

**Appendix G**  
City of Sunnyvale  
2010 Urban Water Management Plan  
Water Shortage Contingency Plan and Municipal Code

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**Council Meeting: March 1, 2011****SUBJECT: Approval by Resolution of the Tier 2 Drought Implementation Plan (DRIP) for Wholesale Customers of San Francisco Pursuant to Section 3.11.C of the Water Supply Agreement with San Francisco****REPORT IN BRIEF**

Council is requested to approve by resolution (Attachment A) indicating Sunnyvale's acceptance and approval of the Tier 2 Drought Implementation Plan (DRIP) for Bay Area Water Supply and Conservation Agency (BAWSCA) customers. The DRIP presents to our wholesale water provider, San Francisco Public Utility Commission (SFPUC), how the BAWSCA agencies want the available water divided among agencies in the case of a source reduction up to 20%. A Tier 1 plan, between SFPUC and the total of BAWSCA agencies, was approved in July 2009, with the adoption of the Water Supply Agreement (WSA) with SFPUC. The BAWSCA agencies negotiated this Tier 2 arrangement over the past year and a half to replace a similar agreement approved in 2000 which also expired in July 2009. Both the Tier 1 plan (between SFPUC and BAWSCA) and the Tier 2 plan (among the BAWSCA agencies) are for a 20% source reduction condition. Adoption by all 26 BAWSCA agencies is mandatory for this agreement to be presented to SFPUC. The Tier 1 Plan, the methodology developed for the Tier 2 Plan, the individual allocations under the Tier 2 plan, and the draft resolution developed by BAWSCA staff are attached for information (Attachment B).

**BACKGROUND**

In July 2009, in connection with adoption of the WSA, the Wholesale Customers and San Francisco adopted a Water Shortage Allocation Plan to allocate water from the San Francisco Regional Water System (RWS) to retail and Wholesale Customers during system-wide shortages of 20% or less (the Tier 1 Plan, between SFPUC and BAWSCA). The Tier 1 Plan replaced the prior Tier 1 Interim Water Shortage Allocation Plan, which was adopted in 2000 and expired in June 2009. The Tier 1 plan allocated water for SFPUC and the BAWSCA agencies as a group, for shortages up to 20%. The provisions of the Tier 1 Plan allow wholesale customers to "bank" drought allocations and to voluntarily transfer them to each other and San Francisco. The Tier 1 plan also presents an updated schedule for actions preceding and during a drought.

Section 3.11.C of the WSA authorizes the Wholesale Customers to adopt a methodology for allocating the water which is collectively available to the 26 Wholesale Customers, through the Tier 1 plan, among each individual Wholesale Customer (the "Tier 2 Plan"). The original Tier 2 Plan was adopted in 2000, and expired in June 2009, on the same date that the previous contract with SFPUC expired. The WSA also commits SFPUC to honor allocations of water unanimously agreed to by all Wholesale Customers or, if unanimous agreement cannot be achieved, water allocations that have been adopted by the BAWSCA Board of Directors. The WSA also provides that the SFPUC can allocate water supplies as necessary during a water shortage emergency if no agreed upon plan for water allocation has been adopted by the 26 Wholesale Customers or the BAWSCA Board of Directors.

Commencing in October 2009, Appointed Water Management Representatives of each of the Wholesale Customers began meeting to develop a set of principles to serve as guidelines for an equitable allocation methodology, as well as formulas and procedures, to implement those principles. These principles include:

- Providing certainty of drought allocations with consistent and pre-determined rules for calculation;
- Providing sufficient amounts of water for basic needs of customers;
- Creating an incentive for water conservation at all times and the development and management of alternative water supplies;
- Avoiding preventable, adverse economic impacts;
- Avoiding reallocation of water supply assets and investments among agencies without mutual consent and compensation; and
- Recognizing inherent differences in land use and climate.

The Tier 2 Plan establishes an allocation formula that will determine how the available water from the RWS will be allocated among the individual Wholesale Customers in system-wide shortages up to 20% (the same restriction as the Tier 1 plan between SFPUC and BAWSCA). The Tier 2 Plan is shown as Exhibit 1 to Attachment A and has been endorsed by all of the Wholesale Customers who participated in the formulation process for the past year.

