MARIN MUNICIPAL
WATER DISTRICT

220 Nellen Avenue Corte Madera CA 94925-1169
www.marinwater.org

January 26, 2010

Mr. Simon Eching
California Department of Water Resources
Water Use and Efficiency Branch
P.O. Box 942836
Sacramento, CA 94236-0001

Dear Simon,

Please find the enclosed the "Water Conservation Ordinance 414" - adopted by the Marin Municipal Water District Board of Directors on December 16, 2009. It contains the new landscape conservation requirements starting in Section 2 (5) that went into effect on January 1, 2010 to meet the requirements of AB 1881.

As a note, most of the landscape requirements in Ord. 414 mirror those of the Model WELO, the City of Santa Rosa and other north bay water agencies, and were developed through a consensus process in order to achieve local consistency. One significant difference between Ord. 414 and the Model WELO is that the ET adjustment factor is 0.6 instead of 0.7 as shown in the MWELO, therefore requiring more water efficient irrigation practices than the MWELO.

Ord. 414 also contains comprehensive conservation requirements for interior plumbing fixtures for all customers.

Hope all is well with you, Simon.

Thanks,

Dan

Dan

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MARIN MUNICIPAL WATER DISTRICT

ORDINANCE NO. 414

AN ORDINANCE AMENDING TITLE 13 OF THE MARIN MUNICIPAL WATER DISTRICT CODE ADDING ANOTHER ELEMENT OF THE DISTRICT'S WATER CONSERVATION PROGRAM PURSUANT TO WATER CODE SECTION 375 BY ADDING SECTION 13.02.021 TO CHAPTER 13.02,
AMENDING CERTAIN PROVISIONS OF CHAPTER 13.02 & 13.03
& REPEALING CERTAIN SECTIONS OF CHAPTER 11.60
OF THE DISTRICT CODE

BE IT ORDAINED BY THE BOARD OF DIRECTORS OF THE MARIN MUNICIPAL WATER DISTRICT AS FOLLOWS:

SECTION 1. Purpose: The purpose of this ordinance is to adopt another element of the District's water conservation program pursuant to Water Code Section 375. The instant element addresses both indoor and outdoor water use. Conservation within the District's service area continues to be necessary, as current District projections for water supply under water supply conditions similar to a repeat of the drought of record (1976-77) anticipate a water deficit in the amount of 3,700 acre feet in 2010, 6,400 acre feet in 2020 and 7400 acre feet in 2025 and legislation is pending that, if adopted, would potentially require a 20% reduction in water use District wide by 2020. The Board of Directors views this conservation program as a fundamental and necessary step in its on-going efforts to reduce overall water use District wide, especially discretionary summer water use for irrigation.

SECTION 2. Addition of New Section: A new Section 13.02.021 entitled "Water Conservation: Normal Year Water Conservation" is added to Title 13 Water Service Conditions and Water Conservation Measures to read as follows:

(1) Declaration of Purpose. The purpose of this chapter is to provide a water conservation plan to maximize the water supply during periods of relatively normal rainfall and to minimize the effect of a shortage of water on the district's consumers during an extended dry weather period (drought). The normal year conservation programs in this chapter are based on industry standards promulgated by the American Rainwater Catchment Systems Association (ARCSA), Bay-Friendly Landscape and Gardening Practices (Bay-Friendly), Best Management Practices developed by the California Urban Water Conservation Council (CUWCC), California Department of Water Resources (DWR), California Invasive Plant Council (Cal-IPC), California Irrigation Management Information System (CIMIS), Consortium for Energy Efficiency (CEE),University of California Cooperative Extension (U.C. Extension), USEPA WaterSense Program (WaterSense), Water Use Classification of Landscape Species (WUCOLS), and other recognized conservation industry standards. In every case, the intent of this chapter is to remain a living document, incorporating the most restrictive industry standards in practice at the time in question. In the event that there is a conflict in regulations, the default shall be determined by the District, or as required by law.

Section 2 of Article X of the California Constitution specifies that the right to use water is limited to the amount reasonably required for the beneficial use to be served and the right does not and shall not extend to waste or unreasonable method of use. This policy protects local water supplies through the implementation of a whole systems approach to design, construction, installation and maintenance of the landscape resulting in water conserving climate-appropriate landscapes, improved water quality and the minimization of natural resource inputs.

(2) Definitions. Definitions used in this chapter are as follows:

A. Application for Service from an Existing Connection: The application for service from an existing connection, whether it is a new, increased, or modified water service, in a customer's name for a property.

B. Backflow Prevention Device: means an approved device installed to District standards which will prevent backflow or back-siphonage into the potable water system.

C. Booster Pumps: used where the normal water system pressure is low and needs to be increased.

D. Bubblers: Irrigation heads that produce a large volume of output, measured in gallons per minute (gpm) that flood the soil area surrounding the bubbler head.

E. Check Valve: a valve located under a sprinkler head or other location in the irrigation system, to hold water in the system to prevent drainage from sprinkler heads when the sprinkler is off.

F. Common Interest Development: community apartment projects, condominium projects, planned developments, and stock cooperatives per Civil Code Section 1351.

G. Compost: the decayed remains of organic matter that has rotted into a natural fertilizer suitable as a soil amendment to enhance plant growth.

H. Developed landscape area: All outdoor areas under irrigation, swimming pools, and water features, but excluding hardscape areas.

I. Ecological Restoration Project: a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.

J. Effective Rainfall: the portion of total rainfall which becomes available for plant growth and that is used by the plants, defined as an average of 25% of total rainfall.

K. Emitter: a drip irrigation device that delivers water slowly from the system to the soil.

L. Estimated Total Water Use (ETWU): a calculated amount of water needed to irrigate a given landscape, and used as the basis for assigning water budgets at a site.

M. ET Adjustment Factor: a factor of 0.6, that, when applied to reference evapotranspiration as measured by a CIMIS weather station, or equivalent, adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape.

N. Evapotranspiration rate: the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specific specified time.

O. Flow Rate: the rate at which water flows through pipes, and valves and emission devices, measured in (gallons per minute, gallons per hour, or cubic feet per second).

