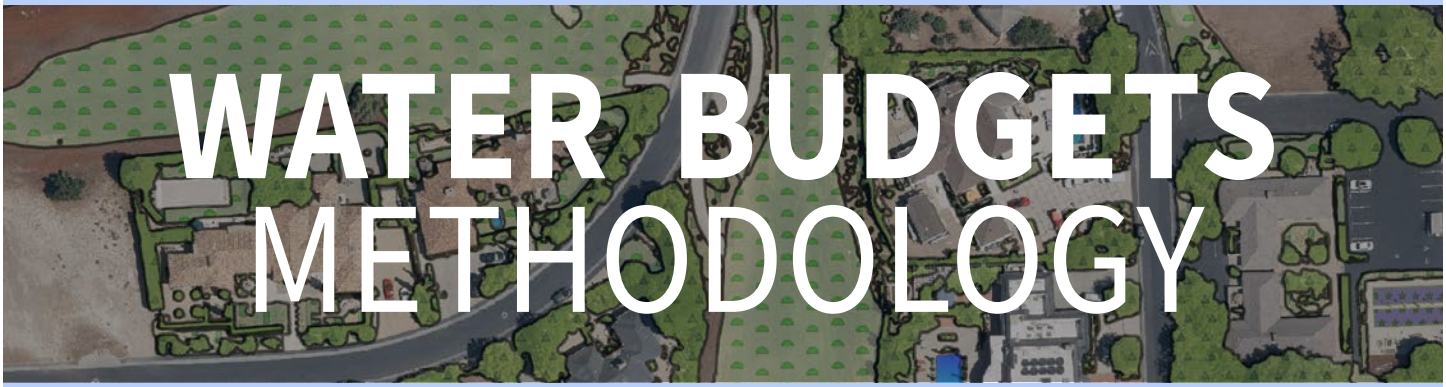

WATER BUDGETS METHODOLOGY

MONTECITO WATER DISTRICT

A Reliable Supply Since 1921

Montecito Water District
583 San Ysidro Road | Santa Barbara, CA 93108

February 2025

February 2025

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LIST OF ABBREVIATIONS AND ACRONYMS

AB	Assembly Bill
AFY	Acre-Foot per Year
AG	Agriculture
Cal-SIMETAW	California Simulation of Evapotranspiration of Applied Water
CIMIS	California Irrigation Management Information System
COM	Commercial
District	Montecito Water District
DWR	California Department of Water Resources
Eppt	Effective Precipitation
ETWU	Estimated Total Water Use
ETo	Evapotranspiration
GPCD	Gallons per Capita per Day
IE	Irrigation Efficiency
INS	Institutional
MFR	Multi-Family Residential
MWELO	Model Water Efficient Landscape Ordinance
PA	Pool/Pond Area
PF	Plant Factor
SB	Senate Bill
SFR	Single Family Residential
State	State of California
Strategic Plan	2022 5-Year Strategic Plan
UWMP	Urban Water Management Plan
UWUO	Urban Water Use Objective
WUCOLS	Water Use Classification of Landscape Species
WUEP	Water Use Efficiency Plan

INTRODUCTION

The Montecito Water District's (District) *2022 5-Year Strategic Plan* identified the goal of managing customer water use, also referred to as customer demand, as a key objective to achieving improved water supply reliability for the community. To meet this goal, the District completed the *2022 Water Use Efficiency Plan* (WUEP) which created a comprehensive conservation program aimed at enhancing demand management through 19 water use efficiency measures such as residential and commercial customer rebates, smart meters and customer portal, demonstration garden, and more. The *2022 WUEP* identified Water Budgets as a tool for the District and customers to track and monitor efficient water use at the individual property level. Since completion of the *2022 WUEP*, the District has introduced numerous customer rebates for mulch, high efficiency indoor appliances, efficient landscaping and irrigation, and landscape retrofits. In September 2023, the District also implemented the smart meter program and customer portal, allowing customers real time access to their water use data and leak alerts. Water budgeting at the individual property level is the next identified step in the suite of tools offered to District customers for managing water use.

This *Methodology* provides a detailed record of the process by which Water Budgets were developed for each property within the District's service area.

