

METERNET

Sub-metering Services

5th Edition

Guide to Water Sub-meters in California

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1 Overview

In HOAs, Condos, Apartments and Commercial buildings, water sub-meters are installed to allow individual billing/cost apportionment and promote conservation.

This guide is specific to water sub-meters served by public (city, municipal or county) water districts.

While many of the regulations and rules mentioned within also apply to electric & gas, or sub-metering within private water districts (rare), the CPUC in conjunction with the utilities in these sectors, may have additional rules and regulations.

1.1 Definition of a 'Sub-meter'

A sub-meter is a meter that is downstream from the providing utility's meter (master-meter) and is used to measure the portion used by an individual tenant or homeowner in a multi-unit building or development.

For the purposes of this document, 'sub-meter' refers specifically to a water meter that is privately owned, and will be used for billing purposes within a multi-unit building or development.

1.2 Regulatory Overview

In California, sub-metered utility billing is regulated (either through exemption or regulation) by the California Public Utilities Commission (CPUC), while the sub-meters used for billing purposes are regulated by the California Department of Food & Agriculture Weights and Measures (W&M) at the state level.

As of January 1, 2018 all new construction residential buildings with two or more units are required to be individually metered in the State of California.

A few cities are also known to have additional regulations regarding sub-meters and/or billing practices.

San Diego City requires sub-meters in all new construction and major remodels of multi-unit buildings.

Santa Clara VWD offers rebates for sub-meter retrofits within their district.

1.3 Meter Registration and Recertification Overview

All sub-meters in California must have a current type approval from W&M at the time of installation.

Registration & certification of the meters with the local County W&M office is mandatory prior to being installed. The owner of the metering system must renew their registration annually.

Recertification of sub-meters must be performed a minimum of every ten years. To do this the meters must be removed and delivered to W&M for testing. Meter installation must be performed exclusively by Service



Agents (SA's) who are employed by a Registered Service Agency (RSA) licensed by W&M.

2 Regulations

The rules governing sub-metering in California come from no less than five (in some cases six or more) separate entities; the California Health & Safety Code, Building Code, Water Code, PUC, and Agriculture Weights & Measures and in certain cities, local laws also come into play.

2.1 SB-7

Enacted September 25, 2016, SB-7 provides a framework for sub-metering, including; meter access, tenant rights & obligations, billing methods, service fees/late-fees, building code (requiring individual meters) and water purveyor requirements.

The full text of SB-7 can be accessed here:

https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB7

Most of SB-7's regulations relate specifically to Landlord/Tenant sub-metering/billing, other than the section relating to Building Code which is listed separately below.

2.2 Building Code

Under the Health and Safety Code, any newly constructed multiunit residential, or mixed residential/commercial structures will require individual water meters/sub-meters for each dwelling unit. Under this regulation there are exceptions for low-income, education, timeshares, residential and long-term care facilities, and etcetera.

Health and Safety Code: §179220.14: *“(a) (1) During the next regularly scheduled triennial code cycle that commences on or after January 1, 2018, or during a subsequent code adoption cycle, the department shall develop and propose for adoption by the California Building Standards Commission, pursuant to Chapter 4 (commencing with Section 18935) of Part 2.5, building standards requiring the installation of water meters or submeters in newly constructed multiunit residential structures or mixed-use residential and commercial structures, as those terms are defined in Section 517 of the Water Code. These standards shall conform to Article 5 (commencing with Section 537) of Chapter 8 of Division 1 of the Water Code.*

(b) The proposed standards shall require the installation of water meters or submeters in newly constructed multiunit residential structures and mixed-use residential and commercial structures only for residential dwelling units within those structures, but shall not require installation in units within those structures that are used only for commercial purposes.

(c) (1) The department shall determine whether and under what circumstances the installation of water meters or submeters is infeasible and include in the building standards proposed in subdivision (a) the appropriate provision for exemption from this requirement. The department may consider whether there are any issues specific to high-

rise structures that would require an exemption from the requirement for the installation of water meters or submeters.