P. Hardscape: Impermeable areas including patios, decks and paths, driveways and sidewalks.

Q. Head-to-Head Coverage: a high-flow irrigation system designed to provide an irrigation spray pattern that delivers water from one sprinkler head to the next.

R. High-efficiency Fixture(s): High efficiency fixtures shall, at a minimum, meet the current requirements of the Water Sense labeling program and those of the California Department of Water Resources, and those defined below by the District.

1. High-efficiency Clothes Washers: A residential or commercial clothes washers that meets the current highest water efficiency standards as defined by the District.

2. High-efficiency Irrigation Controller: An electronic device that controls the amount of time and frequency of operation for an irrigation system and adjusts automatically to compensate for the seasonal plant water requirements at the site (commonly referred to as weather-based irrigation controllers).

3. High-efficiency Irrigation System: The irrigation system connected to a water service where the overall distribution uniformity (how evenly water is distributed across the irrigated landscape area) is a minimum of 70% and the volume of water used is consistent with seasonal plant requirements as defined by the District.

4. High-efficiency Lavatory Faucet: The maximum flow rate shall not exceed 1.5 gallons per minute (gpm) at a pressure of 60 pounds per square inch (psi) at the inlet, when water is flowing.

5. High-efficiency Shower Head: The manufacturer shall specify a maximum flow rate equal to or less than 2.0 gallons per minute (gpm), at a pressure of 60 pounds per square inch (psi) at the inlet, when water is flowing.

6. High-efficiency Toilet: Any WaterSense listed toilet rated at an effective flush volume of no greater than 1.28 gallons.

7. High-efficiency Urinal: The average water consumption shall not exceed 0.25 gallons per flush (gpf).

S. High-flow irrigation: An irrigation device that delivers water to the landscape in a spray, stream-like, or flooding manner from above-ground irrigation nozzles with output expressed in gallons per minute (includes bubblers and micro-spray).

T. High-Flow Sensor: a device for sensing the rate of flow in the irrigation system.

U. High-water-use plants: Annuals, plants in containers, and plants identified as high-water-use in the current edition of the WUCOLS list published by the U.C. Extension. High-water-using plants are characterized by high transpiration rates, shallow rooting, the need for frequent watering during summer months or with exposure to hot and drying climatic conditions.

V. Hydrozones: A distinct grouping of plants with similar water needs and climatic requirements. Hydrozone types include, but are not limited to turf, high-water-use plants, low-water-use plants, microclimates (i.e., sun or shade, southern or northern exposures,

surrounded by highly reflective surfaces), and partially hardscaped areas with plants, pool areas and water-use features.

W. Infiltration Rate: the rate of water entry into the soil expressed as a depth of water per unit of time (e.g., inches per hour).

X. Invasive Plant Species: species of plants not historically found in California and/or that spread outside cultivated areas and can damage environmental or economic resources as determined by Cal-IPC (www.cal-ipc.org).

Y. Irrigation Design Capacity: The maximum amount of water calculated to flow through an irrigation system, or section of a system, based on pipe size, pipe material, and operating pressure.

Z. Irrigation Efficiency (IE): a calculated measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum average irrigation efficiency for purposes of this ordinance is 0.71.

AA. Irrigation Meter: a separate water meter that measures the amount of water used exclusively for landscape uses, such as lawns, washing exterior surfaces, washing vehicles, filling pools, etc.

BB. Isolation Valves: used to isolate and shut-off water to a portion of the piping system.

CC. Landscape Agent: The consumer's designated representative for interacting with the District on landscape plan reviews.

DD. Landscape Plans: This includes a planting plan, an irrigation plan, and a grading plan drawn at the same scale and that clearly and accurately identify specified plants, irrigation layout, equipment, finish grades and drainage, specifications and construction details, plan sheet numbers, and drawing date of plans.

EE. Landscape Water Budget: The amount of water allowed for landscape water use at a site, adjusted on a seasonal basis, as determined by the District.

FF. Landscaped Area: the entire parcel, less the building footprint, driveways, and non-irrigated portions of parking lots and hardscapes. Water features, areas dedicated to edible plants, such as orchards or vegetable gardens are included in the calculation of the landscaped area. The landscape area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other nonirrigated areas designated for non-development (e.g., open spaces and existing native vegetation).

GG. Lateral Line: Non-pressurized pipe that is located downstream of an irrigation valve.

HH. Low-flow Point Irrigation: Irrigation devices, commonly called drip irrigation, with output measured and expressed in gallons per hour (gph), that apply water directly to soil in the plants root zone.

II. Low-Head Drainage: water that flows out of the system after the valve turns off due to elevation changes within the system.

JJ. Low-water-use plants: Plants identified as low-water-use in the current edition of the Water Use Classification of Species list published by the U.C. Extension. (generally, plants that once established, can survive on two irrigations per month during the summer months).

KK. Main Line: the pressurized pipeline that delivers water from the water source to the valve or outlet.

LL. Maximum Applied Water Allowance (MAWA): for design purposes, the upper limit of annual applied water for the established landscaped.

MM. Microclimate: The climate of a specific area in the landscape that has substantially differing sun exposure, temperature, or wind, than adjacent areas or the area as a whole.

NN. Moderate Water Use Plants: ornamental trees, shrubs ground covers, and perennials and other plants recognized as moderate-water-use by WUCOLS.

OO. Mulch: any organic material such as leaves, bark, straw, compost or other inorganic mineral materials such as rocks, gravel, and decomposed granite left loose and applied to the soil surface for the beneficial purposes of reducing evaporation, suppressing weeds, moderating soil temperature and preventing soil erosion.

PP. Operating Pressure: the pressure when water is flowing through the irrigation system.

QQ. Overhead Irrigation: those systems that deliver water through the air (e.g., pop-ups, impulse sprinklers, spray heads, rotors, micro-sprays, etc).

RR. Overspray: Water delivered by an irrigation system outside the targeted landscape area during average operating conditions onto any adjacent hardscapes or other non-landscaped areas during an irrigation cycle, and specifically, for purposes of this Code, limited to maximum of 5% of spray radius area for each nozzle.