BACKGROUND

Customer demands have varied widely over the years, peaking in 2013 at nearly 7,000 acre feet per year (AFY). This spike in demand, timed with the worst drought in recorded history, created an urgent need for decisive action. Facing a water shortage emergency, the District implemented severe demand management measures including customer water use allocations to realign customer water use with its limited water supply availability. These actions successfully reduced annual water demand by nearly 50%, yet these sudden and significant actions jeopardized customer relations. Allocations were repealed in 2017, while other mandatory water use restrictions, consistent with the State's objective of *Making Conservation a California Water of Life*, remained in place and continue today. Customer demands remained relatively stable from 2014 through 2018 (3,500- 4,000 AFY). In 2019 demands began trending upward, reaching 5,200 AFY between late 2020 and mid-2021, a 25% increase over the prior year. Winter rains in 2023 and 2024 eased drought conditions, reduced Customer demands and replenished surface and groundwater supplies. Proactive management of customer demand remains vital ensuring resilience against future droughts, benefitting both the District and its customers.

Water use is not unlimited, and elevated customer demand, as in late 2020 through mid-2021, jeopardizes long term water supply availability. Water use efficiency must be cultivated in conjunction with water supply planning efforts. Climate change and State regulations limit the amount of water available for use annually by urban purveyors. Experts forecast a continual decline in available surface water supplies in California due to droughts of increased frequency, intensity, duration, and additional factors. The District's *Future Demand and Water Supply Options 2020 Update* projects future water shortages even with the District's successful efforts to improve its water supply reliability such as regional groundwater banking, managing the local

groundwater basin and completion of the 50-year Water Supply Agreement with the City of Santa Barbara (acquisition of desalination).

State Regulations on Water Use

In 2009, the State passed Senate Bill X7-7 setting an overall goal, effective 2020, of reducing per capita water use by 20%. As of 2020, the District's water use limit established in accordance with SBX7-7 was approximately 4,540 Acre feet per year, and its *2020 Urban Water Management Plan* demonstrated full compliance with that goal.

In 2018, the California Legislature enacted two key policy bills – Senate Bill 606 (SB 606) and Assembly Bill 1668 (AB 1668) – to implement a new framework for long-term water conservation and drought planning for water suppliers. AB 1668 and SB 606 build on the State's ongoing efforts *Making Conservation a California Way of Life*, including Senate Bill X7-7, creating a new foundation for long-term improvements in water conservation and drought planning. SB 606 and AB 1668 establish guidelines for efficient water use and a framework for the implementation and oversight of the new standards. Among other provisions, the legislation includes establishing urban water use objectives (UWUO) and long-term standards for efficient water use that apply to urban retail water suppliers, such as the District. The UWUO is calculated using state mandated equations to determine the maximum volume of residential, commercial and institutional water sales for each water purveyor. UWUO requirements became effective in 2024 and compliance must be achieved by 2027. An urban supplier that does not meet its UWUO may be required by the State to enact policies and projects that result in a reduction in water use. The District's preliminary reporting indicates it is currently in compliance with its UWUO, however, the UWUO regulations become increasingly restrictive on water purveyors over time, reducing the quantity of water that can be sold to customers, thereby reinforcing the need for an effective demand management program and efficient customer water use.

PURPOSE

Water Budgets are intended to provide customers with a helpful tool to understand what "efficient water use" means for their property. Water Budgets use State standards and the best available data and science to calculate efficient indoor water use based on number of occupants and to calculate efficient outdoor water use based on historic weather conditions and landscaping. When multiple water sources are available, such as District-supplied water and groundwater from a private well, the Water Budget provides a framework for efficient management of total water use. The District's Water Budgets are unique to each property and are not connected to water rates, fees, or charges. This *Methodology* may be updated periodically as new data or methods become available or as climatic conditions change.

WATER BUDGET DEFINITION

A Water Budget is a property-specific determination of the total water required for efficient use indoors and outdoors, and serves as a tool to guide customers in conservation while maintaining landscaping and the semi-rural atmosphere of the community. Water Budgets account for seasonal changes in water use such as irrigation in winter versus summer and provide flexibility for

