APPENDIX F

Focused Demand Reductions Based on City-Specific Conservation Measures

1. INCREMENTAL CONSERVATION METHODOLOGY

1.1 Introduction

This section describes in detail the City's demand reductions based on the incremental savings methodology. This methodology applies specific City and state conservation requirements to the City's average residential use of 0.52 AFY/du (baseline). The City has been committed to water conservation for many years, as is reflected by its existing water demands. The City's existing conservation programs, described herein, are a component of the City's baseline water use.

1.2 Clean & Green: Report and Recommendations

In June 2008, the City released its Clean & Green: Report and Recommendations (Clean & Green Report) in which the City recommends both expanded and new conservation programs. The Clean & Green Report identifies existing conservation programs as a baseline for improved conservation.

1.3 New and Expanded Conservation

As part of the policy contained in the Clean & Green Report, the City advises that all new projects like this Project, and, whenever possible all redevelopment projects, should be designed to keep as much water as possible onsite to allow for penetration into the soil to filter and clean the water and recharge the aquifers. For example, retention/detention basins/dry wells, pervious soil and paving, and landscaping can be used to minimize and filter runoff.[1]

Additionally, the City has begun to develop a more comprehensive water conservation/ customer incentive program which will be used to help achieve real water savings and sustainability. These include the following four areas:

- Develop an expanded green building program through which reduced water consumption is achieved;
- Install efficient equipment, appliances and irrigation systems which will reduce demand;
- Implement requirements for all new and redeveloped private and public properties to capture all stormwater runoff and provide methods for the water to filter into the soil to replenish the water aquifers; and
- Implement and expand education programs to increase public awareness and knowledge of water conservation measures and incentives available.[2]

[1] Clean & Green Report, p. 10.
[2] Clean & Green Report, p. 11.

The Clean & Green Report recommends that the City encourage and offer incentives for the installation of water-efficient equipment, appliances and irrigation systems and for reducing water consumption 20% or more over the previous year during the same time period; and to develop new and expand existing education programs to increase public awareness and knowledge of available water conservation measures and incentives.[3] For example, to educate the public, the City installed an artificial turf demonstration around City Hall.[4]

1.4 City's Best Management Practices

The City is not currently a signatory to the California Urban Water Conservation Council's (CUWCC) Memorandum of Understanding Regarding Urban Water Conservation in California (MOU).[5] However, the City has implemented the following BMPs outlined in the MOU:

- Residential water surveys;
- Residential plumbing retrofits, including advertising through direct mail flyers;
- System water audits, leak detection and repair;
- Installation of meters and commodity rates for all customers;
- Large landscape conservation programs and incentives, including identification of opportunities for use of recycled water substitution for potable water supplies;
- High-efficiency washing machine rebate programs;
- Public information programs, including press releases, quarterly newsletters, door tags and bill inserts on water conservation measures and programs;
- A school education program through Water Wise School Education;
- Conservation programs for commercial and industrial accounts;
- Conservation pricing;
- The City's Superintendent of Public Works serves as a part-time water conservation coordinator;
- A wastewater prohibition;
- Residential ultra-low-flush toilet replacement program.[6]

On January 15, 2005, the City started a program to distribute low-flow showerheads to its residential customers. Approximately 200 units were made available to the public at the Public Works customer service counter. The City also plans to sponsor a rebate program for the replacement of conventional toilets with low-flow toilets. In its 2007

[3] Clean & Green Report, p. 11.
[4] City of Banning, Conservation Chronicles (July 2007), http://ca-banning.civicplus.com/DocumentView.aspx?DID=389.
[5] In the 2005 UWMP, the City states that although it is not a member of CUWCC, it has implemented nine of the 14 CUWCC BMPs outlined in the MOU. *See* 2005 UWMP, p. 7-2; *see also* Draft 2010 UWMP, pp. 90–107.
[6] 2005 UWMP, pp. 7-2 through 7-9; *see also* Draft 2010 UWMP, pp. 90-107

Water Conservation Brochure, the City addressed the recent retrofitting of all urinals in most City facilities, including adding 25 waterless urinals at Banning High School.[7]

Water conservation measures, including installation of low-flow toilets, development of a water conservation plan for landscape improvements and the use of recycled water, will be incorporated into the Project. The projected savings from these programs City-wide is presented in the tables below.