(2) The following categories of structures shall be exempt from the building standards established pursuant to subdivision (a):

(A) Long-term health care facilities, as defined in Section 1418.

(B) Low-income housing. For the purposes of this subparagraph, "low-income housing" means a residential building that is financed with low-income housing tax credits, tax-exempt mortgage revenue bonds, general obligation bonds, or federal, state, or local loans or grants, for which rents charged to lower income households do not exceed rents prescribed by deed restrictions or regulatory agreements pursuant to the terms of the financing or financial assistance, and for which not less than 90 percent of the dwelling units within the building are designated for occupancy by lower income households. As used in this subparagraph, "lower income households" has the same meaning as defined in Section 50079.5.

(C) Residential care facilities for the elderly, as defined in subdivision (k) of Section 1569.2.

(D) Housing at a place of education, as defined in Section 202 of the California Building Standards Code (Title 24 of the California Code of Regulations).

(E) Time-share property, as defined in subdivision (aa) of Section 11212 of the Business and Professions Code.

2.3 CPUC Rules

The CPUC has issued an exemption from being under their jurisdiction, as long as certain rules are followed for sub-metering.

This exemption is found in the CPUC code §2705.5: "Any person or corporation, and their lessees, receivers, or trustees appointed by any court, that maintains a mobilehome park or a multiple unit residential complex and provides, or will provide, water service to users through a submeter service system is not a public utility and is not subject to the jurisdiction, control, or regulation of the commission if each user of the submeter service system is charged at the rate which would be applicable if the user were receiving the water directly from the water corporation."

This is straightforward; simply pass through the actual cost of the water/sewer, or charge at the same rate as a single family residence; otherwise you are a utility and fall under the CPUC regulations as such.

2.4 Weights and Measures Regulations

In a nutshell: use type approved meters, have them certified, install in accordance with the specifications by registered service agents in a location that can be easily read by the resident, or provide a remote display. It's that simple!

Type Approved Meters: Only meters with a current Certificate of Approval may be used. Meters may be Type Approved by either California CDFA: <http://www.cdfa.ca.gov/dms/ctep.html>

Or Nationally NCWM: http://www.ncwm.net/ntep/cert_search



Both sites must be searched as many type approvals show on one location.

Meters currently approved and available as of 09-13-2017 are:

Positive Displacement type:

- Badger model 25, 35, 40, 55, 70, 120 & 170 Cold water meters 5/8" through 2". Manual, Encoder and Pulse reading types, UV and Pit rated for outdoor use.
- Neptune T-10 & Aquity Cold water meters 5/8" through 2". Manual, Encoder, Integrated RF drive-by and Pulse reading types. Pit and UV rated for outdoor use.
- Sensus SR & SR11 5/8" through 1", Manual, Encoder and Pulse reading types. Pit and UV rated for outdoor use.

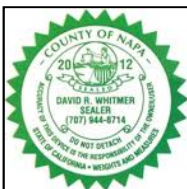
Multijet type:

- Conservice (aka U.S.A.) Hot water meters, 5/8", 3/4" & 1". Pulse reading type. Not suitable for outdoor use.
- EKM Meter, 3/4" and 1" size Cold water meters, Pulse output.
- MTW MJ-20, 3/4" Cold water meter. Pulse output reading type. Not suitable for outdoor use.
- Next Century M201C and M201H, 3/4" Hot and Cold water meters. Not suitable for outdoor use.
- Norgas Singlemag, Versamag & PDMag, 1/2", 3/4" and 1" Hot & Cold water meters. Pulse out reading. Not suitable for outdoor use.
- Zenner PMN 5/8", 3/4" & 1" Cold water meters. Manual, Encoder and Pulse reading types. Pit and UV rated for outdoor use.