In general, the allocation formula can be described as follows:

- 33.3% weight applied to individual agency's Individual Supply Guarantee (with slight variations for Hayward, San Jose, and Santa Clara)

- 66.6% weight applied to a Base/Seasonal calculation using 3 year average monthly production values for all supply sources
- 10% minimum cutback and maximum cutback equal to no more than the average cutback plus 20%
- Guaranteed sufficient supply of water to East Palo Alto to meet health and safety needs for its community

### **EXISTING POLICY**

GOAL 4.1A: Water Supply – Acquire and manage water supplies so that existing and future reasonable demands for water, as projected in the 20-year forecast, are reliably met.

Policy 4.1A.1: Manage water supply to meet demands for potable water through the effective use of water supply agreements.

Policy 4.1.3: Provide enough redundancy in the water supply system so that minimum potable water demand and fire suppression requirements can be met under both normal and emergency circumstances.

### **FISCAL IMPACT**

There is no fiscal impact for adoption of the Tier 2 Drought Implementation Plan.

### **PUBLIC CONTACT**

Public contact was made by posting the Council agenda on the City's official-notice bulletin board outside City Hall, in the Council Chambers lobby, in the Office of the City Clerk, at the Library, Senior Center, Community Center, and Department of Public Safety; posting the agenda and report on the City's Web site; and making the report available at the Library and the Office of the City Clerk.

### **ALTERNATIVES**

1. Approve by resolution, the Tier 2 Drought Implementation Plan pursuant to Section 3.11.C of the Water Supply Agreement with San Francisco.
2. Do not approve the attached resolution and request additional information from BAWSCA prior to approving any Drought Implementation Plan with San Francisco and the BAWSCA agencies.

**RECOMMENDATION**

Staff recommends Alternative No. 1: Approve by resolution (Attachment A), the Tier 2 Drought Implementation Plan pursuant to Section 3.11.C of the Water Supply Agreement with San Francisco.

This plan has been negotiated with all BAWSCA agencies, and represents what was agreed to be the fairest overall plan for the Tier 2 division of available water in the case of a drought with limitations up to 20%. It is recommended for all the BAWSCA agencies to approve this plan in order to meet the requirements of the WSA, and avoid the decision being turned over to the BAWSCA Board, or even the SFPUC, for a unilateral decision.

Reviewed by:

Marvin A. Rose, Director, Public Works  
Prepared by: Jim Craig, Superintendent of Field Services

Approved by:

Gary M. Luebbbers  
City Manager

**Attachments**

- A. Resolution
- B. Final Tier 2 Transmittal package from Arthur R. Jensen, CEO/General Manager, BAWSCA

CITY OF SUNNYVALE

RESOLUTION NO. \_\_\_\_\_

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SUNNYVALE APPROVING TIER 2 DROUGHT IMPLEMENTATION PLAN PURSUANT TO SECTION 3.11.C OF THE WATER SUPPLY AGREEMENT WITH SAN FRANCISCO**

WHEREAS, The City of Sunnyvale is one of 26 agencies in San Mateo, Santa Clara and Alameda Counties which purchase water from the City and County of San Francisco (San Francisco) pursuant to a Water Supply Agreement entered into in 2009 (Agreement). Collectively these 26 agencies are referred to in the Agreement as Wholesale Customers.

WHEREAS, Section 3.11 of the Agreement addresses times when insufficient water is available in the San Francisco Regional Water System to meet the full demands of all users. Section 3.11.C provides that during periods of water shortage caused by drought, the San Francisco Public Utilities Commission (SFPUC) will allocate available water between its retail customers and the Wholesale Customers collectively, in accordance with a schedule contained in the Water Shortage Allocation Plan set forth in Attachment H to the Agreement (Tier 1 Plan).

WHEREAS, Section 3.11.C authorizes the Wholesale Customers to adopt a Drought Allocation Plan, including a methodology for allocating the water which is collectively available to the 26 Wholesale Customers among each individual Wholesale Customer (Tier 2 Plan). It also commits the SFPUC to honor allocations of water unanimously agreed to by all Wholesale Customers or, if unanimous agreement cannot be achieved, water allocations that have been adopted by the Board of Directors of the Bay Area Water Supply and Conservation Agency (BAWSCA). The Agreement also provides that the SFPUC can allocate water supplies as necessary during a water shortage emergency if no agreed upon plan for water allocation has been adopted by the 26 Wholesale Customers or the BAWSCA Board of Directors.