1.5 Demand Reductions In Indoor Water Use

The City's 2005 UWMP[8] indicates that 50% of residential water is used indoors and the remaining half is used outdoors. This ratio, based on current analyses, is still valid and therefore is used in this WSA.[9]

The City projects that new residences will use 39% less water than existing residences. Half of this reduction[10] results from the City's existing indoor water use regulations and the state's plumbing code requirements enacted in 1992, which require efficient plumbing fixtures in all new construction (such as low-flow shower heads and faucets and low-flush toilets). The additional 20% reduction results from post-1992 requirements and the 2010 California Green Building Standards Code (CGBSC),[11] which sets additional standards for fixture flow rates in new construction. The CGBSC standards came into effect in 2011 and require an additional 20% reduction in indoor residential water use. These new standards are enforced by the City as required.

1.5.1 1992 Code Change and 2010 Green Building Standards

In 1992, through the federal Energy Policy Act of 1992 and state law amendments, major changes were enacted to the state and City plumbing codes, requiring greater water conservation and efficiency in plumbing fixtures in all new construction as of January 1, 1994.[12] City records indicate that approximately 72% of the City's existing homes were built prior to 1992, and the remaining 28% of the existing homes were built after 1992.[13] These records indicate that the recent historic average residential water

---

[7] City of Banning Conservation Chronicles (July 2007), http://ca-banning.civicplus.com/DocumentView.aspx?DID=389.

[8] 2005 UWMP, p. 2-2.

[9] *See also* City's Draft 2010 UWMP, pp. 42, 60.

[10] This constitutes 20% of the total water use attributable to indoor water demand reduction, or otherwise a 40% reduction in indoor water use.

[11] 2010 California Green Building Standards Code, Cal. Code Regs., tit. 24, § 101 *et seq*.

[12] See H.R. No. 776, 102nd Cong., 2d Sess. (1992) [requiring faucets, showerheads and toilets manufactured after January 1, 1994 to meet certain requirements]; Stats. 1992, ch. 1347, § 1 (S.B. 1224) [amending Cal. Health & Safety Code, § 17921.3 to require that all toilets or urinals sold or installed in the state as of January 1, 1994 must meet certain requirements].

[13] The City examined title records for houses built prior to 1992. Because, however, the new plumbing code requirements did not take effect until 1994, the percentage of homes that were built prior to 1994 with inefficient plumbing fixtures is greater than 72%, and provide the City with additional conservation opportunities.

use factor being used for the City — 0.52 AFY per household — includes only a small percentage of homes with retrofitted plumbing fixtures. In other words, most of the City's existing homes are older and have less efficient plumbing fixtures. Future use of water efficient home appliances (including dishwashers and clothes washers) is anticipated to further reduce indoor water demand.

The City conducted studies to determine what impact the 1992 code change has had on water demands. In a June 2010 analysis, Gouvis Engineering Consulting Group, Inc. found that water use savings for household indoor plumbing fixtures (showers, toilets, faucets) in post-1992 homes are as much as 39.8% more efficient than older homes.[14] The City also examined individual water records for a sample of homes built prior to 1992, and compared them with residences built since 1992 (2002-2005). The compare-son that was conducted between similarly sized homes, lots and landscaping shows that post-1992 homes are more than 50% water efficient than pre-1992 homes. Based on this sampling, the average new home uses approximately 48% less water. This sampling may also reflect water savings from more efficient appliances (dishwashers, clothes washers) and landscape irrigation, as well as plumbing fixtures. Although the City's studies demonstrate that indoor water uses will be reduced by as much as 50% for new homes, this WSA uses a conservative factor of a 40% reduction.[15]

