

BUILDINGS

of Southern California

MAINTENANCE & MANAGEMENT

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APARTMENT

6 YEARS ANNIVERSARY

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PROPERTY MANAGEMENT

SOPHISTICATED WIRELESS WATER METER & LEAK DETECTION SYSTEMS

HELPING OWNERS COMPLY WITH
NEW CALIFORNIA LAW MANDATING
WATER SUBMETERING IN MULTI-UNIT
BUILDINGS

By Don Millstein, President, H2O Degree



Water has always been a critical concern in California. So far this year, 76% of the parched state is in a drought. Therefore, it's puzzling that most California apartment and condo dwellers are unaware of how much water they use in their individual units. A landmark law called California State Senate Bill SB 7, which went into effect on January 1st, 2018, finally addresses this disconnect.

Senator Lois Wolk (D-Davis) authored the legislation that mandates submetering to track tenants' individual water usage in multi-unit buildings. "Eighty percent of 15.6 million Californians living in apartments or other multi-family housing facilities are not billed for their water use, meaning nearly a third of the state's population doesn't know how much water they're using or how much they are charged based on their use," she said. "Given the extent of the drought and the need for greater water conservation in California, all of the state's residents should be armed with the knowledge of how much water they're using to help them reduce their water waste."

WHAT IS CALIF. SENATE BILL SB 7?

Senate Bill SB 7 encourages responsible water use and conservation by requiring water meters and submeters in new apartment and other multi-family residential buildings. It requires owners of multi-unit rental properties constructed after January 1, 2018, to provide residents with accurate information about the volume and cost of their water use through their own individual submeters. The bill also requires residents to be billed for water based on actual usage rather than by estimation or other methodology.

Many organizations and agencies supported the bill's passage, including: the UMCA (Utility Management & Conservation Association), the California Building Industry Association (CBIA), the California Association of Realtors, the Western Center on Law & Poverty, the Sierra Club, and the California League of Conservation Voters

Key points about SB 7:

- Signed by Governor Jerry Brown in Sept. 2016



H2O Degree manufactures a broad line of wireless mesh, radio-based submetering and leak detection systems that measure individual apartment or condo use of water, domestic hot water energy, boiler and chiller energy, electricity, gas and BTUs. The company also offers Green Thermostats which track energy use and apartment temperature while allowing tenants and property owners to set temperature set-points and schedules, adjust set-back temperatures when tenants are away or asleep and report HVAC maintenance issues. For more information contact H2O Degree at info@h2odegree.com or call (215) 788-8485.

- SB 7 - Chapter 623 requires submetering in all new construction multi-family dwellings after Jan. 1, 2018.
- The bill is based on actual volumetric usage
- Leaks must be repaired by management within 21 days
- Goal is to hold tenants accountable and encourage conservation while providing consumer protection

Properties that are exempt from installing submetering per SB 7 (section 1954.219) include:

- Long-term health care facilities
- Low-Income Housing
- Residential care facilities for the elderly
- Housing at a place of education
- Time share properties

WHAT IS SUBMETERING?

SB 7 specifies the use of submetering since it finally offers property owners/managers a proven

method for accurately assessing how much water is used in each individual unit.

Submetering is defined as monitoring utility consumption after the main utility meter coming into a building. Submeters are installed on individual apartments and/or loads after the main utility meter. Traditionally, buildings previously had one “master” meter installed by the utility that tracked water usage. When it came time for billing tenants, water-use costs were simply included as part of the rent or were allocated based on an estimate such as square footage, units, bedrooms, etc., a practice called RUBS (Ratio Utility Billing System).

Submeters are installed to monitor water usage for each individual apartment. This gives building owners and managers both visualization and control of water usage. By billing tenants for their individual usage, tenants are held accountable for higher consumption or rewarded for conservation depending on their water bills. Wireless submetering systems with leak-detection capabilities also empower property managers/owners by allowing them to detect water leaks and instantly alert maintenance crews to fix the problem.

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H₂O Degree Utility Management & Leak Detection Solutions for Multi-Family Facilities

- Wireless Submetering - Water, Electric, Gas & BTU
- Water Leak Detection & Alarming
- Wireless Thermostat Control
- Utility Consumption Analysis & Reporting
- New LoRaWAN Communication Available

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CALIFORNIA METERING REQUIREMENTS

Senate Bill SB 7 specifically states that all meters installed in California for residential submetering and billing must comply with the California Department of Food & Agriculture (CDFA) requirements and be certified by the Bureau of Weights and Measures. A formal list of approved meters is provided on the CDFA website.

Figure 1 shows examples of water meters and pulse counters typically used for single- and dual POE (point-of-entry) submetering. The majority of the meters are ¾ inch pulse output meters that can be read by a remote metering system through wireless communication. A variety of cold water and hot water meters can be installed.

Since the landlord has to be able to read the meters without accessing the tenant space, it is essential to the meter installation to select a reliable wireless system that connects from the pulse-output of the meter to a pulse counter that has a built-in wireless radio.



Figure 1. Typical water meters and pulse counters that can be installed to comply with SB 7.

All meters have to be sent to the appropriate local County Weights & Measures office for testing and sealing. This process requires the owner to pay a fee of \$5 per meter. The lab will randomly select 10% of the meters for a specific project for testing. If approved, all of the meters will be sealed for the contractor to pick them up for installation.

