Interactions Among
AB 715 (Laird 2007), SB 407 (Padilla 2009),
and CALGreen Building Standards

Assessing for Provisions of Water Use Efficiency Regulations

Existing law provides for the following:

- requires that all toilets or urinals sold or installed in the state use no more than an average of 1.6 gallons or one gallon per flush, respectively;
- requires that certain disclosures be made upon the transfer of real estate; and
- authorizes water purveyors to adopt and enforce water conservation programs.

These three matters are affected by the regulations AB 715 (Laird 2007), SB 407 (Padilla 2009), (both already chaptered), and the CALGreen Building Standards (waiting formal inclusion in California Building Standards Code - CBSC on January 1, 2011). Between the three regulations, however, there is some degree of confusion or uncertainty regarding what happens when, and how it happens. Specifically, this relates to water efficiency measures, as altered by the regulations' effect on the plumbing code and building standards.

Per the table below ("Toilet and Urinal Fixtures in the California Code"), there are differing standards for toilets and urinals, and differing dates for implementation of high-efficiency models, i.e., HETs and HEUs. In addition, SB 407 and CalGreen address general plumbing fixtures, while AB 715 addresses exclusively toilets and urinals.

AB 715

COVERS: Toilets and Urinals
CHAPTERED AS: Health and Safety Code 17921.3

This law requires that, on or after January 1, 2014, 100% of toilets and urinals (other than blow-out urinals) sold or installed in California be high-efficiency (maximum of 1.28 gallons per flush for high-efficiency toilets – HETs - and 0.5 gallons per flush for high-efficiency urinals - HEUs). (In addition, the law requires that non-water urinals be approved for sale and installation in California.) The law requires that any state agency adopting or proposing building standards for plumbing systems to consider developing building standards that would govern the use of non-water urinals for submission to the CBSC. This law imposes a state-mandated local program, and violation of the State Housing Law is punishable as a misdemeanor. This law addresses exclusively toilets and urinals, and no other residential or commercial plumbing fixtures, fittings, appliances, or equipment.

The challenge with this bill is enforcement. As with all instances where additional inspection and enforcement burdens are placed upon municipalities, there is doubt as to whether either the technical capabilities or the municipal budgets currently exist to take on the added responsibilities associated with these requirements. This can be demonstrated with the lack of full enforcement of *today's* plumbing codes in new commercial construction.

AB 715 contained no provisions related to the retrofit on resale of existing single-family or multi-family homes, nor is there mention of existing commercial. However, by virtue of the 100% requirement relating to sales after January 1, 2014, all commercial and residential renovations involving toilet and/or urinal replacement would be subject to the HET and HEU requirements. As such, the expectation is for natural turnover/replacement to ultimately lead to the replacement of all toilets and urinals throughout the State over a period of time.

The bill also does not address what contractors, plumbers, or installers of the new HETs and HEUs are to do with the fixtures being replaced. Experience suggests that there is a secondary recycling market for the chinaware and other components of the toilets and urinals being removed.

SB 407

COVERS: Toilets, Urinals, Showerheads, Interior Faucets

SB 407 mandates all buildings in California come up to 1992 State plumbing fixture standards at some point in the next decade. This law establishes requirements that residential and commercial property built and available for use on or before January 1, 1994 replace plumbing fixtures that are not water conserving, defined as "noncompliant plumbing fixtures" as follows:

(1) any toilet manufactured to use more than 1.6 gallons of water per flush;
(2) any urinal manufactured to use more than one gallon of water per flush;
(3) any showerhead manufactured to have a flow capacity of more than 2.5 gallons of water per minute; and
(4) any interior faucet that emits more than 2.2 gallons of water per minute.

Conversely, the law defines the category of "water-conserving plumbing fixtures" as fixtures that are compliant with current standards and use water equal to or less than the amounts shown above.

On or before January 1, 2019, all noncompliant plumbing fixtures in multi-family residential and commercial properties must be replaced by the property owner with water-conserving plumbing fixtures. For single-family residential property, the compliance date is January 1, 2017.

Building Alterations & Improvements

In advance of the above dates, the law requires, on and after January 1, 2014, for building alterations/improvements to all residential and commercial property, that water-conserving plumbing fixtures replace all noncompliant plumbing fixtures as a condition for issuance of a certificate of final completion and occupancy or final permit approval by the local building department.