WHEREAS, commencing in October 2009, representatives appointed by the managers of each of the Wholesale Customers have been meeting to develop a set of principles to serve as guidelines for an equitable allocation methodology, as well as formulas and procedures, to implement those principles. These discussions, and supporting technical analyses, have been conducted with the assistance of BAWSCA staff.

WHEREAS, The Tier 2 Plan, attached to this resolution as Exhibit A, has been endorsed by all of the Wholesale Customer representatives who participated in the formulation process and they have committed to recommend that it be formally adopted by the governing body of their respective agencies.

WHEREAS, The Tier 2 Plan allocates the collective Wholesale Customer share among each of the 26 wholesale customers through December 31, 2018 to coincide with San Francisco's deferral of decisions about additional water supply until at least 2018.

**ATTACHMENT A**

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SUNNYVALE THAT:

1. The Tier 2 Drought Implementation Plan, a copy of which is attached hereto as Exhibit A, is approved.

2. This approval is conditioned upon all of the other 25 Wholesale Customers approving the Plan, such approvals being evidenced through adoption of similar resolutions or, in the case of private-sector organizations, by other equivalently binding written commitments signed by an executive officer acting within the scope of delegated authority, and all such approvals occurring on or before June 30, 2011.

If such resolutions or binding commitments are not adopted by that date, this resolution will automatically expire and be of no further effect after June 30, 2011, unless it has been extended prior thereto by further action of this Sunnyvale City Council.

Adopted by the City Council at a regular meeting held on \_\_\_\_\_, 2011, by the following vote:

AYES:  
NOES:  
ABSTAIN:  
ABSENT:

ATTEST:

APPROVED:

\_\_\_\_\_  
City Clerk  
(SEAL)

\_\_\_\_\_  
Mayor

APPROVED AS TO FORM AND LEGALITY:

\_\_\_\_\_  
David E. Kahn, City Attorney

## EXHIBIT A

### TIER 2 DROUGHT IMPLEMENTATION PLAN AMONG WHOLESALE CUSTOMERS

This Tier 2 Drought Implementation (Plan) describes the method for allocating the water made available by the San Francisco Public Utilities Commission (SFPUC) among the Wholesale Customers during shortages caused by drought. This Plan is adopted pursuant to Section 3.11.C of the July 2009 Water Supply Agreement between the City and County of San Francisco and the Wholesale Customers (Agreement).

#### SECTION 1. APPLICABILITY AND INTEGRATION

**Section 1.1 Applicability.** This Plan applies when, and only when, the SFPUC determines that a system-wide water shortage of 20 percent or less exists, as set forth in a declaration of water shortage emergency adopted by the SFPUC pursuant to California Water Code Sections 350 *et seq.* This Plan applies only to water acquired and distributed by the SFPUC to the Wholesale Customers and has no effect on water obtained by a Wholesale Customer from any source other than the SFPUC.

**Section 1.2 Integration with Tier 1 Water Shortage Allocation Plan.** The Agreement contains, in Attachment H, a Water Shortage Allocation Plan which, among other things, (a) provides for the allocation by the SFPUC of water between Direct City Water Users (e.g., retail water customers within the City and County of San Francisco) and the Wholesale Customers collectively during system-wide water shortages of 20 percent or less, (b) contemplates the adoption by the Wholesale Customers of this Plan for allocation of the water made available to Wholesale Customers collectively among the 26 individual Wholesale Customers, (c) commits the SFPUC to implement this Plan, and (d) provides for the transfer of both banked water and shortage allocations between and among the Wholesale Customers and commits the SFPUC to implement such transfers. That plan is referred to as the Tier 1 Plan.