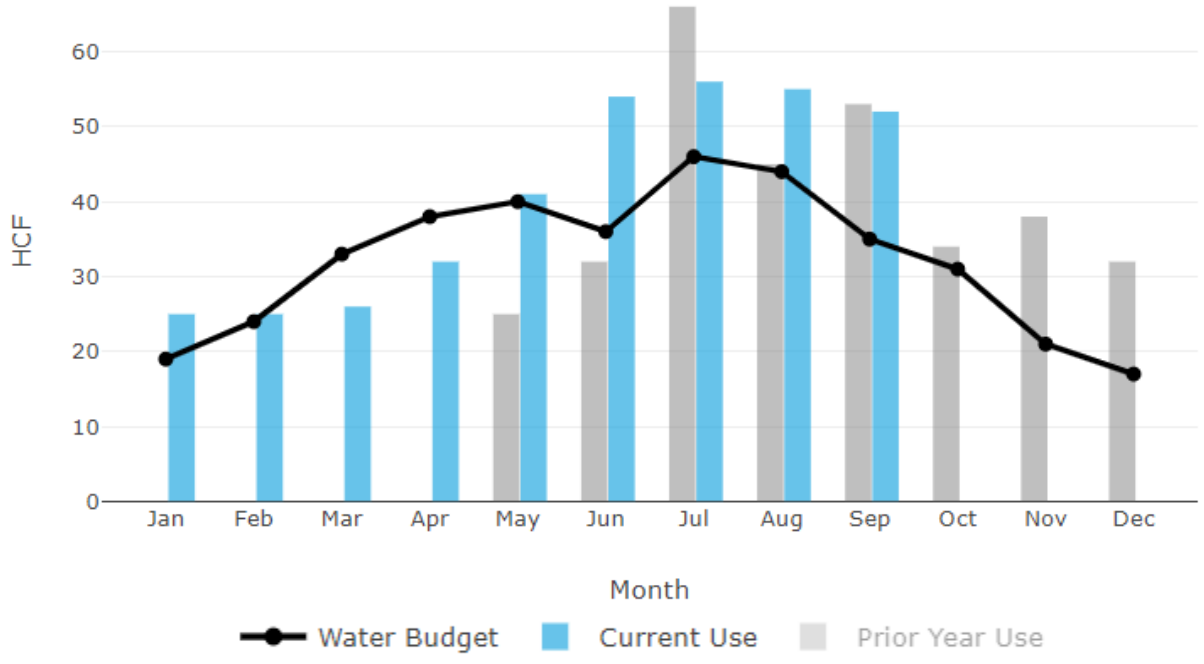
customers to choose how they use water on their property while discouraging water waste and excessive use. In addition to being a useful tool for customer's management of their water use, Water Budgets will also assist the District in achieving compliance with the UWUO regulation.

METHODOLOGY

Water Budgets are an established tool developed and implemented by numerous agencies statewide using aerial imagery and water use equations. The *Methodology* herein is generally consistent with the methods and variables used by other agencies including the State to develop water budgets. Water Budgets consist of the following components:

1. Indoor Budget
2. Outdoor Budget
3. Other Considerations
4. Water Budget Adjustments

A Water Budget reflects seasonal changes of water use, with outdoor use being the primary driver of water consumption. Water use is lowest in winter due to cooler and wetter conditions, and increases in spring as temperatures rise and rainfall decreases. Peak customer demand occurs in summer, aligning with the highest evapotranspiration rates and irrigation needs. The Water Budget tapers off in late fall as temperatures cool and evapotranspiration decreases. The figure below illustrates an example of this seasonal pattern, comparing the Water Budget (black line) with current use (blue bars) and prior year use (gray bars).



INDOOR BUDGET

The indoor budget is the estimate of water needed indoors for uses such as drinking, food preparation, bathing, washing clothes and dishes, and flushing toilets. Indoor use is calculated based on the estimated indoor occupancy. The occupancy or number of residents is multiplied by a daily indoor residential water use standard, or water used per person per day. This number is then multiplied by the number of days within a monthly billing cycle and multiplied by a conversion factor to calculate the total indoor budget. Indoor budgets vary by customer class (e.g. residential, commercial, etc.) and within each customer class. Two different approaches are used to calculate indoor budgets based on the following customer classifications:

1. Residential including agricultural properties with residence(s)
2. Commercial and Institutional

Residential Accounts (SFR, MFR, & AG)

$$\boldsymbol{Indoor\ Budget = Occupancy * Indoor\ Standard * Bill_{cycle} \div 748}$$

Where:

- **Occupancy –** number of residents in a household
- **Indoor Standard –** UWUO Indoor Residential Water Use Standard. The maximum allowable indoor water use in gallons per capita per day (GPCD)
- **$Bill_{cycle}$** – number of days in a billing cycle (typically 30 or 31 days)
- **748** – unit conversion from gallons to Hundred Cubic Feet (HCF)

Occupancy

The District serves approximately 4,260 customer connections categorized as SFR, MFR, and residential AG (agricultural properties containing one or more residences). The 2020 Census data indicates an average household occupancy of 2.37 persons in Montecito, 2.37 in Toro Canyon, and 2.08 in Summerland. However, the District's service area has unique characteristics that complicate population and occupancy estimates, as detailed in the District's *2020 Urban Water Management Plan* (UWMP). Many households employ full-time or part-time staff, such as caretakers, nannies, and property managers, who are not counted in census data. Additionally, the area has a significant number of property owners whose primary residence is elsewhere whereby not being included in the local population statistics. The District's *2020 UWMP* uses an average occupancy of 2.23 persons per household, based on data from the Santa Barbara County Association of Governments 2040 Regional Growth Forecast.