Real Property Sales and Transfers (disclosures)

The law requires, on and after January 1, 2017, that a seller or transferor of single-family residential, disclose to the purchaser or transferee, in writing, the specified requirements for replacing plumbing fixtures and whether the real property includes noncompliant plumbing. For multi-family residential and commercial property, the date is January 1, 2019.

Special Provision: Postponement of Requirements

The law provides that the application of its requirements may be postponed up to one year with respect to a building for which a demolition permit has been issued.

Special Provision: Fixture Operation in Tenant Spaces

Regarding rental or leased properties, the law requires that, on and after January 1, 2019, the water-conserving plumbing fixtures prescribed within the law operate at the manufacturer's rated water consumption at the time that a tenant takes possession.

Special Provision: Local Ordinances

The law permits a city or county or retail water supplier to enact a local ordinance or policy that promotes compliance with the provisions of the law, or that will result in greater water savings than otherwise provided by the law. Any city, county, or city and county that has adopted an ordinance requiring retrofit of noncompliant plumbing fixtures prior to July 1, 2009, is exempt from its requirements so long as the ordinance remains in effect.

Enforcement

Again, however, the complication or barrier to implementation occurs in the enforcement, i.e., how this law will be enforced in the various situations covered in the law. The law does not specify punishment for noncompliance, but only requires that the purchaser or transferee be notified of the noncompliance. The law includes a strong reliance on building inspectors and real estate agents to ensure/enforce that all faucets, showerheads, urinals, and toilets are, in fact, water conserving and operate at the manufacturers' specified standard. As with AB 715, the question remains as to whether either the technical capabilities or the municipal budgets currently exist to take on the added responsibilities at the local level.

Like AB 715, the law does not address what contractors, plumbers, or installers of the new toilets are to do with the replaced fixtures.

CALGreen Building Standards Code

This component is the 11th of 12 parts of the official compilation and publication of the adoptions, amendments and repeal of regulations to California Code of Regulations, Title 24, also referred to as the CBSC. This component is known as the California Green Building Standards Code, and it is intended that it shall also be known as the *CALGreen* Code.

The CBSC is published in its entirety every three years by order of the California Legislature. These building standards have the same force of law, and take effect 180 days after their publication unless otherwise stipulated. There are two non-mandatory appendices to CALGreen that may be adopted locally if an agency chooses to require more stringent conservation. The CBSC applies to all occupancies in the State of California as annotated. A city, county or city and county may establish more restrictive standards reasonably necessary because of local climatic, geological, or topographical conditions. For the purpose of this code, these conditions include local environmental conditions as established by a city, county, or city and county. Findings of the local condition(s) and the adopted local building standard(s) must be filed with the California Building Standards Commission to become effective and may not be effective sooner than the effective date of the most recent edition of the CBSC. Local building standards that were adopted and applicable to previous editions of the CBSC do not apply to the most recent edition without appropriate adoption and the required filing.

Water efficiency requirements begin on page 17 of the CALGreen Code
http://www.hcd.ca.gov/codes/shl/2010_CA_Green_Bldg.pdf

While this is the most thorough of all laws discussed here, it covers ONLY new construction and renovations. It does not cover such areas as property resales, seller disclosures, or product sales. Indoor provisions of CALGreen include: commercial submetering, excess consumption submetering, efficient fixtures, faucet aerators, toilets, urinals, lavatory and metering faucets, multiple showerheads, and non-potable water use systems. Outdoor considerations include: water budgets, landscape submetering, and irrigation design (including rain sensors and weather-based irrigation controllers). There is to be a section on water reuse systems, though it is not yet included within the document.