The Tier 1 Plan also provides the methodology for determining the Overall Average Wholesale Customer Reduction, expressed as a percentage cutback from prior year's normal SFPUC purchases, and Overall Wholesale Customer Allocation, in million gallons per day, both of which are used in determining the Final Allocation Factor for each Wholesale Customer. The Overall Average Wholesale Customer Reduction is determined by dividing the volume of water available to the Wholesale Customers (the Overall Wholesale Customer Allocation), shown as a share of available water in Section 2 of the Tier 1 Plan, by the prior year's normal total Wholesale Customers SFPUC purchases and subtracting that value from one.

This Plan is referred to in the Agreement as the Tier 2 Plan. It is intended to be integrated with the Tier 1 Plan described in the preceding paragraph. Terms used in this Plan are intended to have the same meaning as such terms have in the Tier 1 Plan.

## **SECTION 2. ALLOCATION OF WATER AMONG WHOLESALE CUSTOMERS**

**Section 2.1 Annual Allocations Among the Wholesale Customers.** The annual water supply allocated by the SFPUC to the Wholesale Customers collectively during system-wide shortages of 20 percent or less shall be apportioned among them based on the methodology described in this Section.

**Section 2.2 Methodology for Allocating Water Among Wholesale Customers.** The water made available to the Wholesale Customers collectively will be allocated among them in proportion to each Wholesale Customer's Allocation Factor, adjusted as described in the following subsections below. The Wholesale Customer Allocation Factors will only be calculated at the onset of a drought and will remain the same until such time as the SFPUC declares the shortage condition over. The Wholesale Customer Allocation Factors will be recalculated during subsequent shortage periods for use during those specific periods.

**Section 2.2.1 Step One: Determination of Base/Seasonal Purchase Cutback For Each Wholesale Customer.** The first step requires calculating the Wholesale Customer's Base/Seasonal Purchase Cutback. This calculation has seven parts. An example of Steps 1b-1f is presented in Table 2. Step 1g is shown in columns 3-6 in Table 3. For steps 1b-1g, the calculation uses average monthly production values for the three years preceding the drought for all potable supply sources, expressed as a monthly value in hundred cubic feet:

- Step 1a: Each agency's total annual purchases from the SFPUC will be compared to its Individual Supply Guarantee (ISG), with any annual purchases above its ISG subtracted from that agency's total annual SFPUC purchases by subtracting the amount on a monthly basis in proportion to the agency's monthly SFPUC purchase pattern,
- Step 1b: Calculate Average Monthly and Total Production for the three fiscal years immediately preceding the drought, excluding years during which shortage allocations were in effect, based on monthly production data from the SFPUC and Wholesale Customers,
- Step 1c: Calculate Base Component which is equal to the Average Monthly Production during the base months of December, January, February and March, multiplied by 12,
- Step 1d: Calculate Seasonal Component as the difference between Total Production and Base Component,
- Step 1e: Calculate an agency's Base/Seasonal Allocation , expressed in hundred cubic feet, by multiplying the Base Component by one minus the Base Reduction Percentage, or 90%, and the Seasonal Component by the percentage needed (Seasonal Reduction Percentage) to achieve the required Overall Average Wholesale Customer Reduction, which is expressed as a percentage,

- Step 1f: Calculate the Base/Seasonal Allocation Cutback Percentage for each agency by dividing its Base/Seasonal Allocation by the agency's Total Production, and
- Step 1g: Calculate the Base/Seasonal Purchase Cutback Percentage by multiplying the Base/Seasonal Allocation Cutback percentage times the lesser of: (a) the immediately preceding SFPUC purchases or (b) ISG, adjusting the Seasonal percentage above until the total reduction equals the Overall Average Wholesale Customer Reduction.

Additionally, adjustments to the Base Component for Stanford University will be made to remove that two week time period that the University is completely closed during the winter break per policy set by the University President as long as that policy remains in place. This adjustment will be removed at such time as the seasonal closure policy is terminated by Stanford University.

