	Code	Description	M	T 1	T 2	Enf. Agency	Inst. Desgnr	3rd Party	Purpose	Examples of Acceptable Methods of Implementation and/or Compliance	Background	.	.	.	.
PDS	4.106	**SITE DEVELOPMENT**													
PDS	4.106.1	General. Preservation and use of available natural resources shall be accomplished through evaluation and careful planning to minimize negative effects on the site and adjacent areas. Preservation of slopes, management of storm water drainage and erosion controls shall comply with this section.	ox												
PDS	4.106.2	Storm water drainage and retention during construction. Projects which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction. In order to manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site. 1. Retention basins of sufficient size shall be utilized to retain storm water on the site. 2. Where storm water is conveyed to a public drainage system, collection point, gutter, or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency. 3. Compliance with a lawfully enacted storm water management ordinance.	ox						Implementation of this standard is intended to help prevent flooding, damage to adjacent property and pollution from storm water runoff by retaining soil on site or by providing soil containment methods to prevent sediment from reaching storm water drainage systems and receiving streams or rivers.	Retention basins sized and shown on the site plan. Filtering storm water and routing to a public drainage system. Compliance with local storm water ordinances. Develop and implement additional BMP's including, but not limited to: Silt fencing Hay Bales/Mulch Cutback Curbs Erosion Control Matting Inlet Protectors Stabilized Entrances Sand/Gravel Bags Fiber Rolls/Wattles	Currently, the California State Water Resources Control Board (SWRCB) issues permits to ensure a Storm Water Pollution Prevention Plan (SWPPP) in compliance with applicable state regulations is issued and implemented for projects which are larger than one acre. This section applies only to construction projects less than one acre which are outside the scope of SWRCB. Storm water runoff and the sediment and pollutants it usually contains are commonly identified as the biggest polluters to water bodies and their health. Construction sites that continually receive heavy equipment and truck traffic, utility excavation and exposure to storm water often experience compaction and topsoil loss which unless contained migrates into our downstream water bodies. The goal of storm water management is to create an effective combination of erosion and sediment controls. Erosion control is the practice of keeping soil from dislodging and migrating from its resting place; while sediment control refers to trapping and containing soil particles after they have been dislodged by storm water or water used during construct				
PDS	4.106.3	Surface drainage. The site shall be planned and developed to keep surface water from entering buildings. Construction plans shall indicate how the site grading or drainage system will manage surface water flows. Examples of methods to manage surface water include, but are not limited to, the following: 1. Swales. 2. Water collection and disposal systems. 3. French drains. 4. Water retention gardens. 5. Other water measures which keep surface water away from building and aid in groundwater recharge.	0x						This section provides protection from unintended entry of surface water and requires construction plans to show how surface water will be managed. Site design and proper installation of drainage systems will help builders protect structures from the dangers of flooding or subsurface water infiltration. This is especially important in areas where setbacks or obstacles interfere with proper surface drainage.	Develop and implement control methods to address ground water flow both above and below the surface to ensure water flow away from the building. Channel rain gutter discharge away from the building during large or intense rain events. Builders should consider site design mimicking water flows similar to the natural environment. Additional design strategies that can be considered are: Roof overhangs. Sloped ground. Properly placed drains.	During large rain events the ground can become saturated causing runoff and/or ponding in low-lying areas, which can cause water to migrate into buildings. It is critically important to channel rain gutter discharge away from the building during these events. Builders should consider site design that mimics water flows similar to the natural environment and incorporate methods as described in this section. In order to keep a site well drained and stable, designers and contractors should consider both storm water from the roof, as well as rainwater penetrating into the area around the site. Ground water can flow above or below the surface. Control methods should be developed and implemented which allow for both types of ground water flow to ensure water can continually flow away from the building.				