SS. Pervious: any surface or material that allows the passage of water through the material and into the underlying soil.

TT. Plant Factor: a factor that, when multiplied by reference evapotranspiration (ETo), estimates the amount of water used by needed plants.

UU. Point of Connection (POC): The location where an irrigation system is connected to water supply.

VV. Precipitation Rate: the rate of application of water measured in inches per hour.

WW. Pressure Regulating Valve: a valve that automatically reduces the pressure in a pipe.

XX. Project Applicant: the individual or entity submitting a Landscape Documentation Package, to request a permit, plan check or design review from the local agency. A project applicant may be the property owner or his or her designee.

YY. Property: Any structure, including but not limited to single family residential, multi-family residential and floating homes, built and/or intended primarily for sheltering or housing of any person and ancillary structures thereto.

ZZ. Property Owner: A person or entity that owns or has the financial authority or control over the property to comply with the requirements set forth in this ordinance.

AAA. Rain Sensor: a system component which automatically shuts off and suspends the irrigation system when it rains.

BBB. Recreational Area: areas dedicated to active play or recreation such as sports fields, school yards, picnic grounds, or other areas with intense foot traffic parks, sports fields and golf courses where turf provides a playing surface.

CCC. Recycled Water: means tertiary treated water which results from the treatment of wastewater, is suitable for direct beneficial use, and conforms to the definition of disinfected tertiary recycled water in accordance with state law.

DDD. Reference Evapotranspiration or ETo: a standard measurement of environmental parameters which affect the water use of plants and are an estimate of the evapotranspiration of a large field of four to seven-inch tall, cool-season grass that is well watered.

EEE. Rehabilitated Landscape: any re-landscaping project that requires a building or grading permit, plan check or design review.

FFF. Residential Customer: The person(s) or entity applying for service from an existing connection for a residential property.

GGG. Runoff: Irrigation water that is not absorbed by the soil or landscape area to which it is applied and which flows onto other non-targeted areas, including runoff into storm drain systems.

HHH. Soils Laboratory Report: the analysis of a soil sample to determine nutrient content, composition and other characteristics, including contaminants, for horticultural purposes.

III. Special Landscape Area (SLA): an area of the landscape dedicated solely to edible plants, areas irrigated with recycled water, water features using recycled water and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface.

JJJ. Sprinkler Head: a device that delivers to the landscape water through a spray nozzle.

KKK. Static Water Pressure: the pipeline or municipal water supply pressure when water is not flowing.

LLL. Station: an area served by one valve or by a set of valves that operate simultaneously.

MMM. Submeter: a separate meter that is located on the private side of the water system and is plumbed to measure all water that flows only through the irrigation system. This meter is to be use by the owner to monitor irrigation water use and will not be read or maintained by the District.

2. Shower heads shall use 2.0 gallons, or less, of water per minute, per bathroom. In the event that multiple shower heads are installed in a single bathroom, the total combined flow of all shower heads shall not exceed 2.0 gpm.

3. Kitchen and lavatory faucets shall use 1.5 gallons, or less, of water per minute;

4. Non-residential services with more than one showerhead or one sink (lavatory) per bathroom facility shall equip these fixtures with self-closing valves.

5. Urinals shall use no more than 0.25 gallons, or less, per flush.

C. Pool Covers. Pool covers are required for all new outdoor swimming pools. (Ord. 385 §1(part), 1999); Ord. 326 §1(part), 1991).

(4) Non-Residential Interior Plumbing Fixtures. All plumbing installed, moved or replaced in any new or existing service shall be high-efficiency fixtures and shall meet the following requirements:

A. Faucets. Lavatory faucets, other than public lavatory or metering faucets, shall deliver 1.5 gallons, or less of water per minute.

1. **Metered Faucets** Self-closing or self-closing metering faucets shall be installed on lavatories intended to serve the transient public, such as those in, but not limited to, service stations, train stations, airports, restaurants, and convention halls. Metered faucets shall deliver no more than .25 gallons of water per use. Self-closing faucets shall deliver no more than .5 gallon per minute.

2. **Public Lavatory** (other than metering) faucets shall deliver 0.5 gallons, or less, of water per minute.

3. **Kitchen, Bar and Utility/Service** (other than hand-washing sinks) faucets shall deliver 2.2 gallons, or less, of water per minute.

B. Private Use, Public Use. *Pursuant to the International Plumbing Code (IPC):*
"In the classification of plumbing fixtures, "private" applies to fixtures in residences and apartments, and to fixtures in nonpublic toilet rooms of hotels and motels and similar installations in buildings where the plumbing fixtures are intended for utilization by a family or an individual... "public" applies to fixtures in general toilet rooms of schools, gymnasiums, hotels, airports, bus and railroad stations, public buildings, bars public comfort stations, office buildings, stadiums, stores, restaurants and other installations where a number of fixtures are installed so that their utilization is similarly unrestricted".

C. Commercial Equipment Specifications.

1. **Dishwashers.** Dishwashers are machines designed to clean and sanitize plates, glasses, cups, bowls, utensils, and trays by applying sprays of detergent solution (with or without blasting media granules) and a sanitizing final rinse. Dishwashers shall meet the current specifications set by the Consortium for Energy Efficiency's (CEE) "High Efficiency Specifications for Commercial Dishwashers and any and all amendments thereto".

2. **Steamers.** A "steamer" or "steam cooker" is a device with one or more food

steaming compartments in which the energy in the steam is transferred to the food by direct contact. Steamers shall meet the current specifications set by the CEE's "High Efficiency Specifications for Commercial Steamers and any and all amendments thereto".

3. **Pre-Rinse Spray Valves.** Pre-rinse valves use a spray of water to remove food waste from dishes prior to cleaning in a dishwasher. Pre-rinse spray valves shall (1) deliver 1.3 gallons, or less, of water per minute based on tested performance by the FSTC and (2) meets the cleaning performance standard of 26 seconds per plate or less, based on the ASTM *Standard Test Method for Performance of Pre-Rinse Spray Valves and any and all amendment thereto.*

4. **Dipper Wells.** A "dipper well" is a basin into which clean tap water flows constantly to provide a fresh supply of water for soaking utensils. The run-off goes down the drain. Dipper well flow rate shall be .3 gallon, or less, per minute.