**Section 2.2.2 Step Two: First Adjustment for San Jose and Santa Clara.** The resulting Base/Seasonal Purchase Cutback Percentage in Section 2.2.1 for San Jose and Santa Clara will be compared to the highest Base/Seasonal Purchase Cutback percentage of the other Wholesale Customers. If both San Jose's and Santa Clara's percentage reductions are larger than the highest percentage reduction among any other Wholesale Customers, the Base/Seasonal Purchase Cutback percentage established under Section 2.2.1 will remain unchanged. If either San Jose's percentage cutback or Santa Clara's percentage cutback, or both, is smaller than the highest Base/Seasonal Purchase Cutback percentage of other Wholesale Customers, the Base/Seasonal Allocation (in mgd) of San Jose or Santa Clara, or both, will be reduced so that the percentage cutback of each is no smaller than that of the Wholesale Customers' otherwise highest percentage cutback. The amount of shortage allocation (in mgd) removed from San Jose and/or Santa Clara will be reallocated among the remaining Wholesale Customers in proportion to the Base/Seasonal Allocation of each.

**Section 2.2.3 Step Three: Determination of Weighted Purchase Cutback For Each Wholesale Customer.** Each agency's weighted allocation is calculated by multiplying its Adjusted Base/Seasonal Allocation in Section 2.2.2 by 66.66% and its Fixed Component by 33.33%. The Fixed Component is (i) the Wholesale Customer's ISG provided for in the Agreement, or (ii) in the case of Hayward, 25.11 mgd, or (iii) in the case of San Jose and Santa Clara, consistent with the limit on purchases from SFPUC set forth in Section 4.05 of the Agreement, e. g., 4.5 mgd each. The amount of the Fixed Component for each Wholesale Customer is shown on Table 1.

**Section 2.2.4 Step Four: Second Adjustment for San Jose and Santa Clara.** The resulting Weighted Allocations for San Jose and Santa Clara will be compared to the highest Weighted Purchase Cutback, shown as a percentage, of the other Wholesale Customers. If both San Jose's and Santa Clara's percentage cutback is larger than the highest percentage cutback among other Wholesale Customers, the Weighted Purchase Cutbacks established under Section 2.2.3 will remain unchanged. If either San Jose's

percentage cutback or Santa Clara's percentage cutback, or both, is smaller than the highest percentage cutback of any other Wholesale Customers, the Weighted Shortage Allocation (in mgd) of San Jose or Santa Clara, or both, will be reduced so that the percentage reduction of each is no smaller than that of the Wholesale Customers' otherwise highest Weighted Percentage Cutback. The amount of allocation (in mgd) removed from San Jose and/or Santa Clara will be reallocated among the remaining Wholesale Customers in proportion to the Weighted Shortage Allocation of each.

**Section 2.2.5 Step Five: Adjustment for Minimum and Maximum Cutbacks.** Using the Adjusted Weighted Purchase Cutbacks, either a 10% minimum cutback or maximum cutback, as defined below, is applied to any agency whose Adjusted Weighted Purchase Cutback falls outside this range:

- A minimum 10% cutback is applied to the individual agency Adjusted Weighted Allocation, with the reapportioned water being placed in the hardship bank for allocation to East Palo Alto.
- A maximum cutback of the average cutback plus 20% (e.g. 15% average cutback results in a maximum cutback of  $15\% + 20\% = 35\%$ ) is applied to the individual agency Adjusted Weighted Allocation, with the water necessary to meet that level being subtracted in proportion to each Wholesale Customer's Adjusted Weighted Allocation from all remaining agencies, except those at agencies subject to the minimum cutback above.

The result is the Adjusted Minimum/Maximum Purchase Cutback, expressed as a percentage.

**Section 2.2.6 Step Six: Adjustment to Provide Sufficient Supply for East Palo Alto.**

In order to provide for sufficient water supply for water customers served by the City of East Palo Alto (EPA), the maximum Final Purchase Cutback applied at any given time to EPA will be equal to 50% of the Overall Average Wholesale Customer Reduction. The water needed to accommodate the guaranteed maximum cutback to EPA will be provided in two ways:

- First, water from the hardship bank provided by the 10% minimum cutback will be first added to the EPA Adjusted Weighted Purchase Allocation, and
- Second, the balance of water needed for EPA will be deducted on a prorated basis from those agencies with a pre-drought residential per capita water use greater than 55 gallons per capita per day (as documented in the most recent BAWSCA Annual Survey) in proportion to each agency's Min./Max. Adjusted Allocation and who are not subject to the minimum and maximum reductions already applied per Section 2.2.5

The result is the Allocation with EPA Adjustment, expressed as an mgd.