		DIVISION 4.2 – ENERGY EFFICIENCY													
EE	4.201.1	The Department of Housing and Community Development does not regulate mandatory energy efficiency standards in residential buildings. For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory building standards. Note: It is the intent of this code to encourage buildings to achieve exemplary performance in the area of energy efficiency. For the purposes of energy efficiency standards, the California Energy Commission believes specifically, a green building should achieve at least a 15 percent reduction in energy usage when compared to the State's mandatory energy efficiency standards. The Department of Housing and Community Development's mandatory green building standards for residential buildings do not require compliance with levels of minimum energy efficiency beyond those required by the California Energy Commission.							This section clarifies the California Energy Code as the ongoing authority for adopting statewide energy mandates.	Prescriptive method Performance method	The California Energy Commission (CEC) is the state's primary energy policy and planning agency. As such, the CEC adopts regulations to establish the minimum level of energy efficiency a heated or cooled structure must meet or exceed. For this section, designers should refer to CEC's latest minimum energy standards. The proper integration of the mandatory requirements as well as the voluntary requirements is important to long term building performance and assurance of good occupant indoor air quality, comfort, safety and durability. California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24, Part 6, of the California Code of Regulations) is available online at http://www.energy.ca.gov/title24/. The CEC's website also provides links to information such as detailed California Climate Zone Maps, appliance efficiency standards, and other information related to implementation and enforcement of the California Energy Code. Contact the California Energy Commission regarding questions about Title 24 at: E-mail: title24@energy.state.ca.us Phone: (916) 654-5106 or 1-8				
		DIVISION 4.3 – WATER EFFICIENCY AND CONSERVATION													
WE	4.303	INDOOR WATER USE													
WE	4.303.1	Twenty Percent Savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by at least 20 percent shall be provided. The reduction shall be based on the maximum allowable water use per plumbing fixture and fitting as required by the California Building Standards Code. The 20 percent reduction in potable water use shall be demonstrated by one of the following methods. PRESCRIPTIVE METHOD: 1. Each plumbing fixture and fitting shall meet reduced flow rates specified in Table 4.303.2; or 2. A calculation demonstrating a 20 percent reduction in the building "water use" baseline as established in Table 4.303.1 shall be provided. For low-rise residential occupancies, the calculation shall be limited to the following plumbing fixture and fitting types: water closets, urinals, lavatory faucets and showerheads.							**PERFORMANCE METHOD: Section 4.303 provides guidelines on how to achieve a 20% reduction in indoor water use. There are two options to use for compliance: the prescriptive method and the performance method. The following graphic shows an average breakdown of indoor water use. As shown, toilets, showers, clothes washers, and faucets are the greatest indoor water users. CALGreen focuses on water use related to toilets (water closets and urinals), faucets and showers for purposes of potable water conservation.**	Mandatory effective date for 20% reduction is July 1, 2011.				
									PRESCRIPTIVE METHOD DISCUSSION: The plumbing fixtures listed below must comply with Table 4.303.2.						

								a) Toilets (Water Closets): The standard single flush toilet (1.6 gal/flush) only allows the user to complete a full-flush with each flush regardless of waste type. A “dual flush” toilet provides the user the option based on waste type to utilize the “half flush” or “full-flush” technology. A “dual flush” toilet will have two flushing mechanisms clearly marked for each flushing option minimizing the total water used by the toilet. The “1.28 flush” for a “dual flush” toilet is measured by taking the average of three flushes: (two fluid flushes = 1.0 gal/flush) + (one solid flush = 1.6 gal/flush) x (1/3). Additional compliance models include gravity-fed single flush low-flow toilets, pressure-assisted low-flow toilets and composting or waterless toilets.						
								b) Urinals: Not commonly found in a low-rise residential application. However, this fixture type is a viable option to reduce indoor water usage. The maximum flow rate allowed for use by a urinal is 0.5 gallons/flush to be greater than the 20% reduction. Many manufacturers are now producing low-flow, ultra low-flow, high efficiency and waterless urinals that are seeing water consumption ranges form 0 gal/flush to 0.125 gal/flush.						