Submetering in California

requires that the installation is in compliance with the California Business and Profession Code. This requires that installers are certified and have been trained. The following offers the options and requirements for an approved installer:

OPTION 1 – CALIFORNIA-APPROVED

- The contractor must be licensed by the State License Board and employ at least one journey person who has graduated from a state-approved apprenticeship program

OPTION 2 –REGISTERED SERVICE AGENCY

- The contractor must:
 - o be a licensed Calif. contractor
 - o pay \$35 application fee
 - o pass a two-hour online test

ADVANCES IN SUBMETERING

The most sophisticated – and effective – approach to reducing water consumption through submetering includes using combination of two-way wireless mesh technology, water meters, and daily water meter usage monitoring and leak-detection reporting. This type of system has the ability to remotely assess tenants’ individual water usage using a convenient web-based portal, and by accurately detecting water leaks and using daily email reporting to prompting maintenance staff to repair them.

When installing submetering in an apartment, the actual plumbing design will determine the number of water meters, as shown in Table 1.

Type of Submetering System	Number of Meters per Apartment Unit	Type of Plumbing Design
Single Point of Entry	1	Single cold water branch feeds each apartment. Typically, it enters the apartment at one point in the utility closet and supplies the heater and continues on to supply cold water for the fixtures. Meter installed right before plumbing branches and after isolation valve.
Dual Point of Entry	2	Building produces central domestic hot water. Both hot and cold water typically enter the apartment at one centralized location in a hallway access panel or washer closet. Meter installed right before plumbing branches and after isolation valve.

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LEAK-DETECTION REPORTS

Advanced submetering systems utilize cloud-based, leak-detection reporting for instantaneous results. Working in tandem with their wireless water meters, such web-based leak-detection reports help apartment building owners dramatically cut their average daily consumption, or ADC. The ADC of multi-family buildings can be reduced as much as 50% in some cases.

The granular insight of an “event” obtained by a wireless water meter enables managers to determine its cause. For instance, when reading the data from a meter is installed on a toilet, a property manager can deduce if a water leak is being caused by a broken flapper, broken chain or a crack fill valve. Armed with this information, he or she can quickly send an email or text to maintenance staff to fix the specific problem. Meanwhile, asset managers can access the ongoing online leak reports in order to track the building’s historical water-consumption information, as well as maintenance response times and other follow-up information.

Leak detection reports can be sortable by serial number, property, apartment, point-of-use and leak size (Figure 2). Emailed daily leak reports are pushed through an automated system where the customer (building manager) can assign them to as many as 10 recipients. The reports are stored on a secure server in near real time. An easy-to-use dashboard features a variety of user selections including billing data, exception reports, a configurable reporting function and alarms. Aside from leak detection, the system also provides insight into reducing vacant utility cost, indicates over-occupancy and limits the possibility of passing a high water bill caused by leaks onto the tenant, thus improving the tenant experience at the property.

Comprehensive submetering and leak detection systems can play a vital role in helping owners and managers of multi-family buildings comply with SB 7. These sophisticated wireless submetering technologies facilitate instantaneous monitoring that allows building owners to more accurately track tenants’ individual water use, while also detecting and reporting water leaks in need of repair.



Specify H2O Degree Products to Help Your Multi-Family Clients Control Utility Costs

• Reduce Operating Expenses • Increase NOI • Boost Property Valuation

Utility Submetering

- Tenant Billing
- Water & Energy Conservation
- Water-Point of Use or Point of Entry
- Electric, Gas, BTU
- Compatible with Billing Companies



Water Leak Detection

- Proactive Response to Water Leaks
 - Toilets, Showers, Sinks
- Monitors Gallons, Events, Time
- Daily Leak Reports Sent to Property Manager & Maintenance Staff
- Identify Leaks in Vacant Apartments



Thermostat Control

- Thermostat Controls for Heat & A.C Systems
 - Electric/Gas Heat
 - Hydronic Heat
 - Fan Coils
- Owner Controls Set Points
- Empower Tenant Control
- Control Vacant Utility Costs



Heat/Air-Conditioning BTU Monitoring

- Fan Coils-Hot Water/Chilled Water
- Hydronic Base Board Fin Tube Heating
- BTU Metering for Energy Conservation
- BTU Metering for Tenant Billing



H2O Degree
(215) 788-8485
info@h2odegree.com

For details contact our local representative:
Northern California - Osborne Company • (925) 449-1700
Southern California - Keyline Sales • (562) 449-1700

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Is your Multi-Family Property In Compliance with the Water Submetering Law?

California SB7 Requires Water Submetering In All New Construction As Of January 1, 2018

**Submeters
Required
Beginning
January 1, 2018**

SB7 Overview

- Signed by the Governor 9/25/2016.
- SB7 - Chapter 623 requires submetering in all new construction multi-family dwellings after 1/1/2018.
- The bill requires tenants to be billed on actual usage, no estimates or allocations.
- Leaks must be repaired by management within 21 days.
- Goal is to hold tenants accountable and encourage conservation while providing consumer protection.

H2O Degree SB7 Support

- Product selection & payback analysis.
- Engineering design and layout of meter system.
- Contractor training & Certification.
- Coordination of local county meter approval and sealing process.
- Interface to the leading meter reading service providers (RBCs).



**Apartment
Water Meters**



**Usage & Leak
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**Contact H2O Degree's
California offices for
SB7 Information.**

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(925) 449-1700**

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**Visit www.h2odegree.com/a6.php for more
information on the new SB7 regulation!**



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- Wireless Utility Submetering Solutions
- Water Leak Detection & Alarming
- Wireless Thermostat Control
- Utility Consumption Analysis and Reporting



H2O Degree provides California approved water meters for SB7