**Section 2.2.7 Step Seven: Determination of Final Allocation Factor.** Each Wholesale Customer's Final Allocation Factor is the fraction expressed as a percentage, the numerator of which is the particular Wholesale Customer's "Final Allocation with EPA Adjustment" (in mgd) as calculated in Steps One through Six and the denominator of which is the Overall Wholesale Customer Allocation (in mgd), a number provided by the SFPUC during the drought period as determined by the SFPUC in the Tier 1 Plan.

**Section 2.2.8 Example Calculation.** Table 2 presents a sample of the calculations involved in Steps 1b-1f. Table 3 presents a sample of the calculations involved in Step 1g and Steps Two through Seven, using the values from Tables 1 and 2 and recent water use data for the other values. Tables 2 and 3 are presented for illustrative purposes only and do not supersede the foregoing provisions of this Section 2.2. In the event of any inconsistency between this Section 2.2 and Tables 2 and 3, the text of this section will govern.

**Section 2.3 Calculation of Individual Wholesale Customer Allocation Factors; Directions to SFPUC.** The Tier 1 Plan contemplates that in any year in which the methodology described above must be applied, the Bay Area Water Supply and Conversation Agency (BAWSCA) will calculate each Wholesale Customer's individual percentage share of the amount of water made available to the Wholesale Customers collectively, following the methodology described above and defined above as Wholesale Customer Allocation Factors. The Tier 1 Plan requires SFPUC to allocate water to each Wholesale Customer in accordance with calculations delivered to it by BAWSCA.

Each Wholesale Customer authorizes BAWSCA to perform the calculations required, using water sales data furnished to it by the SFPUC, and to deliver to SFPUC a list of individual Wholesale Customer Allocation Factors so calculated as contemplated by the Tier 1 Plan. Neither BAWSCA nor any officer or employee of BAWSCA shall be liable to any Wholesale Customer for any such calculations made in good faith, even if incorrect.

### **SECTION 3. GENERAL PROVISIONS**

**Section 3.1 No Third-Party Beneficiaries.** This Plan is for the sole benefit of the Wholesale Customers and shall not be construed as granting rights to any person other than another Wholesale Customer.

**Section 3.2 Governing Law.** This Plan is made under and shall be governed by the laws of the State of California.

**Section 3.3 Effect on Water Supply Agreement.** This Plan describes the method for allocating water from the SFPUC among the Wholesale Customers during system-wide water shortages of 20 percent or less declared by the SFPUC. The provisions of this Plan, and the Tier 1 Plan contained in Attachment H to the Agreement with which it is integrated, are intended to implement Section 3.11 of the Agreement. The Plans do not

affect, change or modify any other section, term or condition of the Agreement or of the individual Water Sales Contracts between each Wholesale Customer and San Francisco.

**Section 3.4 Amendment.** This Plan may be amended only by the written agreement of all Wholesale Customers.

**Section 3.5 Termination.** This Plan shall expire on December 31, 2018. It may be terminated prior to that date only by the written agreement of all Wholesale Customers.



TO: BAWSCA Appointed Water Management Representatives

FROM: Arthur R. Jensen, Chief Executive Officer/General Manager

DATE: November 5, 2010

SUBJECT: Tier 2 Drought Implementation Plan

### **Summary**

The Tier 2 Drought Implementation Plan (Tier 2 Plan or DRIP), which was developed with your agency's participation, is now ready for adoption by your agency. This Plan, along with the Tier 1 Plan, which has already been adopted, establishes how the water available to the Wholesale Customers will be allocated among themselves. Your agency must adopt the Tier 2 Plan by resolution. Accompanying this memorandum is a template resolution (Enclosure 1) for use by your agency in adopting the Tier 2 Plan.

The Tier 1 Plan, which allocates water from the San Francisco Regional Water System (RWS) among San Francisco retail and Wholesale Customers during system-wide shortages of 20% or less, was adopted by your agency and San Francisco as part of the 2009 Water Supply Agreement (WSA). The WSA authorizes the Wholesale Customers to adopt a methodology for allocating the water, which is collectively available to the 26 Wholesale Customers, among each individual Wholesale Customer. A copy of the Tier 1 Plan is attached to this memorandum as Enclosure 2.