								c) Showerheads: Studies show that approximately 17 percent of indoor water use can be directly related to showering and even modest flow rate reductions can greatly reduce water savings. A showerhead is a perforated nozzle of various designs that applies water to a bather. As shown in Table 4.303.2, the maximum flow rate of a showerhead is 2 gpm @ 80psi. Showerheads with flow rates ranging from 0.5 gpm to 1.6 gpm are readily available. Note: The 2010 California Plumbing Code references a higher acceptable flow rate for showerheads. If a showerhead with a higher flow rate is used, it will be necessary to use the performance-based calculation method to achieve the overall 20 percent indoor water reduction rate. Showerheads with a flow rate less than 2 gpm @ 80psi shall be equipped with scald protection that functions at that reduced rate.						
								d) Lavatory Faucets: Lavatory faucets provide an excellent source of water reduction. Aerators on reduced flow faucets inject air bubbles into the water stream creating the consumer appeal of large soft water flow with less water. Residential lavatory faucets must not exceed a maximum flow rate of 1.5 gpm @ 60 psi and may not be less than 0.8 gpm @ 20 psi. Faucets must also comply with the low-lead requirements of AB 1953 as summarized in the “INFORMATIVE NOTE”. Note: The 2010 California Plumbing Code references a higher acceptable flow rate for lavatory faucets. If a faucet with a higher flow rate is used, it will be necessary to use the performance based calculation method to achieve the overall 20 percent reduction rate.						

									e) Kitchen Faucets: Kitchen faucets must not exceed a maximum flow rate of 1.8 gpm @ 60psi as defined in Table 4.303.2 below. Faucets must also comply with the low-lead requirements of AB 1953 as summarized in the " INFORMATIVE NOTE". Note: The 2010 California Plumbing Code references a higher acceptable flow rate for kitchen faucets.						
									f) Verify with local jurisdictions if there are any special conditions which may preclude use of low-water use toilets or urinals. INFORMATIVE NOTE AB 1953: Lead-Free Plumbing Law Effective 1/1/10. Legislation redefining what constitutes "lead-free plumbing" took effect on January 1, 2010. Signed into law in 2006, AB 1953 effectively reduced the maximum amount of allowable lead content in plumbing pipes, fixtures and fittings used for potable (drinking) water to 0.25 percent. When initially signed into law, there were no major manufacturers with compliant product. That situation has changed in a big way over the past three years. The Plumbing Manufacturers Institute (PMI) has announced that there is a substantial supply of compliant products now on the market. Further information regarding manufacturers and products can be found at PMI's website at www.pmihome.org. Follow-up legislation, SB 1334 (Calderon) and SB 1395 (Corbett), requires all plumbing products, as defined, to be certified by an independent ANSI-accredited third party for compliance with existing lead standard						
WE	4.303.2	**Multiple showerheads serving one shower**. When single shower fixtures are served by more than one showerhead, the combined flow rate of all the showerheads shall not exceed the maximum flow rates specified in the 20 percent reduction column contained in Table 4.303.2 or the shower shall be designed to only allow one showerhead to be in operation at a time.							The maximum flow rate for showerheads when using the calculation method specified in Section 4.303.1, Item 2, is 2.5 gpm @ 80 psi.	The maximum flow rate established in the 20% reduction table covers all applications where water sprays from multiple sources at one time. Sources include but are not limited to showerheads, handshowers and bodysprayers. This section also clarifies that no showerhead shall exceed a maximum flow of 2.5 gpm @ 80 psi.				