5. **Ice Machines.** Ice machine are a factory-made assembly (not necessarily shipped in one package) consisting of a condensing unit and ice-making section operating as an integrated unit, with means for making and harvesting ice. It is an assembly that makes up to 4,000 lbs of ice per day at Standard Ratings Conditions, as defined in Section 5.2.1 of ARI Standard 810-2006, and may also include means for storing or dispensing ice, or both. **I**ce machines shall (1) be Energy Star qualified and (2) meet the current highest Tier specification set by the CEE's "High Efficiency Specifications for Air-Cooled Ice Machines and any and all amendments thereto".

6. **Clothes Washers.** "Commercial clothes washer" means a soft mount front-loading or soft mount top loading clothes washer with clothes container compartment no greater than 3.5 ft^3 for horizontal axis clothes washers, or nor greater than 4.0 ft^3 for vertical axis clothes washers, that is designed for use in (1) applications where the occupants of more than one household will be using it, such as multi-family housing common areas and coin laundries, or (2) other commercial applications. Commercial clothes washers shall meet the minimum Modified Energy Factor (MEF) and maximum Water Factor (WF) corresponding to the highest efficiency machines on the most recent CEE "High Efficiency Specification for Commercial, Family-Sized Clothes Washers and any and all amendments thereto". As of January 1, 2007, the highest efficiency machines have a minimum MEF of 2.20 and a maximum WF of 4.5.

7. **Heating, Ventilation and Air Conditioning (HVAC) Equipment.** HVAC Equipment shall eliminate all once-through cooling, replacing with an air-cooled system or a cooling tower. For cooling towers, the following are recommended:

   a) flow submeters on make-up and bleed-off lines; submeters should, at a minimum, be capable of totaling the flow.

   b) conductivity controllers that activate the blowdown valve for dissolved solids control;

   c) overflow sensors on the overflow pipes

NNN. Swing Joint: an irrigation component that provides a flexible, leak-free connection between the emission device and lateral pipeline to allow movement in any direction and to prevent equipment damage.

OOO. Turf: A mat layer of monocotyledonous plants with shallow rooting structures requiring frequent watering during the growing season; i.e., cool or warm season grass consisting, but not limited to Blue, Rye, Fescue, Bent, Bermuda, Kikuyu, St. Augustine, Zoysia, and Buffalo.

PPP. Valve: a device used to control the flow of water in the irrigation system.

QQQ. Valve Manifold: a one-piece manifold for use in a sprinkler valve assembly that includes an intake pipe having a water inlet and a plurality of ports adapted for fluid connection to inlets.

RRR. Water Budget: an allocation of water based on plant water needs, used to determine the billing tiers for customers with dedicated landscape irrigation meters.

SSS. Water Feature: a design element where open water performs an aesthetic or recreational function. Water features include ponds, lakes, waterfalls, fountains, artificial streams, spas and swimming pools (where water is artificially supplied). The surface area of water features is included in the high water use hydrozone of the landscape area.

TTT. Weather Based or Sensor Based Irrigation Control Technology: uses local weather and landscape conditions to tailor irrigation schedules to actual conditions on the site or historical weather data.

UUU. WUCOLS: the Water Use Classification of Landscape Species published by the University of California Cooperative Extension, the Department of Water Resources and the Bureau of Reclamation, 2000.

(Ord. 403 §4, 2004: Ord. 394 §1, 2001: Ord. 385 §1(part), 1999): Ord. 326 §1(part), 1991).

(3) Requirements For All Services.

A. Pressure Regulation. A pressure-regulating valve shall be installed and maintained by the consumer if static service pressure exceeds 80 pounds per square inch (psi), and be set at a maximum operating pressure of 60 psi at the regulator outlet. The pressure-regulating valve shall be located between the meter and the first point of water use, or first point of division in the pipe, and pressure-relief valves and other plumbing safety devices shall be installed as required by local regulation. The operating pressure requirement may be waived if the consumer presents evidence satisfactory to the District that high pressure is necessary in the design and that no water will be wasted as a result of higher pressure operation.

B. Interior Plumbing Fixtures. All plumbing installed, replaced or moved in any new or existing service shall be high-efficiency fixtures and shall meet the following requirements:

1. Toilets shall use 1.28 gallons, or less, per flush;

d) baffles or drift eliminators

All cooling towers shall be monitored and maintained in a manner consistent with applicable regulatory guidelines and manufacturers recommendations.

(5) Water Efficient Landscape.

A. After January 1, 2010, this ordinance shall apply to all of the following:

1. New construction and rehabilitated landscapes for public agency projects and private development projects with a landscape area equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check or design review;

2. New construction and rehabilitated landscapes which are developer-installed in single-family and multi-family projects with a landscape area equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check, or design review;

3. New construction landscapes which are homeowner-provided and/or homeowner-hired in single family and multi-family residential projects with a total project landscape area equal to or greater than 5,000 square feet requiring a building or landscape permit, plan check or design review.

B. This ordinance shall not apply to:

1. Registered local, state or federal historical sites;

2. Ecological restoration projects that do not require a permanent irrigation system;

4. Mined-land reclamation projects that do not require a permanent irrigation system; or

5. Plant collections, as part of botanical gardens and arboretums open to the public.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

C. Landscape Design Plan. For each landscape project subject to this chapter applicants shall submit a landscape design plan in accordance with the following:

1. Amendments, Mulching and Soil Conditioning: A minimum of 8" of non-mechanically compacted soil shall be available for water absorption and root growth in planted areas.

2. Incorporate compost or natural fertilizer into the soil to a minimum depth of 8" at a minimum rate of 6 cubic yards per 1000 square feet or per specific amendment recommendations from a soils laboratory report. A minimum 3" layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers or direct seeding applications.