The Tier 2 Plan, which documents the Tier 2 allocation methodology, is shown as Exhibit A and has been endorsed by all of the Wholesale Customer Appointed Water Management Representatives who participated in the formulation process for the past year. Agency staff of all the Wholesale Customers have committed to recommend that the Tier 2 Plan be formally adopted by the governing body of their respective agencies.

### **Action Required**

In order to implement the Tier 2 Plan as recommended by the Appointed Water Management Representatives, the template resolution endorsing and adopting the Tier 2 Plan must be adopted by all 26 Wholesale Customers. In order to ensure the Tier 2 Plan is adopted by all agencies in time for inclusion into the 2010 Urban Water Management Plans, please adopt the Plan by March 31, 2011. However, the resolution is written to allow until June 30, 2011 for adoption by all Wholesale Customers. If all Wholesale Customers have not adopted the Tier 2 Plan by June 30th of next year, then all of the resolutions adopting the Tier 2 Plan will not take effect and will automatically expire.

Memo To: Water Management Representatives  
November 5, 2010  
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### **Background**

In July 2009, in connection with adoption of the WSA, the Wholesale Customers and San Francisco adopted a Water Shortage Allocation Plan to allocate water from the RWS to retail and Wholesale Customers during system-wide shortages of 20% or less (the Tier 1 Plan). The Tier 1 Plan replaced the prior Tier 1 Interim Water Shortage Allocation Plan, adopted in 2000 and expired in June 2009, which allocated water for shortages up to 20%. The provisions of the Tier 1 Plan allow wholesale customers to “bank” drought allocations and to voluntarily transfer them to each other and San Francisco. The Tier 1 plan also presents an updated schedule for actions preceding and during a drought.

Section 3.11.C of the WSA authorizes the Wholesale Customers to adopt a methodology for allocating the water which is collectively available to the 26 Wholesale Customers among each individual Wholesale Customer (the “Tier 2 Plan”). The Tier 2 Plan adopted in 2000 expired in June 2009. The WSA also commits the SFPUC to honor allocations of water unanimously agreed to by all Wholesale Customers or, if unanimous agreement cannot be achieved, water allocations that have been adopted by the Board of Directors of the Bay Area Water Supply and Conservation Agency (“BAWSCA”). The WSA also provides that the SFPUC can allocate water supplies as necessary during a water shortage emergency if no agreed upon plan for water allocation has been adopted by the 26 Wholesale Customers or the BAWSCA Board of Directors.

Commencing in October 2009, Appointed Water Management Representatives of each of the Wholesale Customers have been meeting to develop a set of principles to serve as guidelines for an equitable allocation methodology, as well as formulas and procedures, to implement those principles. These principles include:

- Providing certainty of drought allocations with consistent and pre-determined rules for calculation;
- Providing sufficient amounts of water for basic needs of customers;
- Creating an incentive for water conservation at all times and the development and management of alternative water supplies;
- Avoiding preventable, adverse economic impacts;
- Avoiding reallocation of water supply assets and investments among agencies without mutual consent and compensation; and
- Recognizing inherent differences in land use and climate.

The discussions, and supporting technical analyses, were conducted with the assistance of BAWSCA staff.

Memo To: Water Management Representatives  
November 5, 2010  
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On August 25, 2010, the Appointed Water Management Representatives unanimously agreed to recommend adoption of the Tier 2 Plan to each of their respective governing bodies.

### **Term of Tier 2 Drought Implementation Plan**

The Tier 2 Plan term is through December 31, 2018. The Tier 2 Plan allocates the collective Wholesale Customer share among each of the 26 wholesale customers through 2018 to coincide with San Francisco's deferral of decisions about additional supply until at least 2018. At the same time, the SFPUC imposed the Interim Supply Limitation which limits the volume of water that the RWS could deliver to San Francisco and the Wholesale Customers to 265 MGD until at least 2018.

The adoption and implementation of the Tier 1 and 2 Plans and San Francisco's unilateral imposition of the Interim Supply Limitation are independent and unrelated. The Tier 1 and Tier 2 Drought Allocation Plans apply only during times of water shortages caused by drought. San Francisco's Interim Supply Limitation applies in all years through at least 2018, regardless of water supply availability.