WE	3.303.3	Plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall meet the standards referenced in Table 4.303.3.							This section provides specifications for plumbing fixtures and fixtures referencing the US Environmental Protection Agency's WaterSense label, for fixture types that could be used to meet the 20 percent reduction criteria. Graphic from US Environmental Protection Agency WaterSense Program. Website: http://www.epa.gov/watersense/pubs/showerheads.html					
WE	4.304	OUTDOOR WATER USE												

WE	4.304.1	Irrigation controllers. Automatic irrigation system controllers for landscaping provided by the builder and installed at the time of final inspection shall comply with the following: 1. Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change. 2. Weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-based controllers are not required to have rain sensor input. Note: More information regarding irrigation controller function and specifications is available from the Irrigation Association at http://www.irrigation.org/SWAT/Industry/ia-tested.asp.							Water savings can be achieved by eliminating water use when not needed such as during periods of rain or when soils are holding enough moisture for support of landscaping. Controlled water use can also reduce damage from over watering such as erosion, foundation damage, mold, premature death of plants and runoff.	Applies to controllers installed at time of final inspection. This section does not mandate that controllers be installed. Smart irrigation control systems are manufactured and supplied by many companies and are easily accessible in stores or online. Acceptable control systems automatically delay watering due to rain. Systems may be communication-based, based on plant watering needs, or soil moisture.	Automatic irrigation systems are often referred to as “smart irrigation control systems” and will either have a single control system or a secondary add-on device that can interface with the controller. Smart controllers estimate or measure depletion of available plant soil moisture in order to operate an irrigation system, replenishing water as needed while minimizing excess water use. The irrigation system is monitored by either soil or moisture base devices that allow irrigation to occur when water is required and not by a preprogrammed time clock. The choice of irrigation system emitters should be established during the design phase and based on evaluation of the land topography (slope), soil type, water availability and pressure, plant type, and climate conditions. Weather-based smart irrigation control systems evaluate current weather conditions and adjust schedules based on several parameters; weather conditions, plant types, and site conditions. The system will continually monitor the parameters and adjust the irrigation schedule as required. Soil moisture-based smart irrigation control sys	Frequently Asked Questions: Q1: What is the effective date of the indoor water use requirements for nonresidential occupancies? (The Checklist for residential occupancies indicates an effective date of July 1, 2011, while the Checklist for nonresidential occupancies is silent.) A1: The effective date for residential indoor water reduction is July 1, 2011. The effective date for nonresidential indoor water reduction is January 1, 2011. ..... Q2: How is the reduced water flow for a dual flush toilet calculated? A2: To get the flow rate of a dual flush toilet, an average use is determined by totaling two reduced rate flushes with one full rate flush, then dividing by 3. (R+R+F)/3 = Average flow. This flow must be 1.28 gallons per flush or less to meet the reduced flow requirements. ..... Q3: Does CALGreen require a “smart” irrigation system to be installed prior to the final inspection? A3: No. Section 4.304.1 requires either weather- or soil moisture-based controllers for automatic irrigation systems only if controllers are installed at the time of final inspection.				
MCR		**DIVISION 4.4 – MATERIAL CONSERVATION AND RESOURCE EFFICIENCY**																
MCR	4.406	SECTION 4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE																
MCR	4.306.1	Joints and openings. Openings in the building envelope separating conditioned space from unconditioned space needed to accommodate gas, plumbing, electrical lines and other necessary penetrations must be sealed in compliance with the California Energy Code. Exception: Annular spaces around pipes, electric cables, conduits, or other openings in plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or similar method acceptable to the enforcing agency.							This section addresses the importance of sealing or providing barriers in openings to keep out rodents and preventing damage from rodents. This section also addresses an issue not addressed by the California Energy Code and provides acceptable materials for sealing.		Background (on Exception): The California Energy Code requires joints and other openings in the building envelope, which are potential sources of air leakage, to be sealed to limit infiltration and exfiltration. It is also necessary for other penetrations, voids, joints and openings to be sealed to avoid the passage of rodents. Openings include, but are not limited to, cuts in bottom or top plates, exterior wall openings around plumbing pipes, flues, exhaust vents, and HVAC conduits. A cement mortar or similar method approved by the enforcing agent and capable of withstanding rodent penetration is required.				