Mandatory provisions

CalGreen prescriptive indoor provisions for maximum water consumption of plumbing fixtures and fittings are as follows:

Fixture/Fitting	Baseline consumption (Tables 4.303.1 & 5.303.2.2)	High-Efficiency consumption (Tables 4.303.2 & 5.303.2.3)
Water Closets (Toilets) – all types	1.6 gallons per flush	1.28 gallons per flush
Urinals	1.0 gallon per flush	0.5 gallons per flush
Residential showerheads	2.5 gallons per minute	2.0 gallons per minute
Residential lavatory faucets	2.2 gallons per minute	1.5 gallons per minute
Kitchen faucets	2.2 gallons per minute	1.8 gallons per minute
Replacement faucet aerators	2.2 gallons per minute	not specified
Non-residential lavatory faucets	0.5 gallons per minute	0.4 gallons per minute
Metering faucets	0.25 gallons per cycle	0.2 gallons per cycle

The high-efficiency consumption levels shown above represent CalGreen's prescriptive path to compliance.

However, Sections 4.301.1 and 5.303.2 provide that an optional performance path may be chosen instead. That option requires an overall aggregate 20% reduction in indoor water use from a calculated baseline using a set of worksheets provided within the CalGreen document. This trade-off method does not extend to exterior water uses at the building. That is, landscape measures cannot be traded for indoor plumbing measures, and vice-versa.

Mandatory outdoor water use provisions consist of requiring a weather-based or soil moisture-sensing irrigation controller.

Voluntary provisions

In addition to the above mandatory requirements, further efficiencies are available to the jurisdiction or builder through application of two voluntary "tiers". For water use efficiency, tiers are as follows:

Tier 1 requires that all of the mandatory requirements be satisfied PLUS the following:

Residential development (up to 3 stories):

- Kitchen faucet flow rate reduced from 1.8 gallons per minute to 1.5 gallons per minute
- Potable water use for landscape applications be reduced to a quantity that is ≤65% of ETo
- Incorporation of at least one other elective measure from a list of measures provided (including such items as waterless toilet, waterless urinal, low-consumption irrigation system, rainwater capture system, water budgeting, water reuse system)

Non-residential development (including mixed use with some residential):

- Aggregate indoor water use reduction of 30% from the established baseline ***OR*** 30% reduction in individual water use for each of the plumbing fixtures listed above.
- Potable water use for landscape applications be reduced to a quantity that is ≤60% of ETo
- Incorporation of at least one elective measure from a list of measures provided (including such items as clothes washers, commercial and residential dishwashers, ice makers, food steamers, water softeners, dual plumbing, landscape submeters, water budget, potable water elimination from outdoor use, graywater irrigation system)

Tier 2 is more aggressive and requires that all of the mandatory requirements be satisfied PLUS the following:

Residential development (up to 3 stories):

- Kitchen faucet flow rate reduced from 1.8 gallons per minute to 1.5 gallons per minute
- Dishwashers be Energy Star qualified and use no more than 5.8 gallons per cycle
- Potable water use for landscape applications be reduced to a quantity that is ≤60% of ETo

- Incorporation of at least two elective measures from a list of measures provided (including such items as waterless toilet, waterless urinal, low-consumption irrigation system, rainwater capture system, water budgeting, water reuse system)

Non-residential development (including mixed use with some residential):

- Aggregate indoor water use reduction of 35% from the established baseline ***OR*** 35% reduction in individual water use for each of the plumbing fixtures listed above.
- Potable water use for landscape applications be reduced to a quantity that is ≤55% of ETo
- Incorporation of at least three elective measures from a list of measures provided (including such items as clothes washers, commercial and residential dishwashers, ice makers, food steamers, water softeners, dual plumbing, landscape submeters, water budget, potable water elimination from outdoor use, graywater irrigation system)

Conclusion:

After careful reading and assessment of the documents, these laws are not found to be contrary, but simply 'one-up' each other as dates pass and action is taken. The provision in AB 715 that all fixtures sold or installed after January 1, 2014 must be HETs and HEUs (sections 17921.3 (b)(1) and (2)) is primary until January 1, 2014, or until the date on which the California Building Standards Commission includes standards in the CBSC that conform to this section, whichever date is later (section 17921.3 (i)). When the CBSC is updated to conform to the AB 715 legislation (this is a required action by this legislation), it will become the primary plumbing code efficiency provision, a regulation that is, in effect, law.