When calculating a water budget, an occupancy between 2 to 4 persons per household is commonly used across the state to capture typical residential indoor water use patterns. This range provides flexibility to account for varying household sizes, seasonal occupancy, and uncounted support staff, while aligning with statewide standards for indoor water use planning. Many water utilities

use an occupancy value of 4 persons per household for SFR customers to account for full-time occupancy and ensure conservative planning. Examples of utilities with water budgets that use an occupancy of 4 include Irvine Ranch Water District, Monte Vista Water District, Santa Margarita Water District, and Moulton Niguel Water District. Others, such as Western Municipal Water District, Las Virgenes Municipal Water District, and Rancho California Water District, use an occupancy of 3. For MFR customers, agencies including Irvine Ranch Water District and Western Municipal Water District use an occupancy of 2 persons per household to reflect smaller average unit sizes and lower per-unit occupancy rates.

Considering these factors and regional trends, the District has selected an occupancy of 3 persons per household for SFR and residential AG customers. For MFR customers, an occupancy of 2 persons per unit is selected, reflecting smaller residential unit and typical occupancy patterns. These values are supported by localized census data, consider the presence of uncounted occupants, and are consistent with standard practices among other water utilities.

Occupancy for SFR (including SFR within AG) = 3 persons per household

Occupancy for MFR = 2 persons per household

Indoor Standard (gallons per capita per day or GPCD)

The indoor residential water use standard is the maximum allowable indoor water use per person per day outlined by the state's UWUO regulation. In accordance with that regulation, the indoor residential water use standard is 55 GPCD through 2024, 47 GPCD through 2029, and 42 GPCD 2030 onward. For consistency, the District uses the same standard for the purpose of calculating indoor budgets.

Indoor Residential Water Use Standard = 47 GPCD

Commercial and Institutional

The District serves approximately 266 commercial and institutional (COM-INS) customer connections. These customers include golf courses, schools, restaurants, retail stores and others. Establishing water budgets for these customer classes is challenging because indoor use can vary widely depending on the specific use of the property.

The methodology used for estimating indoor use by COM-INS customers involved analyzing water usage during the months of January, February, and March of the years 2017, 2019 and 2023. These months and years were selected because they were exceptionally wet winter months where the majority–if not the entirety– of the water use occurring is from indoor use. Use records for all COM-INS customers, excluding anomalies such as accounts with larges leak, pool fillings, etc., were reviewed to calculate the mean, median, maximum, 80th percentile, and 90th percentile usage

for each account. The three-month usage values were multiplied by 12 to create annualized estimates, which were then compared to the 3-year and 5-year annual averages for validation.

The 90th percentile was selected as the most accurate representation of annual indoor use, as it aligned closely with historical annual usage, while accounting for variability and excluding extreme outliers. Compared to other metrics, such as the mean, median, and 80th percentile, the 90th percentile provided a conservative estimate of indoor use. The median significantly underrepresented annual use due to its reduced sensitivity to higher water use accounts. The 90th percentile value for each customer is then applied uniformly across all months as their estimated indoor use.

$$\boldsymbol{Indoor\ Budget = Historic\ Indoor\ Usage_{90}}$$

Where:

- $\boldsymbol{Historic\ Indoor\ Usage_{90}}$ – the 90th percentile of indoor monthly water usage from January, February, and March from 2017, 2019, and 2023.

Indoor Budget for COM-INS accounts = 90th percentile of select winter months

OUTDOOR BUDGET

The outdoor budget is the estimate of water needed for the irrigation of gardens, lawns, and other plantings, and for other uses such as swimming pools, ponds, etc. The District estimates that approximately 75% of water used by District customers is used outdoors. Development of the outdoor budget includes the use of aerial imagery to identify and differentiate various land uses on a property and quantify the areas of each use. Initial aerial imagery was captured and obtained by the State of California in 2018 (12-inch resolution) and used to calculate the 2018 Urban Water Use Objective (UWUO). Through consultant Eagle Aerial, the District captured higher-resolution aerial imagery (3-inch) in August 2022, which allows for better refinement of each use area. The higher resolution imagery was used for the analysis.