3. Plants.

(a) Selected plants shall not cause the Estimated Water Use to exceed the Maximum Applied Water Allowance (see calculation in Appendix A).

(b) Plants with similar water use needs shall be grouped together in distinct hydrozones and where irrigation is required the distinct hydrozones shall be irrigated with separate valves.

(c) Low and moderate water use plants can be mixed, but the entire hydrozone will be classified as moderate water use for MAWA calculations.

(d) High water use plants shall not be mixed with low or moderate water use plants.

(e) All non-turf plants shall be selected, spaced, and planted appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the project site.

(f) Turf shall not be allowed in the following conditions: Slopes exceeding 10%, planting areas 8 feet wide or less, street medians, traffic islands, planter strips or bulbouts of any size.

(g) Invasive plants as listed by the Cal-IPC are prohibited.

(h) Fire Safe Landscape Practices. The requirements in this chapter are intended to support, and be in compliance with, all local and State requirements related to Fire Safe Landscaping practices, including, but not limited to, requirements for Wildlife Urban Interface zones as specified by local authority.

4. Water Features.

(a) Re-circulating water systems shall be used for water features.

(b) Recycled water shall be used when available and approved for use onsite.

5. Irrigation Design Plan.

(a) For each landscape project subject to this chapter applicants shall submit an irrigation design plan that is designed and installed to meet irrigation efficiency criteria as described in Appendix A (MAWA) and in accordance with the following:

(1) Irrigation systems with meters 1 ½" or greater require a high-flow sensor that can detect high flow conditions and have the capabilities to shut off the irrigation system.

(2) Isolation valves shall be installed at the point of connection and before each valve or valve manifold.

(3) High-efficiency controllers, weather-based, or other sensor based self-adjusting irrigation controllers shall be required.

(4) Rain sensors shall be installed for each irrigation controller.

(5) Pressure regulation and/or booster pumps shall be installed so that all components of the irrigation system operate at the manufacturer's recommended optimal pressure.

(6) Irrigation system shall be designed to prevent runoff or overspray onto non-targeted areas, and wherever overhead irrigation is located directly adjacent to hardscape areas, where runoff water flows into the curb and gutter; all spray heads shall be setback a minimum of 24" from hardscape edges.

(7) Point source irrigation is required where plant height at maturity will affect the uniformity of an overhead system.

(8) Minimum 24" setback of overhead spray irrigation is required where turf is directly adjacent to a continuous hardscape area where runoff water flows into the curb and gutter.

(9) Slopes greater than 15% shall be irrigated with point source or other low-volume irrigation technology.

(10) A single valve shall not irrigate hydrozones that mix high water use plants with moderate or low water use plants.

(11) Trees shall be placed on separate irrigation valves except when planted in turf areas.

(12) Sprinkler heads, rotors and other emission devices on a valve shall have matched precipitation rates.

(13) Head-to-head coverage is required unless otherwise directed by the manufacturer's specifications.

(14) Swing joints or other pipe protection components are required on above-ground irrigation piping.

(15) Check valves shall be installed to prevent low-head drainage.

6. Separate District landscape water service meters shall be required for all new and renovated landscapes, other than single-family and two-unit residential landscapes, for which the District has calculated a MAWA of 75,000 gallons or more of water. A private submeter shall be required for all points of connection on single-family and two-unit residential sites for which the District has calculated a MAWA of 75,000 gallons or more of water.

7. Documentation for Compliance. The following documentation is to be presented to the District at each of the three steps of review defined below. This documentation is required for compliance with this Ordinance.

(a) STEP 1: FINAL DESIGN REVIEW. For those landscape projects that require Design Review or a Utilities Certificate, applicants shall submit the following documentation to the District:

(1) Completed Appendix A, Maximum Applied Water Allowance (MAWA)

(2) The landscape planting design plan that accurately and clearly identifies and depicts new and existing trees, shrubs, groundcovers, turf, and any other planting areas; plants by botanical name and common name; plant sizes and quantities; property lines, new and existing building footprints, streets, driveways, sidewalks and other hardscape features; pools, fountains, water features.

(3) A conceptual irrigation design plan or statement which describes irrigation methods and design actions that will be employed to meet the irrigation specifications of this chapter.

(b) STEP 2: PLAN CHECK. The following shall be reviewed and approved prior to the application for a water service from an existing connection, whether it is a new, increased, or modified water service, in a customer's name for a property:

(1) Appendix A and the planting design as submitted at step 1 above, in connection with the Design Review or Utilities Certificate application.

(2) The irrigation plan drawn at the same scale as the planting plan that:

(AA) Accurately and clearly identifies and depicts irrigation system point of connection;

(BB) Accurately and clearly identifies and depicts irrigation system components, e.g. controller, pipe, remote-control valves, sprinklers and other application devices, rain shut-off device, check valves, pressure regulating devices, backflow prevention devices.

(CC) Includes the Hydrozone Table (See Appendix B).

(DD) Where slopes exceed 10%, a grading plan drawn at the same scale as the planting plan that accurately and clearly identifies finished grades, drainage patterns, pad elevations, spot elevations and storm water retention improvements. The grading design plan shall contain the following statement: "I have complied with the criteria of the ordinance and applied them accordingly for the efficient

use of water in the grading design plan" and shall bear the signature of a licensed professional as authorized by law.

(c) STEP 3: COMPLETION OF INSTALLATION. Upon installation and completion of the landscape, applicant shall submit Appendix C, the Certificate of Completion.

The certificate shall be accompanied by an irrigation audit that contains the following:

(1) Operating pressure of the irrigation system.

(2) Distribution uniformity of overhead irrigation.

(3) Precipitation rate of overhead irrigation.

(4) Report of any overspray or broken irrigation equipment.

(5) Irrigation schedule including:

(6) Plant establishment irrigation schedule.

(AA) Regular irrigation schedule by month including: plant type, root depth, soil type, slope factor, shade factor, irrigation interval (days per week), irrigation runtimes, number of start times per irrigation day, gallons per minute for each valve, precipitation rate, distribution uniformity and monthly estimated water use calculations.

