Use**

Outdoor water allocations are based on the water needs of the plants.

In an effort to encourage stronger conservation due to the fourth straight year of drought and in order to meet the state mandated water reductions, IRWD changed its outdoor allocations to provide sufficient water to meet the demands of drought tolerant landscaping irrigated with drip or a high efficiency irrigation system.

Allocations are based on:

* Square footage
* Water needs of drought resistant/drought tolerant plants
* High-efficiency irrigation
* Temperature and weather
* Length of the day

The Default square footage is 1300 square feet for a single family residence and 435 square feet for a condo. Additional square footage requires a variance. There is no default outdoor allocation for an apartment.

Things that increase the water needs of the plants:

* Increased temperature
* Longer days
* Decreased humidity
* Active stage of the plant’s growth cycle

Things that decrease the water needs of the plants:

* Decreased temperature
* Shorter days
* Increased humidity
* Rain
* Dormant stage of the plant’s growth cycle

The outdoor allocation is calculated at the end of the billing cycle based on weather and other variable data. The outdoor allocation will change monthly due to these factors.

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| --- | --- | --- |
| **Potable Water** | | |
| **Factor** | **Definition** | **How it is measured** |
| ET | Evapotranspiration-  A combination of evaporation (water loss through evaporation from the soil prior to being absorbed by the plant) and transpiration (water loss from the plant after the water has been absorbed).  This represents the amount of water needed by the plant to remain healthy. | Transpiration rate for each day of the year based on factors such as   * active plant growth stage length of day * season * weather [3 weather stations: coastal, central (Great Park) and foothills]   This is calculated at the end of the month as a sum of the daily ET rates based on the start and end date in the billing period. ET rates are available online and updated weekly.  IRWD maintains a separate weather station in each climate zone to monitor exact wind and weather conditions, including air temperatures, relative humidity, precipitation, solar radiation, and wind direction and speed.  Coastal, Central and Foothill weather station data is electronically transmitted daily to IRWD where it is used in a formula to calculate evapo-transpiration for each climate zone.  ***Prior to July 1, 2015, calculations were based on ET rates for cool season turf***  ***After July 1, 2015, calculations are based on ET rates for drought tolerant plants*** |
| Kc | Crop coefficient-  Properties of plants used in predicting evapotranspiration (ET)  The evaporation and transpiration that could occur if the plant had an ideal unlimited water supply | Most landscape plants are between .57 and .72. IRWD uses a Kc of .5 year round for potable accounts and a variable range of .58-.72 for recycled water accounts to determine the evapotranspiration rate. |
| IE | Irrigation Efficiency-  Irrigation components vary in their ability to maximize the water that is delivered to the root zone of the plant.  The ideal irrigation system will deliver a small amount of water over a long period of time.  Typical sprinkler heads tend to have the lowest efficiency as a larger quantity of water remains on the surface of the ground where it is more susceptible to evaporation. It can be more likely to evaporate before it even makes contact with the ground. Additionally, it can disperse amount of water that is not easily absorbed into the typical soil present in the IRWD service area.  Drip irrigation tends to have a higher efficiency as water is emitted directly into the ground where it is protected from evaporation and the water can be dispersed directly in to the root zone of the plant at a slower rate that is more easily absorbed in to the soil. | 71% for recycled water accounts  85% for potable accounts |
| Square footage | All data is calculated based on the square footage/acreage linked to the account.  Landscape size for residential potable customers is entered as square feet and then calculated as acreage.  There are 43560 square feet in an acre.  To calculate the acreage based on square feet, divide the square feet by 43560.  To convert square feet to acres, multiply the acreage by 43560.  Pools and spas are included in the square footage for landscape due to the evaporation that occurs. |  |
| Conversion Factor | A conversion factor is used in the formula to convert ET data in inches to acres | The conversion factor is 36.3 |

Based on the factors listed above, the allocation for outdoor water usage for each day in the billing cycle is calculated based on the following formula:

ET x Kc x IE x 36.3 x acres

Some homes in the IRWD service area have 2 meters. One meter is a potable line for indoor and domestic uses and the 2nd meter is for recycled water and is dedicated to outdoor irrigation. This results in separate accounts for their household and landscape. There are 2 neighborhoods that utilize recycled water for their landscape irrigation: Shady Canyon in Irvine and Pelican Hill in Newport Coast.

When a customer has a separate recycled water account, they will generally still have the default allocation for potable water associated with their residential account. This is to account for pools and spas that may be part of their property and are connected to the potable water system.

Recycled water accounts utilize the same formula for calculating the allocation however they are based on the water needs of warm season turf with higher Kc and IE factors. Additionally, they have a different rates and tiers.

**Indoor Water Use**

Indoor water use is based on 50 gallons per person per day. This remains fixed regardless of other factors. The allocation for each billing cycle will vary based on the days in the billing cycle.

Each housing type has a default number of people in the residence:

|  |  |
| --- | --- |
| **Type of housing** | **Default number of people** |
| Single Family Home | 4 people |
| Condo | 3 people |
| Apartment | 2 people |

If there are more residents than the default, the customer must apply for a variance and submit documentation to support the resident status of all people in the home. This will need to be renewed annually. Allocations for additional residents are 40 gallons per day per person.

Supportive documentation includes:

* Birth certificates
* School records
* Blank checks with pre-printed name and address
* Income tax returns
* Drivers license
* Lease agreements

Additional variances are available for special circumstances when documentation is provided:

* 24 hour care facilities
* In-home child care centers
* Special medical needs
  + 3 ccf
* Agricultural needs
* Livestock
  + .8 ccf for small livestock (pigs, goats, sheep, miniature horses) or 10 gallons per day
  + 1.6 ccf for large livestock (horses, cows, steer) or 20 gallons per day

All variances can be requested online and require supportive documentation.

**Overall Allocation**

A customer’s total allocation will be based on a combination of factors unique to that residence and will include the following combinations:

* Indoor allocation only (apartments)
* Indoor + Outdoor allocation (standard)
* Outdoor allocation only (recycled water accounts)
* Indoor + variances
* Landscape + variances
* Indoor + Outdoor + variances