Additional indoor conservation requirements will impact new residential development. Under the 2010 CGBSC, new residences must reduce their indoor potable water use by 20% beginning on January 1, 2011.[16] These standards apply to the planning, design, operation, construction, use and occupancy of every newly constructed building or structure.[17] These reductions can be demonstrated in one of two ways: (1) by providing a calculation demonstrating a 20% reduction in the building water use "baseline;" or (2) by proof that each plumbing fixture and fitting meet reduced flow rates.[18] For example, the 2010 CGBSC calls for fixtures to meet certain flow rates: residential showerheads (2.5 gpm (80 psi));[19] lavatory residential faucets (2.2 gpm (60 psi));[20] kitchen faucets (2.2 gpm (60 psi));[21] replacement aerators (2.2 gpm);[22] toilets (1.6 gallons per flush (gpf)); and urinals (1.0 gpf).[23]

---

[14] Gouvis Engineering Consulting Group, Inc., Water Usage Comparison of Pre-1992 Efficiency Standards vs. Present Standards (June 15, 2010).

[15] Half of this reduction results from the 1994 state plumbing code requirements and the other half results from the 2010 CGBSC.

[16] Cal. Code Regs. tit. 24, § 4.303.1.

[17] Cal. Code Regs. tit. 24, § 101.3. "Building" includes the construction, alteration, movement, enlargement, replacement, repair, use and occupancy, location, maintenance, removal and demolition of every structure or any appurtenance connected or attached to such buildings or structures. Cal. Code Regs. tit. 24, § 101.5.1.

[18] Cal. Code Regs., tit. 24, § 4.303.1.

[19] Cal. Code Regs. tit. 24, Table 4.303.1.

[20] Cal. Code Regs. tit. 24, Table 4.303.1.

[21] Cal. Code Regs. tit. 24, Table 4.303.1.

[22] Cal. Code Regs. tit. 24, Table 4.303.1.

[23] Cal. Code Regs. tit. 24, Table 4.303.1.

Table 1.5.1 applies the 40% indoor water reduction factor to future residences based on the 1992 Plumbing Code Changes *and* the 2010 CGBSC. By 2045, these measures will reduce the City's indoor residential demand by 1,153 AFY or 5.9% of the total projected City gross water use (10.1% of the total projected City gross residential water use).

Table 1.5.1. Estimated Indoor Demand Savings from Plumbing Efficiency Requirements for New Residences (40% Reduction Factor)[24]

	2015	2020	2025	2030	2035	2040	2045
Projected New Homes	1,267	2,527	3,918	5,454	7,150	9,022	11,089
Demand Reduction (AFY)	132	263	407	567	744	938	1,153
Percentage of Total Demand Reduction	1.23%	2.21%	3.10%	3.92%	4.65%	5.31%	5.92%

1.5.2 Post-1994 Changes Impacting Indoor Use for Existing Residences

This section summarizes water reductions that will impact existing residential uses. In 2009, new rules were imposed to require pre-1994 residential and commercial development to replace all non-compliant plumbing fixtures with water-conserving fixtures starting in 2014 in a phased approach through 2019. As a condition for issuance of a certificate of final completion and occupancy or final permit approval by the local building department after January 1, 2014, water-conserving plumbing fixtures must replace noncompliant plumbing fixtures for all building alterations or improvements to single-family residential real property, and for specified building alterations or improvements to multifamily residential real property and commercial real property.[25] While retrofitting older properties will be gradual, it will further increase water demand reductions beyond the average 20% indoor reduction projected in this WSA resulting from 1992 plumbing code changes.

By January 1, 2017, property owners must replace all noncompliant plumbing fixtures in single-family residences with water-conserving plumbing fixtures.[26] Likewise by January 1, 2019, all noncompliant plumbing fixtures in multi-family residential and

[24] The projected number of new homes in the City is calculated by subtracting the total estimated existing homes in the City (10,838) as of 2010 from the projected total homes in the City for each five-year increment. The amount of conservation reduction for future homes is calculated by calculating average water demand for the new homes using the recent historic average demand per home factor (new homes x 0.52 AFY/DU), then splitting that amount 50/50 (50% indoor, 50% outdoor use), and then applying the projected 40% conservation factor to indoor use and the 38% conservation factor to outdoor use.

[25] SB 407, codified at Cal. Civ. Code §§ 1101.4(a), 1101.5(d).