Outdoor water use in California for new development and retrofitted landscapes is governed by the *Model Water Efficient Landscape Ordinance* (MWELO). MWELO was produced by the California Department of Water Resources (DWR) for use by local building and planning departments, water providers, designers, builders, and applicants to comply with the 2015 MWELO, Chapter 2.7, Division 2, Title 23, California Code of Regulations. The District currently reviews new development and retrofitted landscape projects in accordance with MWELO standards. According to the *MWELO Guidebook*, "The MWELO was created by the California DWR as a model for local agencies to enforce minimum standards in landscape design, construction, and management". MWELO calculates the amount of water the landscape needs based on plant and irrigation types and is referred to as the Estimated Total Water Use (ETWU). The ETWU formula for outdoor water use is as follows:

$$ETWU = (ETo - Eppt) * 0.62 \left(LA * \frac{PF}{IE}\right)$$

Where:

- **ETo (Evapotranspiration) -** the process by which water is transferred from the land to the atmosphere by evaporation from the soil and other surfaces and by transpiration from plants, expressed in inches.
- **Eppt (Effective Precipitation)** – the portion of total precipitation which becomes available for plant growth.
- **0.62** – conversion factor from inches to gallons per square foot.
- **LA (Landscape Area)** – total area of irrigated landscape, in square feet.
- **PF (Plant Factor)** – a number from 0 to 1.0 that when multiplied by ETo, estimates the amount of water needed by a given plant species.
- **IE (Irrigation Efficiency) -** The percentage of irrigation water taken up by plants versus the total water applied.

The District's formula above builds on the MWELO formula by using general categories to define Plant Factors used, i.e. low, medium and high water use plant types, and incorporates additional landscape areas that receive a budget, i.e. pools, canopy, and horse corrals, rather than using a single Plant Factor for all plant types. The District determined that irrigation needs are more accurately described by three categories including: turf (grass) areas, trees/shrubs/other landscape areas, and orchard areas. Each category has a distinct water demand and therefore a distinct plant factor. The Plant Factor (PF) variable therefore includes:

$$PF = PF_{turf} + PF_{tree} + PF_{orchards}$$

Where:

- PF_{turf} – water needs factor for turf
- PF_{tree} – water needs factor for tree canopy, ground cover, and horse corrals
- $PF_{orchard}$ – water needs factor for orchards and other agriculture

The incorporation of pools and lined ponds is important to the overall Water Budget. Their inclusion leads to a more accurate estimation of total water use on properties. The revised formula is as follows:

$$Outdoor\ Budget = (ETo - Eppt) * 0.62 \left(LA * \frac{PF_{turf+tree+orchard}}{IE}\right) + (0.62 * PA * Evap)$$

Where:

- **PA (Pool/Pond Area) –** the total surface area of pools and/or lined ponds, in square feet
- **Evap (Evaporation) –** the total monthly evaporation in inches per month

Evapotranspiration (ETo)

Evapotranspiration (ETo) is the accepted industry standard for determining the total water lost to the atmosphere from the land surface through evaporation (water lost as steam into the atmosphere) and transpiration (water lost to the atmosphere through vapor plant leaves). ETo is affected by many climate factors such as wind, temperature, solar radiation, humidity and more, and therefore varies by location. ETo is described as inches per month or per year and represents the amount of water needed for a region. The California Irrigation Management Information System (CIMIS) is a resource published by the California Department of Water Resources (DWR) and accepted as the most reliable source of ETo data for the State. The long-term average ETo for most of the South Coast including the District's service area is 46.6 inches per year, which varies by month (lower in wet/cool months and higher in dry/warm months). The CIMIS station nearest the District is the Municipal Golf Course in the City of Santa Barbara. This data was used to calculate the measured 3-year average ETo for the period of 2019 to 2021, which is 46.2 inches per year.

Evapotranspiration = 3-year average ETo of 46.2 inches per year

Effective Precipitation (Eppt)

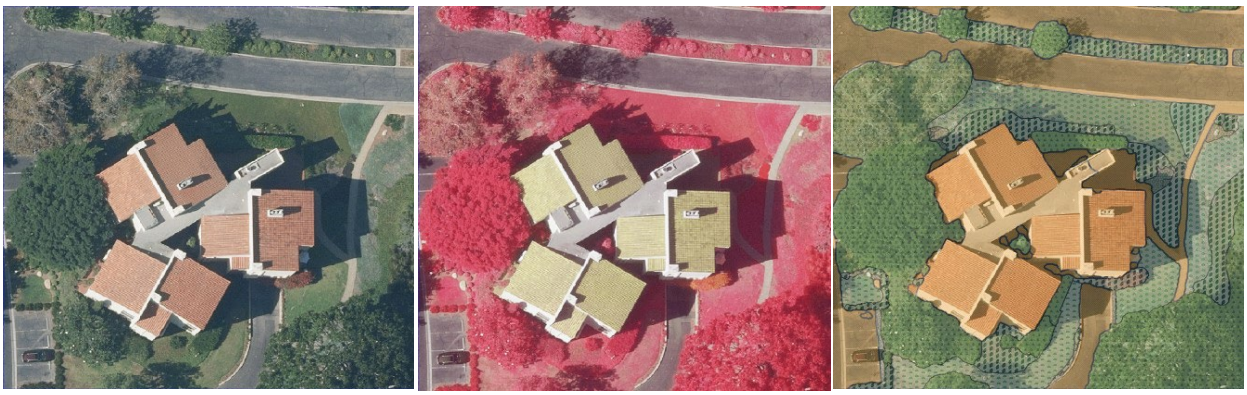
Effective precipitation (Eppt), or "usable rainfall" is the portion of total annual precipitation which becomes available for plant growth. It is affected by soil type, topography, land cover type, and rainfall frequency, intensity, and duration. There are two ways to calculate this value; 1) using the DWR California Simulation of Evapotranspiration of Applied Water (Cal-SIMETAW) soil water balance model or 2) 25% of annual precipitation. Either method can be used with MWELO when calculating the Estimated Total Water Use (ETWU) to account for the proportion of water that does not reach the plant root zone. The District has records dating back to the early 1920's of monthly precipitation at the District Office, located at 583 San Ysidro Rd. Average annual precipitation at the District Office is 19 inches per year where 25% of annual precipitation is 4.75 inches per year.