Ultrasonic type:

- Kamstrup, 1/2", 3/4" and 1" Hot & Cold water meters, internal drive-by RF and Encoder output reading types. Pit, but not UV rated, install outdoors only if protected from sunlight.
-

Business and Professions Code: 12500.5: *"The secretary by rules and regulations shall provide for submission for approval of types or designs of weights, measures, or weighing, measuring, or counting instruments or devices, used for commercial purposes, and shall issue certificates of approval of such types or designs as he or she shall find to meet the requirements of this code and the tolerances and specifications thereunder. It shall be unlawful to sell or use for commercial purposes any weight or measure, or any weighing, measuring, or counting instrument or device, of a type or design that has not first been so approved by the department; provided, however, that any such weight, measure, instrument, or device in use for commercial purposes prior to the effective date of this act may be continued in use unless and until condemned under the provisions of this code."*



Certification & Registration: Prior to being installed, every meter must be delivered to the local County W&M office for testing and certification;

the meters must also be registered to a 'Location' (usually the complex or community address).

Business and Professions Code:12501.1: *“Every person who uses, or intends to use, any weight or measure, or weighing or measuring instrument for commercial purposes shall, before using the same, cause them to be sealed by a sealer, unless they have been sealed before sale, in which case they may be used by the purchaser for the remainder of such period as is authorized in the regulations adopted by the director pursuant to Section 12212, or until they become "incorrect," as defined in subdivision (d) of Section 12500.”*



Lead wire seals with Certification date used by most counties

Location: Meters must be located in an accessible location for the resident to read the meter or a remote reading display provided.

California Code of Regulation Title 4, Division 9 Section 3.36.UR.2.: *“An unobstructed standing space of at least 30” wide, 36” deep, and 78” high shall be maintained in front of an indication for use by the customer to allow for reading the indicator. The customer indication shall be readily observable to a person located within the standing space without necessity of a separate tool or device.”*

Note: This does not say that the meter or remote register needs to be in this space, just that there needs to be a space to stand where you can see the meter reading indicator, without using a ladder, magnifying glass, mirror or other aid to do so.

Installation: Meters must be installed (set) by a Service Agent who is licensed with W&M. Once the meters are installed on location, a Placed in Service Report must be submitted to W&M within 24 hours.

Business and Professions Code: 12515: *“(a) Any person having made repairs or adjustments to any weighing instrument or to any measuring instrument, or any person having sold, rented, leased, loaned, or installed any such instrument, who within 24 hours after the instrument has been sold, rented, leased, loaned, installed, repaired, or adjusted, fails to notify the sealer of the county in which the instrument has been sold, rented, leased, loaned, installed, repaired, or adjusted, that the sale, rent, lease, loan, installation, repair, or adjustment has been made, is guilty of a misdemeanor.*

(b) This section does not require notification to the sealer for an adjustment to a weighing or measuring instrument only for the purpose of maintaining it in a zero or balance condition.”

Business and Professions Code: 12532: *“(a) No person shall engage in business as a service agency unless registered by the Secretary of Food and Agriculture pursuant to this chapter and unless the current registration fee and any penalty has been paid.*

(b) Applications for registration shall be in writing on a form prescribed by the department, and shall be accompanied by the required fee.

(c) A service agency shall forward to the department the name or names of service agents employed by them, with the appropriate fees required by Section 12535.

(d) A device may only be placed in service by a sealer or a service agency. A device used by a public utility in connection with measuring gas, electricity, water, steam, or communication service subject to the jurisdiction of the Public Utility Commission is exempt from the requirements of this chapter.

(e) Except as provided in subdivision (f), no person who repairs a device is required to be registered if the device is placed into service by a sealer or service agency.

(f) Vapor measuring devices operating at greater than 11 inches water column shall be installed by a service agency.

(g) In the event of any change in the legal status of a registered service agency, the new legal entity shall obtain a new registration prior to operating as a service agency.

(h) A service agency may employ or designate a licensed service agent to act for the service agency and shall be responsible for all acts of that person.”

Re-certification Requirements: Water sub-meters must be removed and delivered to W&M for testing and recertification every ten years (or less). Some Counties require 10% per year.