The efficiency provisions in SB 407 are augmented by those in AB 715 and the CALGreen Code (SB 407 only requires toilet efficiency of 1.6/1.0 gallon per flush for a toilet and urinal versus the high-efficiency provision for 1.28 gallons per flush in AB 715 and CALGreen). The more stringent restrictions in AB 715 and the CALGreen Code will supersede the equipment flow standards included in SB 407. SB 407 requires entities to disclose non-efficient fixtures in real-estate transactions and requires that all toilets in single-family residential, multi-family residential, and commercial buildings have efficient fixtures by January 1, 2017, 2019, and 2019 (respectively). This provision will complement the other regulations, as it rounds out the requirements, including all buildings, whether transfer of ownership occurs or not, and all plumbing fixtures (though this will likely be covered by the update of the CBSC). As noted earlier, the very significant challenge of enforcement remains for all of these laws.

Options for clarifying these incongruencies include rectifying/clarifying legislation. This would be helpful in two cases:

- that of strengthening SB 407 to include some kind of enforcement for existing homes and real estate transactions, as the plumbing code will be enforced on new development; and
- changing the standards listed in SB 407 to those in the CALGreen code at some point in the future.

Toilet and Urinal Fixtures in the California Codes

Condition, Activity, or Event	AB 715 (2007)	SB 407 (2009)	CalGreen
Sale of toilet and urinal fixtures through retail or other outlets	All fixtures sold or installed after Jan 1, 2014 must be HETs or HEUs[3]	Not addressed	Not addressed
Existing[1] single family residential			
Resale	Not addressed	As of Jan 1, 2017, requires written disclosure by Buyer to Seller of non-compliant fixtures in property	Not addressed
Renovation[2]	All fixtures installed after Jan 1, 2014 must be HETs or HEUs[3]	Renovated SFR must be 1.6 max (toilets) or 1.0 max (urinals) on or after Jan 1, 2014 to obtain bldg or occupancy permit	1.28 maximum[3] IF prescriptive path is chosen (per 4.303.1) – Jan 1, 2011
All other SFR	Not addressed	ALL SFR must be 1.6/1.0 max by Jan 1, 2017	
Existing[1] multi-family residential			
Resale	Not addressed	As of Jan 1, 2019, requires written disclosure by Buyer to Seller of non-compliant fixtures in property	Not addressed
Renovation[2]	All fixtures installed after Jan 1, 2014 must be HETs or HEUs[3]	Renovated MFR must be 1.6 max (toilets) or 1.0 max (urinals) on or after Jan 1, 2014 to obtain bldg or occupancy permit	1.28 maximum[3] IF prescriptive path is chosen (per 4.303.1) – Jan 1, 2011
All other MFR	Not addressed	ALL MFR must be 1.6/1.0 max by Jan 1, 2019[6]	
Existing[1] commercial			
Resale	Not addressed	As of Jan 1, 2019, requires written disclosure by Buyer to Seller of non-compliant fixtures in property	Not addressed
Renovation[4]	All fixtures installed after Jan 1, 2014 must be HETs or HEUs[3]	Renovated Comm'l must be 1.6 max (toilets) or 1.0 max (urinals) on or after Jan 1, 2014 to obtain bldg or occupancy permit	1.28 max (toilets) and 0.5 max (urinals)[3] IF prescriptive path is chosen (per 5.303.2) – Jan 1, 2011
All other Commercial	Not addressed	ALL Commercial must be 1.6 max on or after Jan 1, 2019[5]	
New single family residential	All fixtures installed after Jan 1, 2014 must be HETs or HEUs[3]	Not addressed	1.28 max (toilets) and 0.5 max (urinals)[3] IF prescriptive path is chosen (per 4.303.1) – Jan 1, 2011
New multi-family residential		Not addressed	
New commercial		Not addressed	1.28 max (toilets)[3] and 0.5 max (urinals) IF prescriptive path is chosen (per 5.303.2) – Jan 1, 2011

[1] Existing as of the effective date of the provision
[2] Alterations or improvements
[3] Toilet effective flush rate of 1.28 gallons, where dual flush toilets are measured as the average of one full flush and two reduced flushes. Urinal flush rate of 0.5 gallons.
[4] SB407 applies only where building additions increase total building size by more than 10 percent OR for building alterations or improvements, where the total construction cost estimated in the building permit exceeds $150,000
[5] Places continuing responsibility on the owner of rental property to guarantee that the toilet "shall be operating at the manufacturer's rated water consumption at the time that the tenant takes possession."