[26] Cal. Civ. Code § 1101.4(b).

commercial property must be replaced with water-conserving plumbing fixtures.[27] After January 1, 2017, a seller or transferor of a single-family or multifamily residence, or commercial property must disclose to the purchaser or transferee, in writing, any specified requirements for replacing plumbing fixtures, and whether the real property includes noncompliant plumbing.[28] Cities must either enact local ordinances or establish policies that promote compliance with these regulations or enact such ordinances or policies that will result in a greater amount of water savings than those resulting from implementation of these regulations.[29]

To project City demand reductions for existing residential use as homes are transferred or remodeled, the City examined residential title records and estimated that approximately 7,000 homes in the City were built prior to 1994 and contain non-compliant plumbing fixtures. Title records also indicate that approximately 72% of existing homes in the City as of 2010 were built prior to 1992. [30] Pursuant to Civil Code section 1101, *et seq*., these fixtures are required to be replaced at the time of sale. Over the past four years, home sales in the City have averaged approximately 718 homes per year. For purposes of projecting indoor water use reductions, the City's calculations assume this rate of sales will continue into the future and that half of those sales, or 359 homes per year, would consist of homes built prior to 1994 with non-compliant plumbing that would be replaced prior to close of sale.

Table 1.5.2 applies the 20% indoor water reduction factor to existing homes that will replace noncompliant plumbing fixtures at the time of sale. Because these new requirements do not take effect until between 2017 and 2019, demand reductions are not reflected until 2020 in this table. Shortly after 2035, all 7,000 homes that were built prior to 1994 will be retrofitted.

[27] Cal. Civ. Code § 1101.5(a).
[28] Cal. Civ. Code §§ 1101.4(c), 1101.5(e).
[29] Cal. Civ. Code, § 1101.8.
[30] A greater percentage of homes were constructed before 1994 with plumbing that did not meet the new plumbing code requirements.

Table 1.5.2. Estimated Demand Savings from Residential Plumbing Retrofit Requirements for Existing Development[31]

	2010	2015	2020	2025	2030	2035	2040	2045
Projected Cumulative Future Sales of Pre-1994 Homes with Retrofit	0	0	1,436	3,231	5,025	6,820	7,000	7,000
Demand Reduction (AFY)	0	0	75	168	261	355	364	364
Percentage of Total Demand Reduction	0	0	0.63%	1.28%	1.80%	2.22%	2.06%	1.88%

1.6 Demand Reductions In Outdoor Water Use

This section summarizes the City's reductions in outdoor water demand for new residences as a result of new conservation requirements. Conservation efforts will reduce the outdoor water use of a new residential unit by 38%. Twenty-five percent of this reduction is a result of the City's new landscape standards for new development and the remaining 13% reduction will come from requirements that new residences install weather or soil moisture based irrigation controllers. Demand reductions from outdoor irrigation are described and quantified below.

1.6.1 Model Water Efficient Landscape Ordinance and City's Landscape Requirements

In accordance with the Water Conservation in Landscaping Act of 2006 (AB 1881), DWR has prepared an updated Model Water Efficient Landscape Ordinance (Model Ordinance) intended to establish a structure for designing, installing, maintaining and managing water efficient landscapes in new and rehabilitated projects. The goal is to reduce water use to the lowest practical amount by setting maximum water use limits and by establishing provisions for water management practices and water waste prevention for established landscapes. The Model Ordinance provides guidance such as the Landscape Documentation Package,[32] the Water Efficient Landscape Work-

[31] Assumes there are 7,000 existing pre-1994 homes in the City with non-conforming plumbing fixtures. Assumes home sales in the City will continue to average approximately 718 homes per year based on average of recent records. Assumes half of home sales each year, or 359 home sales, will be pre-1994 homes with non-conforming plumbing fixtures retrofitted with conforming fixtures. Assumes retrofitting does not start until the year 2017, when the law requires it must be done. The amount of conservation reduction for future home sales of existing pre-1994 homes retrofitted is calculated by calculating the average water demand for these home sales using the recent historic average demand per home factor (home sales x 0.52 AFY/DU), then splitting that amount 50/50 (50% indoor, 50% outdoor use), and then applying the projected 20% conservation factor to indoor use.