California Code of Regulation Title 4, Division 9, Chapter 3, Article 1, section 4070: Frequency of Inspection: “The frequency of inspection for weighing and measuring devices used for commercial and law enforcement purposes is established as in Table 1. The specified times are maximum times between tests. More frequent tests may be conducted if requested by the device user in a complaint investigation or on the initiative of a weights and measures official. The definitions of specific device classifications are as in Chapter 1. NOTE: Authority cited: Sections 12027 and 12212, Business and Professions Code. Reference: Section 12212, Business and Professions Code.” -Water (Domestic Service) 10 Years-



Laws pertaining to Weights and Measures can be found in the Business and Professions Code, excerpts pertaining to W&M at: <http://www.cdfa.ca.gov/dms/programs/general/BP2013Full.pdf>

Regulations for water sub-meters are found in the CDFA-DMS Field Reference Manual CCR Title 4, Division 9; can be found at: <http://www.cdfa.ca.gov/dms/programs/general/2013-FieldReferenceManual.pdf>

2.5 Local Regulations

There are currently only a few local jurisdictions with specific water sub-meter regulations.

San Diego City requires water sub-meters in all new construction and major remodels of multi-unit buildings.

Santa Clara VWD offers rebates for sub-meter retrofits within their service district.

City of Petaluma requires Petaluma Water District approval of all sub-metering and a 'contract' with the city allowing the 'resale' of water.

Various Small Cities & Water Districts require some sort of 'approval' to install sub-meters, or they deny sub-metering based on the laws against re-selling water; however under CPUC guidelines, sub-metering is exempt. In many cases, questioning about the specific laws/regulations (have them show you) and then a thorough explanation of the regulations and a meeting with the manager to explain the basis as well as the benefits, will turn a flippant 'you can't do it' into a (albeit sometimes reluctant) 'go-ahead'.

3 Recertification and Change-outs



With the recertification policy from W&M requiring that every meter be recertified every 10-years (or less), it is important that sub-metered Associations have a plan and budget for this ongoing task.

3.1 Recertification Considerations

In order for water, gas or electric sub-meters to be re-certified, they must be tested for accuracy at the local W&M Meter Lab, in order to do this; the meters must be removed and delivered to the County facility.

Some Counties request that 10% of all meters be tested and re-certified every year; however the state regulations clearly state every ten years. It is important to note that the reason behind the 10%/year guideline is to prevent an overwhelming backlog of re-certifications, which can easily happen if several large communities were to deliver hundreds or even thousands of water, gas and electric meters all at once.

Generally speaking, communities over 100-units should implement a plan to rotate and re-certify 10% of their meters per year, while communities between 20-99 units are best suited for breaking their recertification into two or three annual batches; small communities under 20 units should do them all at once.

In order to simplify the process, reduce costs, and eliminate un-captured usage, the best plan is to either use a vendor that has a supply of meters that can be rotated out, or for the Association to purchase and maintain a quantity of certified meters which can be installed in-place of the meters being removed, utilizing the removed meters for the next round of recertification's, and so-on.

This type of rotation greatly simplifies the process and eliminates the need to re-install the meter with a second trip/appointment and service interruption.

3.2 Change-out Considerations

Occasionally a meter will fail, either by no longer registering usage, or by leaking, thus requiring a mid-cycle meter change-out.

For the reading/billing company, the proper handling of these one-off change-outs is very important. If the meter is leaking, often a plumbing company is called to repair the leak and to do so they either remove or replace the meter. Usually the best solution is to have them remove the meter (make sure it is left at the unit), install a temporary 'jumper' (allowing the water service to be restored) and then notify the Read/Bill company or contact a meter Service Agent to have the correct meter replaced properly.

The repair technician can then replace the meter with an exact replacement (based on the old meter's info), record the ending read from the old meter, the start read and meter number from the new meter, and the installation date. If the meter is read remotely, the remote read system usually needs to be updated with the new meter's information in order to be able to read the meter. This info then needs to be conveyed to the Billing Company so that they can properly bill the resident for the correct combined usage from both meters.

3.1 Selecting a Qualified Vendor

Besides the standard criteria, in California, anyone who installs, replaces, connects or works on a meter, is required to be registered with the state W&M office as a qualified Service Agent and be employed by a Registered Service Agency. This also ensures a reasonable degree of confidence that the technician doing the work is both competent and has the required insurance, licenses and tools to perform the job properly.