Effective Precipitation = 4.75 inches per year

Landscape Area (LA)

Landscape Area (LA) includes any portion of a property with landscaping that is actively irrigated. Landscape area excludes building footprints, driveways, and other hardscapes such as decks and patios. Landscape area also excludes any vegetated areas that are not actively irrigated. The District used high-resolution aerial imagery to calculate landscape areas. This method is used by the State to provide landscape area estimates to urban water purveyors statewide. Computer based machine learning algorithms analyze pixels from the aerial imagery to determine if land is irrigated and to distinguish between different types of landscapes. The District's mapping consultant Eagle Aerial analyzed 4-band 3-inch resolution aerial imagery from August 2022. The spectral bands analyzed include three bands in the visible range (red, green, blue) and one band beyond the visible

light range (near- infrared). With this imagery various area uses including but not limited to turf and plants, tree canopy, agriculture, pools, and hardscapes were identified. The figure below is an example of the various layers of imagery used to classify land. The mapping effort produced a comprehensive listing of land use types within the District service area.



Field verifications were performed for properties, including the District Office, Bella Vista Treatment Plant, Doulton Treatment Plant, and three reservoir sites to confirm the mapping results aligned well with conditions on the ground.

Plant Factors (PF)

A Plant Factor (PF) is a decimal factor that when multiplied by ETo estimates the total amount of water a plant needs. PF's are defined by the *Water Use Classification of Landscape Species* (WUCOLS) plant database (www.ucanr.edu/sites/WUCOLS/) developed by the California Center for Urban Horticulture (CCUH). WUCOLS is the industry standard used when designing a water-efficient landscape with climate appropriate plants to comply with MWELO. The WUCOLS database provides the plant water use classifications used for implementing MWELO. WUCOLS provides evaluations of the irrigation water needs for over 3,500 taxonomic plant groups used in California landscapes. Applying a PF to the various use types identified in the aerial mapping further differentiates the amount of water needed by landscape area. The aerial mapping did not identify each individual plant type, but rather landscape groups. Plant factors are used to distinguish between (1) turf (grass) (2) agriculture and (3) trees, shrubs, and other landscaping on each property. MWELO defines the PF categories as follows:

- 0 to 0.1 = Very low water use (e.g. *Agave* spp., California lilac, cactus, toyon)
- 0.1 to 0.3 = Low water use (e.g. *Aloe* spp., pineapple guava, *Bougainvillea* spp.)
- 0.4 to 0.6 = Moderate water use (e.g. loquat, bamboo, *Pittosporum* spp.)
- 0.7 to 1.0 = High water use (e.g. red fescue, willow, redwood, *Rhododendron* spp.)

Turf (grass)

Turf (grass) Plant Factors are defined by Harivandi et al. (2009) and range from 0.4 to 0.6 for warm season grasses such as Bermuda, kikuya, and St. Augustine, and from 0.6 to 0.8 for cool season grasses such as fescue, ryegrass, and bluegrasses. The lower end of these ranges provides sufficient water to maintain adequate appearance with less growth and the high end of these ranges

provides water needed for most efficient growth, maximum quality, and best appearance. While the majority of grass within the District's service area is cool season grass, many properties have warm season grasses. Using a turf plant factor of 0.6 provides for adequate appearance of cool season grasses and efficient growth, maximum quality, and best appearance for warm season grasses according to WUCOLS.

Several institutional properties with large areas of turf have warm season grass (low water using) requiring a plant factor of 0.4 to 0.6. Using a turf plant factor of 0.5 for golf courses and the cemetery provides for more than "adequate appearance" for warm season grasses.