(BB) An irrigation maintenance schedule timeline shall be attached to the certificate of completion that includes: Routine inspections, adjustment and repairs to the irrigation system, aerating and dethatching turf areas, replenishing mulch, fertilizing, pruning and weeding.

(d) A final inspection shall be performed by District staff to verify policy compliance. Once the completion form is received, the District will conduct an inspection to check for installation of PRVs, rain shut-off devices proper labeling of irrigation controllers, and mulch; however, the District reserves the right to perform site inspections at any time before, during, or after irrigation system and landscape installation and to require corrective measures if requirements of this Ordinance are not satisfied. If corrective measures are necessary, the District will set the water budget to zero until corrective measures are complete.

Advanced notice is required for all inspections. Inspections can be requested for either morning or afternoon during regular business hours. Final approval shall not be completed until the landscape inspection is approved. An extension of the approval process, to complete landscape and irrigation installation, shall be requested and shall be approved District staff.

(6) Drinking Water Served Upon Request Only.

By January 1, 2011, eating or drinking establishments, including but not limited to a restaurant, hotel, café, cafeteria, bar, or other public place where food or drinks are sold, served, or offered for sale, are prohibited from providing drinking water to any person unless expressly requested.

(7) Commercial Lodging Establishments Must Provide Guests Option to Decline Daily Linen Services.

By January 1, 2011, hotels, motels and other commercial lodging establishments shall provide customers the option of not having towels and linen laundered daily. Commercial lodging establishments shall prominently display notice of this option in each bathroom using clear and easily understood language.

(8) Grey Water Systems. This section is reserved for future provisions regarding grey water systems.

(9) Rain Water Harvesting Systems. This section is reserved for future provisions regarding rain water harvesting systems.

(10) Other Provisions. The General Manager will consider and may allow the substitution of design alternatives and innovation which may equally reduce water consumption for any of these requirements. The General Manager may accept documentation methods, water allowance determination, and landscape and irrigation design requirements of the State of California Model Water Efficient Landscape Ordinance instead of Chapters 14-30.040 and 14-30.050 of these requirements where it can be demonstrated that the State procedure will more effectively address the design requirements of the project.

(11) Provisions For Appeal. The applicant or any affected person may appeal the final decision of staff regarding plan check or final inspection to the General Manager, The decision of the General Manager shall be final. An appeal regarding plan check shall be submitted prior to the installation of the landscape or it will be deemed to have been waived.

(12) Penalties and Violations.

A. Misdemeanor: Any violation of Section 13.02.021 may be prosecuted as a misdemeanor punishable by imprisonment in the county jail for not more than thirty (30) days, or by a fine not exceeding one thousand dollars ($1,000), or by both.

B. Penalties: Penalties for failure to comply with any provisions of Section 13.02.021 are as follows:

1. First Violation: The District will issue a written warning and deliver a copy of this ordinance by mail, hand, facsimile or email.

2. Second Violation: A second violation within the preceding twelve (12) calendar months is punishable by a fine not to exceed one hundred dollars ($100).

3. Third Violation: A third violation within the preceding twelve (12) calendar months is punishable by a fine not to exceed two hundred and fifty dollars ($250).

4. Fourth and Subsequent Violations: A fourth and any subsequent violation is punishable

by a fine not to exceed five hundred dollars ($500).

5. Water Flow Restrictor: In addition to any fines, the District may install a water flow restrictor device of approximately one gallon per minute capacity for services up to one and one-half inch size and comparatively sized restrictors for larger services after written notice of intent to install a flow restrictor for a minimum of forty-eight (48) hours.

C. Cost of Flow Restrictor and Disconnecting Service: A person or entity that violates this ordinance is responsible for payment of the District's charges for installing and/or removing any flow restricting device pursuant to the District's schedule of charges then in effect. The charge for installing and/or removing any flow restricting device shall be paid to the District before the device is removed.

D. Separate Offenses: Each day that a violation of this ordinance occurs is a separate offense.

E. Notice and Hearing:

1. The District will issue a Notice of Violation by mail or personal delivery at least ten [10] days before taking enforcement action. Such notice shall describe the violation and the date by which corrective action shall be taken. A customer may appeal the Notice of Violation by filing a written notice of appeal with the District's Water Conservation Manager no later than the close of business on the day before the date scheduled for enforcement action. Any Notice of Violation not timely appealed will be final. Upon receipt of a timely appeal, a hearing on the appeal will be scheduled, and the District will mail notice of the hearing date to the customer at least ten (10) days before the date of the hearing.

2. Pending receipt of a written appeal or pending a hearing pursuant to an appeal, the District may take appropriate steps to prevent the unauthorized use of water as appropriate to the nature and extent of the violations and the current declared water level condition.

3. This notice and hearing procedure shall not apply to those water waste situations charged as misdemeanors.

(12.) Forms. The following forms shall be submitted as outlined in Section 6 of this chapter: Appendix A, Maximum Applied Water Allowance; Appendix B, Hydrozone Table; Appendix C, Certificate of Completion.

Appendix A

Maximum Applied Water Allowance

The following calculations will help you determine your site specific water budget and establish a planting mix that will allow you to meet your water budget. Your Estimated Total Water Use must be less than your Maximum Applied Water Allowance.