A list of current Registered Service Agencies can be found at:
<http://www.cdfa.ca.gov/dms/programs/rsa/rsalistsings/rsalistsings.html>

3.2 Managing the Recertification Process

For a Community Manager, the job of overseeing a recertification project can range from virtually nothing (if the meters are located in an exterior accessible location and the vendor handles resident notification) to a significant amount of work, if the meters are located inside of the units, they will require significant advanced notice and security or access issues.

Like any other project, excellent communication and advanced planning will make the project run smoothly. If the service company is familiar with the intricacies of condo/homeowner situations, it will help significantly as they will know how to plan out the project, what to expect and have contingencies in place for unknowns and variables encountered along the way.

In order to keep track of their meter status, through management and vendor changes, sub-metered associations should maintain a list of meters tied to each unit and when the meter was installed/certified.

3.3 Reserve Account

Since sub-meters must be re-certified every ten years, and few will have a total useful life of 30-years or more, sub-meters (and if applicable, the AMR system) replacement should be included in the Association's reserve study and financial plan.

A good rule of thumb is to figure that 100% of the meters will need to be replaced every 20 years on average, and a radio read AMR system

every 7-10 years (the exception being municipal grade encoder system, which will have a 20+year life expectancy).

4 Understanding Meter Types

Measuring flow can be accomplished in a number of ways. For residential applications, the two most common approaches are turbine and positive displacement technologies, with the latest and most accurate equipment being the new Ultrasonic meter technology.

Positive displacement meters employ a rotating piston-cylinder arrangement, which continuously parcels out the water in a series of defined, known volumes for each rotation. These meters are very accurate and capable of providing reasonable torque to drive the register mechanism.

Turbine meters (known as single- or multi-jet meters) incorporate a turbine that rotates at a speed proportional to flow. By counting the rotations of the turbine shaft, flow is derived. These meters tend to be small and low in cost, but the turbine can provide very little output torque; even slight loading of the shaft will change the meter's calibration.

Both turbine and positive displacement meters contain a small gearbox, or "register," that is coupled to the output shaft. The gearbox divides the rotations by an initial scale factor and then drives a series of dials that represent decades of usage. These dials provide a basic visual readout for manual reading.

Ultrasonic flowmeters use sound waves to determine the velocity of the water flowing in a pipe, calculating volume based on transit time and velocity. Today's Ultrasonic meters are by far the most accurate meters on the market; with zero moving parts they also maintain their accuracy for their entire useful life.



4.1 Positive Displacement

Positive Displacement or "PD" Meters measure water volume with an oscillating piston or a nutating disc within a chamber. PD meter sizes are typically 5/8" to 2" but not larger. The disc or piston has very tight tolerances between it and the chamber. Water must push "displace" the measuring element to go through the meter. Because of close tolerances and design, well maintained PD meters can be very accurate. PD meters can result in greater pressure loss through the meter and be somewhat noisier at high flow rates than multi-jet meters.

Due to their design, PD meters operate accurately in any orientation, giving a huge advantage for installation/location and 'readability'.

The nutating disc type of PD meters also have the advantage of being able to pass small to medium particulate matter without plugging or damage, ensuring long-term accuracy.

Positive displacement meters are not as well suited for applications serving fire protection sprinklers due to their inability to 'bypass' and a generally lower maximum flow rate for their size.



4.2 Turbine (Single or Multi Jet)

Single-Jet (SJ) Meters operate much like a paddle wheel in an enclosure. This design is often directed at applications with a need for

accuracy at low flow rates (less than 2 gpm) or limited space, since they are physically smaller than PD or MJ meters. SJ meters must be installed on a level horizontal plane to operate accurately.

Multi-Jet (MJ) Meters function by measuring water velocity and converting the velocity into volume of use. They use an impeller which rotates as it is driven by several jets of water flowing through holes evenly spaced around the entire circumference of the impeller.