[32] Cal. Code Regs. tit. 23 § 492.3 (2010).

sheet,[33] as well as various plans, reports, and audits to require landscape developers to install efficient landscape and irrigation systems.[34]

All local agencies (cities, counties, cities and counties, charter cities and charter counties) had until January 1, 2010, to adopt DWR's updated Model Ordinance or their own local water efficient landscape ordinance that was at least as effective in conserving water as the updated model ordinance.[35] If a local agency has not yet adopted its own ordinance, the updated Model Ordinance applies within the jurisdiction of that local agency.[36]

1.6.2 City Ordinance No. 1339 (2006)

On January 26, 2010, the Banning City Council adopted Resolution No. 2010-06, making the required findings that the City's water efficient landscape ordinance and existing municipal code sections are as effective as the state's Model Ordinance. (Attached as Exhibit D to the WSA.) The City Council found that these existing municipal code sections and the actions of DWR, taken together, meet the goals and policies of the Water Conservation in Landscaping Act regulations. The City submitted a copy of Resolution No. 2010-06 to DWR in accordance with AB 1881 requirements.

Exhibit D includes a chart that specifically identifies the requirements of AB 1881 and the corresponding City regulations or programs that meet that requirement.[37] The City's conservation regulations are found in its zoning regulations (Chapter 17.32 *Landscaping Standards*) and its Water Conservation (Chapter 13.16) and Stormwater Codes (Chapter 13.24). For example, the City's Landscaping Standards require that landscaping plans be submitted as part of all planning permit applications.[38] The plans must "rely primarily on indigenous plant and tree species which are suitable to the local climate and soil types…"[39] Landscaping must include "drought-tolerant landscaping whenever possible" and "water-efficient automatic irrigation systems."[40] All new residential developments in the City are limited to a maximum allowed turf area of 25%.[41] Developers must "provide buyers with sample landscape plans using low water-using plants and a maximum 25% turf area."[42] In addition, the City requires that water-efficient sprinklers and irrigation systems be installed.[43] Landscape plans must be

[33] Cal. Code Regs. tit. 23 § 492.4 (2010).
[34] Cal. Code Regs. tit. 23 §§ 492, 493 (2010).
[35] Cal. Gov. Code § 65595(c). Local agencies had until January 31, 2010 to notify DWR of its plans.
[36] Cal. Gov. Code § 65595(d).
[37] See City Council Resolution No. 2010-06, pp. 2-3.
[38] Banning, Cal., Mun. Code ch. 17.32.020 (2010).
[39] Banning, Cal., Mun. Code ch, 17.32.020(c) (2010).
[40] Banning, Cal., Mun. Code ch. 17.32.030 (2010).
[41] Banning, Cal., Mun. Code ch. 13.16.030(E)(1) (2010).
[42] Banning, Cal., Mun. Code ch. 13.16.030(E)(1) (2010).
[43] Banning, Cal., Mun. Code ch. 13.16.030(E)(4) (2010).

reviewed by the City's community development director to assure compliance with allowable plans, planting areas and irrigation design.[44]

On February 14, 2006, the City adopted a water efficient xeriscape ordinance to reduce water consumption in landscaping.[45] The City adopted updated Landscape Standards[46] to ensure efficient landscapes in new developments and to reduce water use. The Landscape Standards apply to all new and rehabilitated landscaping for private, residential, commercial, public and governmental development projects.

The City's Landscape Standards set new maximum applied water allowance (MAWA) requirements for new landscapes and require documentation of MAWA calculations based on a new formula. MAWA is the "not-to-exceed" calculation required by the City for landscape designers and developers to determine an annual water use estimate. Because MAWA does not factor in rainfall, this calculation highlights the maximum water usage permitted for a site of a specified size. The evapotranspiration adjustment factor (ETAF) in the formula, which influences the amount of water that can be applied to a landscape, is set at a factor of 0.6, which is 25% lower than the MAWA factor that was typically applied in the City's previous landscape designs (previous ETAF 0.8). Based on this change, it is expected that new City landscapes will use 25% less water in the future. Actual new landscapes could achieve an even greater water demand reduction through the use of drought-tolerant plants and more efficient irrigation systems that exceed the MAWA requirements.

