

FACT SHEET ON FRAMEWORK RESIDENTIAL OUTDOOR OBJECTIVE

Overview

SB606 and AB1668, passed in 2018, intend to “make water conservation a California way of life” by providing a framework for water conservation and efficiency. The bills direct state agencies Department of Water Resources (DWR) and State Water Resources Control Board (SWRCB) to develop overall water efficiency targets for each retail water agency (over 3,000 connections) based on the combination of indoor water use, outdoor water use, and water loss. This FAQ's document is focused on the outdoor water use component, and specifically single family- and multi-family residential. A water use efficiency standard will also be established for CII dedicated irrigation meter accounts. This FAQ does not address the CII landscape standard. For more information about SB 606/AB 1668 visit CalWEP.org.

CalWEP is committed to responding to our members' needs and working with both DWR and the contractor conducting the state-wide analysis for DWR, Eagle Aerial Solutions, to ensure agencies have access to the resources they need to prepare, assess, implement, and comply with these new outdoor water use regulations. This FAQ will be updated as there are more developments related to this objective.

FREQUENTLY ASKED QUESTIONS

How will each agency's outdoor objective be calculated?

An agency's outdoor target (aka “water budget”) will be calculated using the formula below. Water budgets are being assessed at the parcel level for both single family residential and multifamily residential, however, an agency's outdoor targets will be provided as an aggregate of all parcel budgets.

$$\text{Outdoor Target} = (\text{Annual Reference Evapotranspiration (ETo)}) \times (\text{Landscape Area}) \times (\text{Evapotranspiration Adjustment Factor (ETAF)})$$

- Evapotranspiration Adjustment Factor or “ETAF”: a factor used to adjust ETo for a specific plant type and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape. (The Model Water Efficient Landscape Ordinance (MWELO) uses ETAF to establish water budgets for landscapes. The ETAF for this regulation has not been determined yet.)
- Reference Evapotranspiration or “ETo”: the total volume of water transpired by cool season turf grass maintained at 4-6” for a specific location and measured in inches. [Click here to find your service area's ETo value.](#)

Measurement and Classification

What are the different classifications used for landscape measurement?

The aerial assessment considers 27 types of surfaces and organizes them into the following classifications:

- *Class 1- Irrigated* – turf, trees, landscape
- *Class 2 - Irrigable-not irrigated (currently)* – land that is likely intended to be irrigated but isn't currently such as brown lawns with less than 60% visible green, trees surrounded by brown lawn, agricultural areas like small orchards, mulched areas without plants, bare soil
- *Class 3 Not Irrigable* – hardscape and undeveloped land including roads, driveways, decks, artificial turf as well as natural open landscape with native vegetation

Note that classification takes a top-down approach, where trees are prioritized over what might be directly below the canopy.

How will DWR measure an agency's landscape area?

The measurement of the landscape area involves aerial surveys and highly sophisticated remote sensing analysis to determine the amount of irrigated and irrigable landscape area for each water agency's service area. DWR is contracting with Eagle Aerial and Quantum Spatial to conduct the study. The regulation will rely on total irrigable area measurement for the base of the water budget calculation.

What resolution imagery is the analysis based on?

The imagery being used in the study has a 1-foot pixel resolution. This means that each pixel of digital, orthorectified imagery, equals 1 square foot of land on the ground.

When was the aerial imagery taken?

DWR's analysis are largely based off of late-summer 2018 imagery. Some of the early pilots were analyzed with 2016 data. The early pilots will be re-run with 2018 imagery to assess differences.

How are the parcel classification (residential, commercial, etc.) and boundaries determined and measured?

All parcel information is based off publicly available county assessor data for each county in California.

How will the offset between parcel boundaries and imagery be handled?

DWR is working on sensitivity analysis to assess if the offset will significantly impact landscape area determinations.

How are parkway strips measured?

Currently, DWR does not intend to include parkway strips. DWR is working on sensitivity analysis to assess the impact of this.

How will DWR account for the fact that measurements from aerial imagery underestimate the measurement of sloped land?

FREQUENTLY ASKED QUESTIONS, *continued*

It is correct that aerial measurements do underestimate the area measurement on slopes. This underestimate is only significant for very steep slopes which typically are not irrigated. DWR will be conducting to a sensitivity analysis for communities with large areas of developed hillsides.