1.) Maximum Applied Water Allowance (MAWA)

MAWA = (ETo) (0.62)[(0.6x LA) + (0.4 x SLA)]

Where:
ETo = Annual Net Reference Evapotranspiration (inches)
0.6 = ET Adjustment Factor
LA = Landscaped Area (square feet)
0.62 = Conversion factor (to gallons per square foot)
SLA = Portion of the landscape area identified as Special Landscape Area (square feet)
0.4 = the additional ET adjustment factor for Special Landscape Area (1.0 - 0.6 = 0.4)

A.) Net Evapotranspiration Calculation

(Annual ETo)

(Annual Rainfall) x .25 = (Effective Rainfall)

Net Evapotranspiration Calculation = Annual ETo - Effective Rainfall =

B.) Adjusted Landscape Area Calculation

(Landscaped Area) x 0.6 Adjustment Factor =

(Special Landscaped Area) x 0.4 Adjustment Factor =

Sum of Adjusted Landscape Area =

MAWA = x 0.62 x =

2.) Estimated Total Water Use (ETWU)

A.) Net Evapotranspiration Calculation

Net Evapotranspiration Calculation = Annual ETo - Effective Rainfall =

B.) Adjusted Landscape Area Calculation

(Low water use plant sqft) x 0.3 =

(Moderate water use plant sqft) x 0.6 =

(High water use plant sqft) x 1.0 =

Sum of Adjusted Landscape Area =

ETWU = x 0.62 x ÷

Irrigation Efficiency Factor		
Percent of total landscape Irrigated with Drip		
0-25%		0.71
26-50%		0.75
51-75%		0.80
76-100%		0.85

Appendix B
Hydrozone Table

This worksheet is filled out by the project applicant and it is a required element of the Landscape Documentation Package. Please complete the hydrozone table(s) for each hydrozone. Use as many tables as necessary to provide the square footage of landscape area per hydrozone.

Hydrozone*	Zone or Valve	Irrigation Method**	Area (Sq. Ft.)	% of Landscape Area
	Total			**100%**

Summary Hydrozone Table		
Hydrozone*	**Area (Sq. Ft.)**	**% of Landscape Area**
High Water Use		
Moderate Water Use		
Low Water Use		
	Total =	100%

***Hydrozone**
HW= High Water Use Plants
MW=Moderate Water Use Plants
LW=Low Water Use Plants

****Irrigation Method**
MS=Micro-spray
S=Spray
R=Rotor
B=Bubbler
D=Drip
O=Other

Appendix C

Certificate of Completion

This certificate is filled out by the project applicant, landscape architect and landscape contractor upon completion of the landscape project.

Part 1. Project Information Sheet

Date		
Project Name	Project Address	
Name of Project Applicant	Telephone No.	
	Fax No.	
Title	Email Address	
Company	Street Address	
City	State	Zip Code

Property Owner or his/her designee:

Name	Telephone No.	
	Fax No.	
Title	Email Address	
Company	Street Address	
City	State	Zip Code

"I/we certify that I/we have received copies of all the documents within the Landscape Documentation Package and that it is our responsibility to see that the project is maintained in accordance with the Landscape and Irrigation Maintenance Schedule."

Property Owner Signature Date

Part 2. Landscape Architect and Landscape Contractor/Installer

Landscape Architect Name	Telephone No.	
	Fax No.	
Title	Email Address	
License No. or Certification No.	Telephone No.	
Company	Street Address	
City	State	Zip Code

Landscape Contractor/Installer Name	Telephone No.	
	Fax No.	
Title	Email Address	
License No. or Certification No.	Telephone No.	
Company	Street Address	
City	State	Zip Code

"I/we certify that the work has been completed in accordance with the ordinance and that the landscape planting and irrigation installation conform to the criteria and specifications of the approved Landscape Documentation Package. Additionally, per section VI of this ordinance, a landscape audit and irrigation maintenance schedule have been completed and are attached to this certificate showing that the system meets the efficiency requirements used in the Maximum Applied Water Allowance calculation"

Landscape Architect Signature Date

Landscape Contractor Signature Date

SECTION 3. Amendment: Chapter 13.03 Section 13.03.040 entitled "Efficient Plumbing Fixtures" is amended to read as follows:

> Any plumbing fixture in any existing service which is replaced, added or moved shall conform to the criteria contained in District Code Section 13.02.021.

SECTION 4. Repeal of Code Sections: The following District Code Sections have been repealed in their entirety:

- Section 11.60.010 entitled "Purpose."
- Section 11.60.020 entitled "Definitions."
- Section 11.60.030 entitled "Requirements for all services."
- Section 11.60.040 entitled "Landscape requirements for single-family residence and two unit residential services with less than one-half acre irrigated area (new and modified landscapes)."
- Section 11.60.050 entitled "Landscape requirement for single-family and two unit residences with one half acre or more irrigated area and all services other than single family and two unit residence (new and modified landscapes)."
- Section 11.60.056 entitled "Water conservation requirements at the time a residential customer makes application for water service from an existing connection."
- Section 11.60.060 entitled "Other provisions."

SECTION 5. Environmental Determination:

> This project has been reviewed for compliance with the California Environmental Quality Act and qualifies for an exemption under the General Rule section 15061(b)(3) because it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment.

SECTION 6. Severability: If any section, subsection, sentence, clause, phrase, portion or part of this ordinance is for any reason held to be invalid or unconstitutional by any court of competent jurisdiction, such section shall not affect the validity of the remaining portions of this code. The Board of Directors hereby declares that it would have adopted this ordinance and each section, subsection, sentence, clause, phrase, part or portion thereof, irrespective of the fact that any one or more sections subsections, clauses, phrases, parts or portions be declared invalid or unconstitutional.

SECTION 7. Effective Date: This ordinance shall be effective on the day of its adoption.

SECTION 7. Findings of Necessity: The Board of Directors, after considering all of the information and testimony presented at its December 16, 2009 meeting and all of the comments and protests lodged in relation thereto and in the other portions of the record of this rate-making, finds as follows:

I. Historic and Current Water Supply Overview

A. Water is a finite and precious resource.

B. The District's water supply currently remains limited to water captured in its seven reservoirs; water transported from the Russian River via the North Marin aqueduct; and recycled water produced at the Las Gallinas Valley Sanitary District Plant (for a variety of non-potable purposes). About 73% of the District's water supply comes from its reservoirs, 25% from the Russian River through the North Marin aqueduct and 2% from recycled water. Although options to increase the District's water supply are being evaluated, the implementation of any preferred alternative will take several years. For the last many years, water demand is outpacing water supply. The Board recognized that imbalance in July 2000.

C. In 2005, the District, via its Urban Water Management Plan, evaluated its current water supply against its current and future estimated demands and projected deficits of 700 acre feet in 2005; 3,700 acre feet in 2010, 5,300 acre feet in 2015, 6,400 acre feet in 2020 and 7,400 acre feet in 2025.