1.6.3 2010 California Green Building Standards Code (Sec. 4.304) Irrigation Controllers

The 2010 CGBSC now requires new residences to install weather or soil moisture irrigation controllers starting in 2011. Studies have shown that these controllers result in an additional 13% water savings.[47] While the City's 2006 Landscape Standards do not require use of controllers with these features in residential use, the CGBSC mandates that the City start requiring them beginning in 2011. Accordingly, beginning in 2011, all landscape irrigation demand for future residential development should be reduced an additional 13%.

1.6.4 Summary of Outdoor Water Use Reductions

Based on the City's landscape ordinance and the installation of irrigation controllers, new residences will use 38% less water for outdoor uses than existing residences.

---

[44] Banning, Cal., Mun. Code ch. 13.16.030(D)(6) (2010).

[45] Banning, Cal., Ordinance No. 1339 (Feb. 14, 2006); Banning, Cal., Mun. Code ch. 13.16.030, *et seq*. (2010).

[46] Banning, Cal., Ordinance No. 1339 (Feb. 14, 2006), Banning, Cal., Mun. Code ch. 17.32 (2010).

[47] Water Use in the California Residential Home study prepared by ConSol Consulting in January 2009 indicates weather/soil moisture irrigation controllers will reduce irrigation (outdoor) water use by 13% (based on previous Irvine Ranch Water District studies).

Table 1.6.4 below quantifies the estimated demand savings that result from outdoor conservation measures imposed on new residential development.

Table 1.6.4. Estimated Demand Savings from Outdoor Conservation Requirements for New Residences

	2015	2020	2025	2030	2035	2040	2045
Demand Reduction (AFY)	125	250	387	539	706	891	1,096
Percentage of Total Demand Reduction	1.16%	2.10%	2.95%	3.72%	4.42%	5.05%	5.62%

1.7 Demand Reductions in Non-Residential Water Use

1.7.1 Landscape Ordinance

The Banning Municipal Code contains standards for water efficiency that must be implemented for all landscaping plans required under section 17.32.020. In addition to developer-installed landscaping in single-family tracts and multifamily projects, the standards apply to "all new and rehabilitated landscaping for private, public, commercial and governmental development projects that require a permit."[48] These standards apply to all new projects, redevelopment projects, and project modifications which add 25% or more to a structure's building area.[49]

Each landscape documentation package must include a water conservation concept statement, calculation of the maximum applied water allowance, calculation of estimated applied and total water use, a landscape design plan, an irrigation design plan, and a certificate of substantial completion.

Furthermore, all existing landscaped areas which use groundwater and are over 60,000 square feet, including golf courses, green belts, common areas, multifamily housing, schools, businesses, parks, and cemeteries must conduct a landscape irrigation audit at least every five years unless granted an exemption by the City.[50]

1.7.2 Water Conservation and Xeriscape

The City's emergency water conservation measures pursuant to Municipal Code Chapter 13 apply to "any person, firm, partnership, association, corporation or political entity using water obtained from the water system of the city."[51] Chapter 13 also implements the City's "Water Conservation Using Xeriscape Principles." In addition to qualifying new residential developments, these conservation provisions apply to rehabilitated landscaping (for projects on parcels greater than ten thousand square feet)

48 Banning, Cal. Mun. Code, ch. 13.16.020(A).
49 Banning, Cal. Mun. Code, ch. 17.24.020.
50 Banning, Cal. Mun. Code, ch. 17.32.110.
51 Banning, Cal. Mun. Code, ch. 13.16.020(A).

for industrial, commercial, institutional, multifamily and residential common areas of PUDs (Planned Unit Developments); interior remodels, tenant improvements and demolitions for any of the above projects; and schools, parks, golf courses or similar public open spaces.[52] However, "water conservation landscape requirements apply to all new developments."[53] Any new development applications must include landscape plans which require final approval at the time of final project approval.[54] There are limited exceptions, with cemeteries and historical sites as an example.[55]

Under these requirements, the maximum allowed turf and/or water area (expressed as percent of planted area) is 25% for industrial, commercial, residential developments with common area, institutions and public/semi-public developments.[56] At least 90% of the plants in non-turf areas must be drought-resistant. A small percentage of the planted area (up to 10%) can be used for non-drought tolerant varieties if they are grouped together and can be irrigated separately.