MCR	4.408	CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING																

MCR	4.408.1	Construction waste reduction of at least 50 percent. Recycle and/or salvage for reuse a minimum of 50 percent of the non-hazardous construction and demolition debris, or meet a local construction and demolition waste management ordinance, whichever is more stringent. Exceptions: 1. Excavated soil and land-clearing debris. 2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist or are not located reasonably close to the jobsite.	These provisions will help reduce landfill production of methane gas, a direct greenhouse gas. In addition, reusing and recycling materials typically results in less energy use than producing materials from virgin materials, conservation of the original resources, and reduces the burden on landfills. This section requires 50 percent of construction waste to be diverted from the landfill with options for calculating the reduction by weight or volume, but not both. This section also provides for alternate waste reduction methods.			Where a local jurisdiction has not adopted a minimum waste reduction requirement the 50% reduction established by Section 4.408.1 will apply. Section 4.408.1 also provides an exemption for alternate waste reduction methods developed in consultation with local agencies. This provision is to be used when waste facilities do not exist or are not reasonably close to the jobsite. The determination of what is "reasonably close" may vary according to the location of the jobsite and the nearest waste facility; and whether the type of waste in question is accepted at the facility. If utilizing the closest facility would result more use of more resources and energy than saved, the net savings to energy and resources may not be effective. In addition, the services may be prohibitively expensive or not available in certain areas. Many local agencies will allow the use of a variety of public and private sector recycling options. Local authorities should be contacted during the preconstruction phase to obtain a list of approved haulers. Any successful recycling program will involve upfront due diligence and planning and the consideration of several factors. Many of these factors include, but are not limited to: Local authority approved h
MCR	4.408.2	Construction waste management plan. Where a local jurisdiction does not have a construction and demolition waste management ordinance, a construction waste management plan shall be submitted for approval to the enforcing agency that: 1. Identifies the materials to be diverted from disposal by recycling, reuse on the project or salvage for future use or sale. 2. Specifies if materials will be sorted on-site or mixed for transportation to a diversion facility. 3. Identifies the diversion facility where the material collected will be taken. 4. Identifies construction methods employed to reduce the amount of waste generated. 5. Specifies that the amount of materials diverted shall be calculated by weight or volume, but not by both.		1. Comply with local waste management ordinance. 2. Develop a construction waste management plan and submit for approval to the local enforcing agency. Provide evidence of compliance such as worksheets or documentation from waste management facility. Supporting sample plans and worksheets are included in CALGreen Chapter 8 and in this document to reduce time and costs for completing CWM Plans. There may be items not listed within the worksheet that will be required to be added by the representative preparing the construction waste management plan. Please contact the local authority early to discuss any items that may be unclear. Sample Forms and Templates: 1) Construction Waste Management (CWM) Plan 2) Construction Waste Management (CWM) Worksheet 3) Construction Waste Management (CWM) Worksheet (Volume Method)* 4) Construction Waste Management (CWM) Worksheet (Weight Method)* 5) Construction Waste Management (CWM) Worksheet (Summary)* 6) Construction Waste Management (CWM) Acknowledgement *Not part of the 2010 CALGreen Code – these are simplified optional for	The construction waste management (CWM) plan will provide a direct and clearly understood route to the successful diversion target of waste from landfills. With proper planning and on-site posting employees and subcontractors are further able to understand and participate in the process. The CWM plan should be used to assist in identifying materials to be recycled and the method of their disposal. The CWM plan should also provide documentation and verification that the established diversion goals requirements have been satisfied.
MCR	4.408.2.1	Documentation. Documentation shall be provided to the enforcing agency which demonstrates compliance with Section 4.408.2, Items 1 through 5. The waste management plan shall be updated as necessary and shall be accessible during construction for examination by the enforcing agency.	This section addresses use of a construction waste management plan intended to save raw materials and preserve landfill space, especially where local regulations do not apply.			

		Isolated jobsites. The enforcing agency may make exceptions to the requirements of this section when jobsites are located in areas beyond the haul boundaries of the diversion facility. Notes: 1. Sample forms found in Chapter 8 may be used to assist in documenting compliance with the waste management plan. 2. Mixed construction and demolition debris (C&D) processors can	This provision provides an exception from Section 408, as approved by the enforcing agency, for job sites where construction and demolition waste processing facilities are not readily available.	If your project is located outside the haul boundaries of a diversion facility contact your local authority as soon as possible for resolution. It is recommended that the owner/authorized agent research and discuss with the enforcing agency all logistical requirements early in the submittal process.	