These meters have lower pressure loss compared to PD meters, and because of the 'open tolerance' design, they can also pass small particulate matter without damage or clogging. MJ meters must be installed on a level horizontal plane to operate accurately and most require clean straight pipes for a distance in front of the meter to provide a turbulent free flow for proper operation.

4.3 Ultrasonic

Ultrasonic Meters use sound waves to determine the velocity of the water flowing in a pipe, calculating volume based on transit time and velocity. At zero flow conditions, the frequencies of an ultrasonic wave transmitted into a pipe and its reflections from the fluid are the same. Under flowing conditions, the frequency of the reflected wave is different due to the Doppler effect. When the fluid moves faster, the frequency shift increases linearly. The transmitter processes signals from the transmitted wave and its reflections to determine the flow rate.



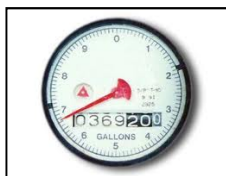
Transit time ultrasonic flowmeters send and receive ultrasonic waves between transducers in both the upstream and downstream directions in the pipe. At no flow conditions, it takes the same time to travel upstream and downstream between the transducers. Under flowing conditions, the upstream wave will travel slower and take more time than the (faster) downstream wave. When the fluid moves faster, the difference between the upstream and downstream times increases. The transmitter processes upstream and downstream times to determine the flow rate.

Since these meters also measure the water temperature (in order to calculate density/volume), they are also capable of accurately measuring hot water.

Ultrasonic meters are multiples of times more accurate than other meter types, especially at the lower flow rates of more household consumption and with no moving parts, remain accurate for their entire life. With no moving parts, they are also quieter than all other meter types, making them a supreme choice for interior meter installation locations.

4.4 Unit of Measure

It is always best to install meters that read in the same units (gallons, cubic feet, hundred cubic feet, etcetera) as the providing utility bills in. This eliminates confusion during the reading and billing process because resident statements must be billed in the same units as the providing utility.



For meters using a pulse AMR system, it is important to know what the 'pulse-value' is; it can range from 10/1 to 1/1000.

5 Automatic Meter Reading (AMR) Systems

Water meters frequently need to be installed in locations that make them difficult or impossible to read manually.

Meters read remotely must have a means of communicating the meter readings to an electronic AMR device. The AMR device may be a local touch-pad, digital or electromechanical display that can be read or interrogated by an onsite meter reader. It may also be a short or long-range wireless device that transfers the data over a fixed or mobile network to a centralized data collection point where it can be displayed, captured and/or uploaded in a single batch to the reading/billing provider.



There are two basic types of AMR systems; pulse and encoder, with significant differences between them.

5.1 Pulse AMR

There are several varieties, but all of them issue a pulse that represents a specific volume of water, usually one pulse per gallon or one pulse for every ten gallons. This technology does not provide the reading on the meter. Operation begins by coordinating between the reading at the meter and the start reading (number of pulses) at the Data Collection Unit (DCU), and then the DCU receives the pulses and acts as a totalizer. If a wire or communications are cut the totalizer must be reset or adjusted. To do so, someone needs to physically read the meter to re-establish the current reading.

While fairly simple according to theory, and widely used in the sub-metering world, pulse based systems are susceptible to many variables.

Outside influences such as poor wiring connections, low battery power in the transmitter, meter movement due to pipe deflection (or lack of a backflow preventer) and other electro/mechanical influences, can cause the actual meter reading to vary greatly from the remote reading (pulse count) causing incorrect billing.

Other drawbacks of pulse-based systems include the need to re-set the pulse count at the DCU every time a meter is changed out and that if the wire connection between the meter and transmitter is broken, it simply shows the same reading, indistinguishable from a meter with no usage.

5.2 Absolute Encoder AMR

Most North American water utilities use meters with registers that are “absolute encoders.” What this means is that the AMR system ‘calls’ the meter with a low voltage signal, and the register returns an actual read by detecting the exact current positions of the odometer-type wheels.

Encoder meter reading systems range from remote ‘pads’ using a handheld reader, remote read displays, ‘fixed network’ radio frequency transmitters tied to an onsite DCU that then uploads the readings to a central office and ‘mobile network’ radio transmitters which are built into the meter register and can be read using a ‘drive by’ computer.