Additionally, the following irrigation requirements apply:

a. Sprinklers and sprays shall not be used in areas less than eight feet wide. Drip and bubbler shall be used that do not exceed one and one-half gallons per minute per device.

b. Sprinkler heads with a precipitation rate of .85" per hour or less shall be used in slopes exceeding 15% to minimize runoff, or exceeding 10% within ten feet of hardscape.

c. Valves and circuits shall be separated based on water use.

d. Drip or bubbler irrigation systems are required for trees with the exception of those which can be sustained by ground or rain water.

e. Sprinkler heads must have matched precipitation rates within each control valve circuit.

f. Serviceable check valves are required where elevation differential may cause low head drainage.

g. Sprinkler head spacing shall be designed for head-to-head coverage. The system should be designed for minimum runoff and overspray onto non-irrigated areas.

[52] Banning, Cal. Mun. Code, ch. 13.16.030(C).
[53] Banning, Cal. Mun. Code, ch. 13.16.030(C).
[54] Banning, Cal. Mun. Code, ch. 13.16.020(C).
[55] Banning, Cal. Mun. Code, ch. 13.16.020(D).
[56] Banning, Cal. Mun. Code, ch. 13.16.020(E).

h. All irrigation systems shall be equipped with a controller capable of dual or multiple programming. Controllers must have multiple cycle start capacity and a flexible calendar program.[57]

1.7.3 California Green Building Standards Code for Non-Residential

The CGBSC also includes standards for non-residential buildings. Separate meters or metering devices must be installed to help reduce indoor water use.[58] For example, for buildings in excess of 50,000 square feet, separate submeters must be installed for each individual leased, rented or other tenant space within the building projected to consume more than 100 gpd. Submeters must also be installed for spaces used for laundry or cleaners, restaurant or food service, medical or dental office, laboratory, or beauty salon or barber shop projected to consume more than 100 gpd.[59]

A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 20% must be provided for all new non-residential construction. The reduction must be based on the maximum allowable water use per plumbing fixture and fittings as required by the CGBSC. The CGBSC also mandates for non-residential buildings showerhead efficiency, wastewater reduction, and requires all plumbing fixtures to meet residential requirements.[60]

For non-residential outdoor water use, the CGBSC requires a water budget for landscape irrigation, as well as separate meters for outdoor potable water use.[61] In new nonresidential construction with between 1,000 and 22,500 square feet of landscaped area, builders must install irrigation controllers and sensors to reduce water use.[62]

[57] Banning, Cal. Mun. Code, ch. 13.16.020(E)(4).
[58] Cal. Code Regs., tit. 24, § 5.303.1.
[59] Cal. Code Regs., tit. 24, § 5.303.1.1.
[60] Cal. Code Regs., tit. 24, Table 5.303.2.3; Cal. Code Regs., tit. 24, § 5.303.4; Cal. Code Regs., tit. 24, Table 5.303.2.2; see also Cal. Code Regs., tit. 24, Table 4.303.1.
[61] Cal. Code Regs., tit. 24, §§ 5.304.1 and .2.
[62] Cal. Code Regs., tit. 24, §§ 5.304.3.

1.8 Summary of Projected Incremental Conservation Reductions in City Water Demand Based on City-Specific Programs: Future New Residential, Existing Residential and Future Non-Residential

Increased conservation will reduce indoor water use by 40% for all new residential units and outdoor water use by 38% for all new residential units. This results from a 25% reduction in the difference between the MAWA formula that was being used before the City's 2006 Landscape Standards and the City's new 2006 MAWA formula (which is more stringent than the state's current model ordinance).[63] In addition, the 2010 CGBSC now requires use of weather or soil moisture based irrigation controllers on all new residential landscaping starting in 2011, resulting in an additional estimated 13% reduction.

The City's current average residential water use factor — 0.52 AFY/du — reflects the fact that approximately 72% of the homes in the City were built before 1992 and therefore do not have efficient plumbing fixtures. The conservation measures described in this section will reduce the City's overall average water use factor for all projected residential units (existing and future) in the year 2020 to 0.48 AFY/du, down from 0.52 AFY/du.

[63] Banning, Cal., Mun. Code ch. 17.32 (2010).