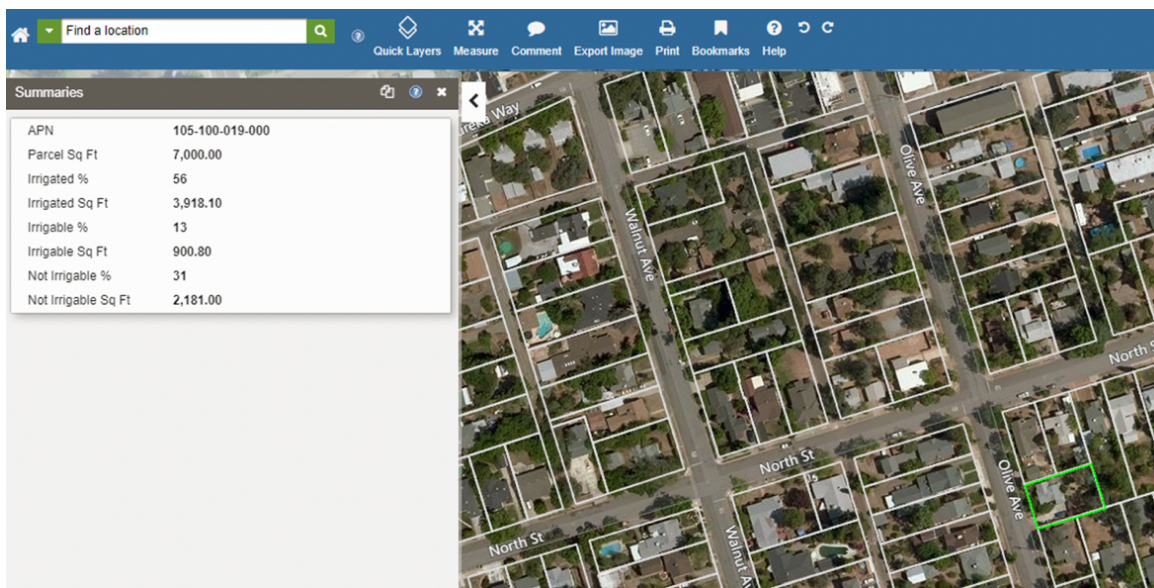
Validation and Verification

How is the landscape classification validated?

For this statewide project, the team has committed to a 95% accuracy rate at the water agency level. In order to reach such a high level of accuracy, several validation processes are carried out not only by the Eagle/Quantum team, but also by DWR and an additional consulting firm, Formation Environmental (FE). Within each water agency's service area, a statistically based number of residential parcels are selected at random and run through a validation process first by the Eagle/Quantum team. The same parcels are then run through another independent validation process by DWR and Formation Environmental. Any found differences in the classification results are reconciled between all teams. The learned information from these processes are then applied to the classification models and used throughout the analysis where appropriate. Note that classification errors are calculated in area and units of square feet.

What kind of data will each agency receive from DWR?

DWR will be providing residential landscape area measurement data to every retail urban water agency in the state. The data will be provided in tabular format and will be accompanied by aerial imagery hosted on a verification portal (see screen shot below). In the portal, staff will be able to see the total square feet of irrigated, irrigable-not currently irrigated, and not-irrigable area at a water agency and residential parcel level. While agencies will be able to retain the tabular data permanently, they will only be able to access the associated aerial imagery and verification portal for a 6-month period to review their agency's data.



FREQUENTLY ASKED QUESTIONS, continued

When will I have access to the verification portal?

As DWR releases the final tabular data to each water agency, access to the verification portal will also be made available in parallel at no cost to the water agency for 6 months.

What will I be able to do in the verification portal?

The Verification Portal was designed as a viewing platform that allows the user to see the tabular results in GIS environment. A few simple tools are available (measuring, bookmarks, notes) for the user to perform internal QC of the results. It is important to note that the Verification Portal is not a communication channel with DWR. Measurements, bookmarks or notes made within the portal will not be reviewed by DWR.

How often will this analysis be updated?

DWR budget covers analysis for the initial measurement. Several pilot agencies were analyzed on 2016 data and DWR plans to re-run these pilots on 2018 data and use a sensitivity analysis to assess any adjustments. Based on the data changes, DWR may request budget to do more aerial imagery analysis on an on-going access. However there currently is no funding to obtain additional imagery in the future.

Additional FAQs

Will water agencies get credit for using potable reuse for irrigation?

Legislation provides a bonus credit for potable reuse. For more information, see [WateReuse's informational factsheet](#) that covers this issue.

How will commercial, industrial and institutional (CII) dedicated water meters be handled?

Dedicated irrigation water meters will be included in an agency's overall target through a commercial, industrial and institutional landscape objective, not within the residential outdoor objective. DWR is not able to determine the area served by dedicated irrigation meters. Water agencies will be required to identify which dedicated water meters serve CII properties. DWR will be setting standards for the size of landscape included in this measurement. Agencies will need to report this data to DWR by January 2024 in their annual water use reports. The data they will report will need to include the number of dedicated CII accounts, the landscape area associated with accounts, and water use to those dedicated irrigation accounts.

How will properties that irrigate using groundwater be handled?

To date, DWR has not run into a significant number of self-supplied lots. DWR is interested in working with specific agencies that would experience a significant impact. Some properties have both private groundwater wells and municipal supplies to irrigate their land. DWR is currently assessing how to approach this.

Why isn't the imagery going to be available to the public in perpetuity?

The state currently does not have funding to provide the imagery in perpetuity. However, water agencies have expressed an interest in acquiring aerial imagery of their service areas for various reasons. Discounted imagery is available for purchase directly from Eagle Aerial Solutions. It is the same imagery that DWR is using for these

FREQUENTLY ASKED QUESTIONS, continued

regulations. Purchasing this data is not mandatory for compliance and is completely optional. The cost per agency is \$750 plus \$6 for each square mile over 125 square miles. Interested agencies should contact Jaz Molloy from Eagle Aerial Solutions directly at JMolloy@eagleaerial.com.

Other Resources for CalWEP Members

- [MyCalWEP Framework Resource Hub](#)
- [CalWEP's SB 606/AB 1668 FAQ](#)
- WaterView Portal Subscription FAQ (coming soon)
- Landscape Budgets Resources (coming soon)