The absolute encoder systems offer the greatest degree of accuracy and security. The meter reading is always 100% accurate. If the wire between the meter and the pad or AMR device is broken, there will be an



error, and the problem can be identified. Meter change-outs do not require re-setting or 'recalibrating' of any kind.

5.3 Cellular Absolute Encoder AMR

Cellular AMR systems do not require on-site or local meter reading, no additional infrastructure (phone lines, base station, repeaters, etcetera) like the fixed network radio systems and is an absolute encoder system, so the reads are 100% accurate, every time.

Cellular transmitters use a built in cell phone to transmit hourly meter readings every day, this means each meter is independent, eliminating the system-wide or 'zoned' meter reading outages so common with fixed network AMR systems. In addition some cellular endpoints are network agnostic, looking for the strongest signal regardless of carrier. Since these networks also operate on different frequencies, there is virtually nowhere this system won't work. Meaning the entire reading system operates on a very robust network of separately operated and maintained systems, without any network infrastructure that needs to be maintained!

These systems also have web portals and mobile applications that allow each customer to see their usage history, patterns and comparisons at hourly, daily & monthly resolutions. Customers can also set up their own alert thresholds for high usage and/or constant flow, leak detection and notification methods. This system can detect slow leaks under 1 gallon per hour. The detailed level of data provided by these systems allows MeterNet to alert our clients and customers of leaks within units as they happen, rather than months later when they show up as high readings.

Each meter endpoint reports in with a self-status check each day, alerting of potential issues as they arise including battery charge, and warning months in advance before the battery fails. Most cellular endpoints have a ten year warranty (including battery life) while the meters have a 20+ year useful life expectancy.

6 HOA/Condo CC&R Considerations

In an HOA, planning for the long-term care and billing of water sub-metering system in the governing documents, up front, can prevent a lot of problems down the road.

The ownership designation of the individual sub-meters is crucial for long-term meter maintenance, recertification and repairs, while the way sub-metered billing is classified will impact the ability of the HOA to efficiently collect delinquent bills.



6.1 Meter Ownership

Sub-meters should **always** be owned by the HOA or the Sub-Metering company (not the Home Owner) because W&M will require they be registered as an entire group and hold the association or billing agent (sub-metering company) responsible for compliance and re-certification.

Additionally, if the meters were to be owned by the homeowner and located inside the unit, when a meter stops working or reading, there is no incentive whatsoever for the resident/owner to cooperate with repairs. In fact the opposite is true, since with a non-working meter they will not be able to be billed for usage.

6.2 Access

Since the HOA/Sub-metering company will own, and be responsible for the meters, access to them for maintenance purposes should be granted in the CC&Rs.

7 Meter Reading and Billing Practices

Often referred to as 'meter reading' service by Managers, the reality is that the reading of sub-meters and full-service billing & collection (sometimes referred to as 'RBC' for Read, Bill & Collect), are two totally separate tasks, often not even performed by the same company. The actual 'meter reading' is about 5% of the total job of integrated RBC services.

As a Community Manager you already have a full-plate, so here are the areas to pay particular attention to:

7.1 Meter Readings

The goal of meter readings is to calculate usage, which is accomplished by subtracting the previous read from the current reading.

Sub-metered billing is only as accurate as the meter readings, so managers should pay close attention to meter or reading reports that show non-working or non-reading meters and making sure that the reading/billing company is on-top of repairing these. The other item to look for are meters that show zero usage on units that are known to be occupied, as these may be 'stuck' meters (or on pulse-read systems, a transmitter that is no longer connected to the meter), which also needs to be addressed. Otherwise there is usage that is not being properly billed out to the appropriate homeowners and is instead being absorbed by the Association.

It is also important to keep an eye out for recurring estimated readings, this shows that there is either a problem with the meter, reading system, or access to the meter. Regardless, a reading should not be estimated for more than three consecutive billing cycles without getting an actual read, otherwise the billed usage can get substantially out of line with the actual usage, causing significant over or under billing.