D. In response to this supply – demand imbalance, the Board, over the last eight years, has been exploring alternative water supply sources. A San Francisco Bay desalination pilot plant project was constructed and operated in 2005. A Final Environmental Impact Report (EIR) evaluating a desalination facility has been certified by the Board. On August 19, 2009, the Board selected a 5mgd expandable to 15 mgd desalination plant as the preferred alternative, approved that project and directed staff to pursue the permitting process to determine whether the desalination project was feasible. In approving the desalination project, the Board was mindful of the fact that there are many "off roads" and future opportunities for public in put before construction of the plant commenced and that project approval was a necessary next step begin the permitting stage of the project which will assist in determining the desalination project's feasibility.

E. Over the last several years, the Board has been exploring whether additional conservation strategies could alleviate the water supply deficit. In January 2006, the Board received a report from Maddaus Water Management that evaluated the costs and benefits of various conservation activities. The Board then authorized a $1,240,000 conservation program to reduce water use for outdoor irrigation.

F. In June 2007, District staff updated the agency's Water Conservation Master Plan ("Master Plan"), which was presented to the Board and which the Board reviewed and approved. District staff projected additional water savings from various conservation programs as a means to reduce the supply – demand imbalance. In fiscal year 2007-2008, the Board increased funding for water conservation programs to $1,867,000 to launch a new water

programs including a high-efficiency toilet rebate, a Bay Friendly Landscape program, commercial high-efficiency urinal and direct-installation toilet and school education programs.

G. The Master Plan indicated that the District's customers were responding positively to the agency's new conservation strategy. It noted that the then-new high-efficiency toilet rebate program started in January 2007 had issued more than 300 toilet rebates over the first 3 months. By comparison, the Master Plan noted that other larger Bay Area water agencies had completed only 150-300 high efficiency toilet rebates in all of 2006.

H. The Master Plan noted that the District's high-efficiency clothes washer program continued to issue rebates for an average of 1,200 washers each year, after 12 years in operation and more than 9,000 rebates.

I. After review of the alternative programs outlined in the Master Plan, the Board authorized $2,459,000 in funding in fiscal year 2007-2008 for expanded water conservation programs. That funding anticipated expansion of programs in leak detection, rebates and other water-conservation incentives.

J. Based upon rainfall patterns for the District, very little rainfall occurs from May to October each year. In recent years, the overall summer peak-period has found water use averages about twice winter use. Outdoor water use is more discretionary than interior water use. Some reductions in water use can be achieved by reduction in the demand for water for exterior uses.

K. As a result of Conservation Assistance Program (CAP) consultations with single-family residential customers concerning water use inefficiencies, District staff learned that typically 15%-30% of water used for irrigating (water use outside the home) is wasted and the most typical cause of the waste is excess irrigation.

L. In 2007, the 7 % of the District's consumers consuming the largest volume of water consumed 22% of the District's water in the summer months. In the winter months the 2% of customers consuming the largest volume of water consumed 9% of the water.

M. Although the District's Conservation Program has made significant strides, more is necessary.

N. After almost twenty years of innovative and aggressive conservation efforts, more needs to be accomplished. The water conservation program required by this ordinance is necessary to conserve additional water for beneficial use and to preserve the District's water supply.

II. Current Conservation Measures.

A. The California Legislature's adoption of the Water Conservation in Landscaping Act of 2006 (Assembly Bill 1881, Laird) under the California Code of Regulations, Title 23, Waters Division 2, Department of Water Resources that requires cities, counties, and charter cities and charter counties and special districts to adopt landscape water conservation ordinances by January 1, 2010.

B. Consequently, updating the District's water conservation ordinance is mandated by State law and provides a basis upon which to further reduce water consumption within the District's service area.

C. Conservation within the District's service area continues to be necessary, as current District projections for water supply under water supply conditions similar to a repeat of the drought of record (1976-77) anticipate a water deficit in the amount of 3,700 acre feet in 2010, 6,400 acre feet in 2020 and 7400 acre feet in 2025.

D. State legislation is pending that, if adopted, would potentially require a 20% reduction in water use State wide by 2020.

E. The Board of Directors determines that this conservation program is a fundamental and necessary step in its on-going efforts to reduce overall water use District wide, especially discretionary summer water use for irrigation.

F. As a signatory of the Memorandum of Understanding with the California Urban Water Conservation Council, amended December 10, 2008 the District is required to implement the measures described in the ordinance revision.

G. During the latter part of the 2008-9 and the current 2009-2010 fiscal years the District has been experiencing a significant drop in consumption, which it attributes to multiple factors, including its elevated conservation efforts, a cooler summer and financial market conditions.

H. Mindful of the fact that water use doubles during the normally warm summer months and that in any given year the District's reservoirs store a two year supply of water, the Board determines that it reasonable and necessary to expand its conservation effort along the lines described in this ordinance to further preserve and conserve the District's water supply.

I. Careful water management requires the implementation of a host of water conservation at all times, not just in times of drought.

J. Article X Section 2 of the California Constitution declares that the general welfare requires that water resources be put to beneficial use to the fullest extent of which they are capable and that the waste, unreasonable use or unreasonable method of use of water be prevented,, and that conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and the public welfare..

K. California Water Codes Section 375 authorized water suppliers to adopt and enforce a comprehensive water conservation program to reduce water consumption and conserve supplies.

L. The adoption and enforcement of the water conservation program contained in this ordinance is necessary to manage the District's potable water supply and avoid or minimize the effects of drought and shortage within the District's service area. Such a program is also necessary and essential to conserve the District's water supply and ensure the sustainability and reliability of the District's water supply and prevent waste.

PASSED AND ADOPTED this16th day of December, 2009, by the following vote of the Board:

AYES: Directors Behar, Gibson, Koehler, Quinter and Russell

NOES: None

ABSENT: None

/s/
Vice President, Board of Directors

ATTEST:

/s/
Secretary, Board of Directors