Plant Factor for Turf = 0.6 for all customers

except 0.5 for golf courses and cemetery

Agriculture

The District has approximately 44 agricultural accounts and numerous residential properties with small areas of agriculture. According to customer data submitted annually to the District, the vast majority of agriculture within the District's service area consists of avocados and citrus such as lemons, limes, and oranges, which have a plant factor range of 0.4 to 0.6. A small number of stone fruits such as cherries, peaches, plums and apricots exist in the community and are also moderate water using (plant factor from 0.4 to 0.6). Using an agriculture plant factor of 0.5 provides for adequate irrigation needs, while balancing the need of the different agricultural crop types.

Plant Factor for Agriculture = 0.5

Trees, Shrubs and Other Landscaping

The "trees, shrubs and other" category includes plants with plant factors ranging from 0.1 to 0.5 in accordance with WUCOLS. Of the mapped areas identified as irrigable, this category is by far the largest within the District service area. This category accounts for all non-turf and non-agricultural irrigated plants. Landscape plans and efficient water use calculations, prepared and submitted to the District by landscape architects for 38 new and re-development projects in Montecito and Summerland in 2023/24 were reviewed. These calculations use the MWELO standards. The proposed plant palette for each property was quantified by a cumulative single plant factor consisting of the weighted average of all proposed plant factors within the landscape plan. The minimum calculated plant factor was 0.1 and the maximum calculated plant factor was 0.36. The average plant factor for all non-turf, non-agricultural plants was 0.24, which means, on average, landscape architects are proposing landscapes for new and redevelopments that are using a plant factor of about 0.24 for this category. For this reason, "trees, shrubs and other" plant factor of 0.3 was selected. A factor of 0.3 accounts for new developments at 0.24 and properties with existing landscaping that may have plants with a higher plant factor. In addition, trees, shrubs,

and other landscaping plant factor of 0.3 aligns well with historic recorded water use. Due to the significant landscape area within this category, a minimal change in this plant factor has a significant impact on the resulting water need and subsequently the Water Budgets.

Plant Factor for Trees, Shrubs and Other Landscaping = 0.3

Horse Corrals

The Department of Water Resources (DWR) allows agencies to account for horse corrals or other animal exercise arenas as irrigated area, given that most corrals require water for dust control. The District has several properties with corrals and the areas for these corrals can be included in the irrigable areas for each property.

Treatment of Horse Corrals = Included in the "Other/Shrub Plan Factor" category

Irrigation Efficiency (IE)

Irrigation Efficiency (IE) is a percentage of the water absorbed by plants versus the total water applied to the plants. IE accounts for imperfections in irrigation systems and application of irrigation water to plants. Irrigation water not used by a plant is lost through overwatering, evaporation, and/or runoff. MWELO recommends an irrigation efficiency value of 0.75 for spray irrigation (sprinklers) and 0.81 for drip irrigation. While MWELO sets the IE, site conditions including wind and topography may lower the actual IE. Within the UWUO framework, this value is called a Landscape Efficiency Factor (LEF) or the standard for efficient residential outdoor use. It is an aggregate value that ramps down over time, thereby directing landscape efficiency. The state UWUO, including other agencies implementing water budgets, use an IE of 0.8 or 80%. Using a value of 0.8 aligns with the state UWUO and accounts for various irrigation system setups and management efficiencies.

Irrigation Efficiency (IE) Factor = 0.8

Evaporation from Pools and Lined Ponds

Pools and lined ponds are subject to evaporation and must be refilled or topped off periodically. There are no known published sources of historic evaporation from water surfaces inside the District's service area. The industry accepted method to calculate evaporation from water surfaces uses evapotranspiration and adjustments by published factors (Howe et al 2015). Using this method, the total evaporation from 2019 through 2021 for water surfaces for the nearest station measuring evapotranspiration, located in the City of Santa Barbara, is 43.0 inches per year. This value is comparable to measured evaporation from Lauro Reservoir of 50.4 inches (2021) and 45.4 inches (2022).

Evaporation from Pools and Lined Ponds = 43 inches per year

OTHER CONSIDERATIONS

Private Groundwater Wells / Alternative Water Sources

There are many private groundwater wells within the District service area. These wells provide an alternative water source primarily for irrigating landscaping and in some cases for domestic purposes.

The Montecito Groundwater Sustainability Agency (GSA), in partnership with the District, maps the locations of private groundwater wells and tracks the operational status of private groundwater wells. As part of the Water Budget process, the operational status of a well was simplified as either "active" or "inactive." Understanding whether a private groundwater well is active, or inactive helps contextualize how water use aligns with the established Water Budget for a given property.