7.2 Billing Calculations

In order to comply with the PUC exemption, the rates charged to the residents must be either a direct pass-through from the utility, or be billed at the equivalent single family residential rate. This includes any tiered rates and/or discounts.

While the billing company should be calculating the bills correctly, a spot check of a high-usage unit's bill amount is a good way to quickly verify that the charges are correct. Another good practice is to send a copy of the providing utility's bills to the billing company when they come in, that way they can be alerted of any rate changes or discrepancies as they occur.

7.3 Changes in Ownership

Good communication between the Manager and billing company is critical, especially when it comes to changes in unit ownership. Usually this is addressed during escrow through an escrow demand; however the escrow companies sometimes skip this step in condos, short-circuiting the final-bill process and leaving the biller out of the loop about an ownership change.

These oversights can be caught quickly by reviewing the billing roster report for units that changed ownership in the previous cycle to ensure that the new owners are listed correctly.

7.4 Past-Due and Delinquent Accounts

At least once per billing cycle, an accounts receivable report should be reviewed; particular attention should be paid to those that are in the 30-60 or 90+ days past due sections, as these are the accounts at risk of becoming a larger problem. It is easier to take early decisive action to get them back on track, than it is to deal with the problem when the balance is 6+ months past due and hundreds or thousands of dollars.

If the billing company has a good plan in place for past-due accounts, there should only be marginally more sub-meter accounts in arrears than there are homeowners behind in assessments.

7.5 Severely Delinquent/Collections

A very legitimate tool for collection of delinquent accounts is to apply unpaid utility charges as an assessment against the owner.

Privileges, such as pool access or clubhouse use, may also be revoked for non-payment.

Another option, although more contentious, is to turn off their water. There are not currently any laws specifically prohibiting an Association from doing so (unlike landlord/tenant law). Some HOAs have gone so far as to get approval from the court or water district, and as long as the Association follows the same notification procedures as the providing utility, there seems to be good precedent for doing so. After all, if that same homeowner lived in a single family home down the street, they would be subject to those same policies.

8 About MeterNet

MeterNet is a leading supplier of sub-meter systems and services to HOA's and Condominium communities in California.

8.1 Metering Services

With an inventory of meters, hardware and reading systems, we can provide meter change-out, recertification and repairs quickly and efficiently.

Our licensed meter service agents cover the entire state of California performing installation and technical services on new and existing sub-meter systems.

8.2 Reading & Billing

Our full-service reading & billing division specializes in serving HOA & Condo communities exclusively, with a business model tailored to meet the specific requirements of this sector. We essentially function as a full-service utility on behalf of the Association, handling all aspects, from meter reading to collections.

8.3 Request a Proposal

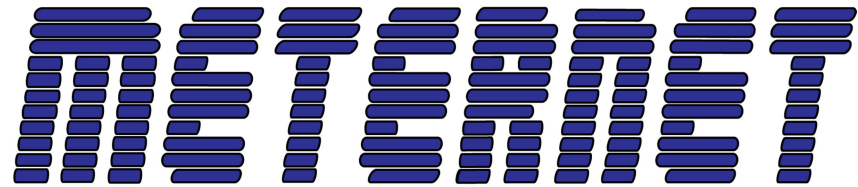
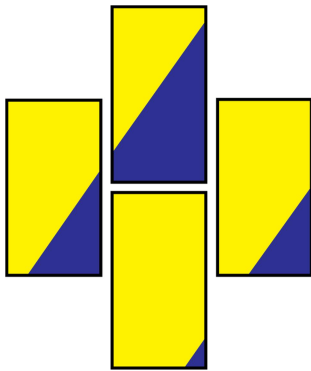
If you have questions about meters, regulations, W&M compliance, billing practices, or anything else sub-meter related, please contact us.

We are always happy to provide free quotes and proposals for meters, installation or reading & billing services.

E-mail: sales@meternetusa.com

Phone: 800-985-1179





Sub-metering Services

8.1 Contacts for Your Convenience:

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Main Office: Toll-Free.....800-985-1179

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