MCR	4.408.2.2	be located at http://www.ciwmb.ca.gov/ConDemo.			
MCR	4.41	BUILDING MAINTENANCE AND OPERATION			
		Operation and maintenance manual. At the time of final inspection, a manual, compact disc, web-based reference or other media acceptable to the enforcing agency which includes all of the following shall be placed in the building: 1. Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure. 2. Operation and maintenance instructions	As construction practices become more sophisticated, a certain level of knowledge is required to maintain building systems and equipment. This section provides a minimum list of items to be included in a comprehensive homeowner manual. The manual is also intended to provide information on the home for homeowners who are not the builders or first occupants of the home.	If a builder/developer does not currently have a manual then a single manual should be created, placed in the home at the time of final inspection, and provided to the purchaser. It should be noted on the manual cover that “Manual shall remain with the building for the life cycle of the structure.” Media should be approved by the enforcing agency. Options for developing a home manual include use of web-based programs or templates that may be available for purchase or may be free share. HCD is developing an optional template or standard format for the manual. It is recommended that homeowners update or supplement the manual to keep information accurate.	Even the most efficient home can operate poorly when uninformed users are responsible for their continued maintenance and operation. Many homeowners continually fail to complete even the most minor maintenance tasks such as changing air filters or operating exhaust fans to prevent excess moisture in bathrooms. An operation and maintenance manual is a one-stop location for maintenance and operational information and will promote the continued health of the complete building system. The manual could also be used as a record for compliance if additional information is included. It is recommended that the manual remain with the building for the "life cycle" of the structure. The manual will provide technical, operational, and educational resources so owners and occupants can make well informed decisions. Providing owner’s information on green features, equipment operation, warranties, special inspection reports, sub-contractor names and phone numbers, utility information, landscape and irrigation plans, along with water and energy conservation ideas. Additionally, the n
		for the following: a. Equipment and appliances, including water saving devices and systems, HVAC systems, water heating systems and other major appliances and equipment. b. Roof and yard drainage, including gutters and downspouts. c. Space conditioning systems including condenser and air filters. d. Landscape irrigation systems. e. Water reuse systems. 3. Information from local utility, water and waste recovery providers on methods to further reduce resource consumption including recycle programs and locations. 4. Public transportation and/or carpool options available in the area. 5. Educational material on			
MCR	4.410.1	the positive impacts of an interior relative humidity betwee			
EQ	4.5	ENVIRONMENTAL QUALITY			
Eq	4.503	FIREPLACES			
		General. Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed woodstove or pellet stove shall comply with US EPA Phase II emission limits where applicable. Woodstoves, pelletstoves and fireplaces	This requirement prevents use of indoor air for either combustion or exhaust of combustion products and is consistent with current Title 24, Part 6, California Energy Code. Examples of Acceptable Methods of Implementation and/or Compliance: Install a direct-vent gas fireplace Install a pellet or wood stove which meets US EPA Phase II emission standards Comply with local ordinance		
MCR	4.503.1	shall also comply with applicable local ordinances.			

Frequently Asked Questions Q1: Section 4.406.1 requires the sealing of joints and openings in compliance with the California Energy Code. The exception in Section 4.406.1 applies to openings at exterior walls. Does the exception combine all openings through exterior walls or just the openings in the top and bottom plates? A1: The exception applies to all openings not covered by the California Energy Code unless specifically allowed, such as vents. The exception requires the sealing of openings to prevent entry of rodents and the resulting damage. Q2: The building department in my jurisdiction does not allow the re-use of previously used materials. Is re-use of materials a violation of CALGreen? A2: No. There are provisions for used materials in the California Building Standards Code. The code specifies that used materials, equipment and devices shall not be re-used unless approved by the building official. This means that some materials cannot be re-used if they do not comply with the requirements of the California Building Standards Code and/or the local ordinances for new construction. CALGreen Sections A4.105.1 and A4.105.2 state that re-used mater