Water Budgets represent the total efficient water use for a property and remain constant regardless of the sources of water used. Any water use exceeding the Water Budget, whether from District supplies, a private well, and/or another source, is recognized as surpassing efficient water use.

WATER BUDGET ADJUSTMENTS

The intent of the Water Budgets is to be as precise as possible and to represent as accurately as possible the actual water requirement for every property. In the event that a Water Budget requires modification to better represent activities on the property, a Water Budget Adjustment may be initiated by the customer. Examples of adjustments include:

- **Change in Residential Occupancy** – this adjustment allows for changes to the number of persons living at a residence.
- **Change in Landscaping** – this adjustment allows for changes to the Landscape Area used by the District to determine a property's outdoor budget. Customers may be required to provide landscape drawings and may require an onsite visit by the District. An example of a change in landscaping warranting an adjustment is the addition or removal of a pool, hardscape, structures, etc.
- **Medical Needs or Licensed Care Facility –** this adjustment provides residents with additional water requirements due to in-home medical devices medical conditions, or in-home care facilities with an additional volume of water per month determined on a case-by-case basis.
- **Use of Alternate Water Source –** while this does not adjust the Water Budget itself, the availability of an alternate water source is indicated, and may provide a better understanding of water use on a property.

SUMMARY

A Water Budget is a property-specific determination of the total water required for efficient use indoors and outdoors, and serves as a tool to guide customers in conservation while maintaining landscaping and the semi-rural- atmosphere of the community. They account for seasonal changes in water use such as irrigation in winter versus summer and provide flexibility for customers to choose how they use water on their property while discouraging water waste and excessive use. Water Budgets are a tool to assist District customers with the management of water use on their property and will assist the District in complying with the UWUO regulation. Additionally, the use of Water Budgets better positions the District to respond to a reduction in available water supplies, such as a water supply shortage or emergency, by providing an equitable means of reducing water demand more quickly. Water Budgets are not connected to the District's water rates, fees or charges.

Table 1 provides a summary of the variables described above and the selected value for each variable.

Table 1 – Summary of Water Budget Factors

	INDOOR		OUTDOOR							
Class[1]	**Occupancy**	**GPCD[2]**	**ETo[3]**	**Landscape Areas**	**Eppt[4]**	**Turf Plant Factor**	**AG. Plant Factor**	**Shrub/ Other Plant Factor**	**IE[6]**	**Pools/Lined Ponds Evap**
SFR	3	47	46.2 inches per year	Per Eagle Aerial mapping	4.75	0.6 ------ 0.5 (GC[5] and Cemetery Only)	0.5	0.3	0.8	43.0 inches per year
MFR	2									
AG	3 per dwelling									
Commercial	2017, 2019, 2023 January to March 90th Percentile Usage									
Institutional										

[1] Non Potable usage will be accounted for in a property's specific water budget
SFR = Single Family Residential
MFR = Multi Family Residential
AG = Agricultural
[2] GPCD = Gallons per Capita per Day
[3] ETo = Evapotranspiration
[4] Eppt = Precipitation Efficiency
[5] GC = Golf Courses
[6] IE = Irrigation Efficiency

REFERENCES

California Center for Urban Horticulture. (2024). *Water Use Classification of Landscape Species (WUCOLS)*. University of California, Davis. https://ccuh.ucdavis.edu/wucols

California Department of Water Resources (DWR). (2015). *Model Water Efficient Landscape Ordinance*. https://water.ca.gov/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Model-Water-Efficient-Landscape-Ordinance

California Natural Resources Agency et al. (2022). *California's Water Supply Strategy: Adapting to a Hotter, Drier Future*. https://resources.ca.gov/-/media/CNRA-Website/Files/Initiatives/Water-Resilience/CA-Water-Supply-Strategy.pdf

Harivandi, A. M. (2009). *Managing Turfgrass During Drought.* Oakland: University of California Agriculture and Natural Resources Publication 8395, https://anrcatalog.ucanr.edu/pdf/8395.pdf

Howes et al. (2015). *Evapotranspiration from natural vegetation in the Central Valley of California: monthly grass reference-based vegetation coefficients and the dual crop coefficient approach*. Journal of Hydrologic Engineering 20.10 (2015): 04015004.

County of Santa Barbara. *Montecito Community Plan*. (1995). Resource Management Department. https://www.countyofsb.org/931/Montecito-Community-Plan

Montecito Groundwater Basin Groundwater Sustainability Agency (GSA). (2023). *Montecito Groundwater Basin Groundwater Sustainability Plan*. https://montecitogsa.com/doc/7530/