### **Effect of Tier 2 Drought Implementation Plan**

The Tier 2 Plan will establish an allocation formula that will determine how the available water from the RWS will be allocated among the individual Wholesale Customers in system-wide shortages up to 20%.

In general, the allocation formula can be described as follows:

- 33.3% weight applied to individual agency's Individual Supply Guarantee (with slight variations for Hayward, San Jose, and Santa Clara)
- 66.6% weight applied to a Base/Seasonal calculation using 3 year average monthly production values for all supply sources
- 10% minimum cutback and maximum cutback equal to no more than the average cutback plus 20%
- Guaranteed sufficient supply of water to East Palo Alto to meet health and safety needs for its community

### **Supporting Documents and Enclosures**

Enclosed are several supporting documents that may be useful for your agency in developing the staff report and/or presentation for your governing board on this subject. These enclosures include:

- Template Agency Resolution (Enclosure 1)
  - Exhibit A: Tier 2 Drought Allocation Plan and attachments (including an example calculation).
- Tier 1 Plan as adopted as part of 2009 Water Supply Agreement (Enclosure 2)

Memo To: Water Management Representatives  
November 5, 2010  
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In addition, the spreadsheets used for calculating Tier 2 Allocations will be transmitted to you via e-mail.

**Procedure & Schedule**

The sample resolution (Enclosure 1) should be reprinted (modified if necessary to fit your agency's preferred format) and presented to your governing board in time for it to be enacted well in advance of the requested March 31, 2011 deadline. Once the resolution has been adopted by your agency, please send a copy of the signed resolution to:

Ms. Nicole M. Sandkulla Water Resources Manager Bay Area Water Supply and Conservation Agency 155 Bovet Road, Suite 302 San Mateo, CA 94402
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Once all agencies have adopted the resolutions, the Tier 2 Plan will take effect. If you or other members of your agency's staff have any questions about the enclosed resolution or supporting material, please call Ms. Sandkulla at (650) 349-3000. If your city attorney or district counsel has legal questions, they should feel free to call Ms. Allison Schutte at (415) 995-5823.

Respectfully submitted,



ARTHUR R. JENSEN, CEO/General Manager  
Bay Area Water Supply and Conservation Agency

Enclosures

cc: BAWSCA Board of Directors

[NAME OF AGENCY]

RESOLUTION NO. \_\_\_\_\_

APPROVING TIER 2 DROUGHT IMPLEMENTATION PLAN  
PURSUANT TO SECTION 3.11.C  
OF THE WATER SUPPLY AGREEMENT WITH SAN FRANCISCO

THIS RESOLUTION IS ADOPTED in light of the following facts and circumstances:

1. The *[Name of Agency]* is one of 26 agencies in San Mateo, Santa Clara and Alameda Counties which purchase water from the City and County of San Francisco (San Francisco) pursuant to a Water Supply Agreement entered into in 2009 (Agreement). Collectively these 26 agencies are referred to in the Agreement as Wholesale Customers.
2. Section 3.11 of the Agreement addresses times when insufficient water is available in the San Francisco Regional Water System to meet the full demands of all users. Section 3.11.C provides that during periods of water shortage caused by drought, the San Francisco Public Utilities Commission (SFPUC) will allocate available water between its retail customers and the Wholesale Customers collectively, in accordance with a schedule contained in the Water Shortage Allocation Plan set forth in Attachment H to the Agreement (Tier 1 Plan).
3. Section 3.11.C authorizes the Wholesale Customers to adopt a Drought Allocation Plan, including a methodology for allocating the water which is collectively available to the 26 Wholesale Customers among each individual Wholesale Customer (Tier 2 Plan). It also commits the SFPUC to honor allocations of water unanimously agreed to by all Wholesale Customers or, if unanimous agreement cannot be achieved, water allocations that have been adopted by the Board of Directors of the Bay Area Water Supply and Conservation Agency (BAWSCA). The Agreement also provides that the SFPUC can allocate water supplies as necessary during a water shortage emergency if no agreed upon plan for water allocation has been adopted by the 26 Wholesale Customers or the BAWSCA Board of Directors.
4. Commencing in October 2009, representatives appointed by the managers of each of the Wholesale Customers have been meeting to develop a set of principles to serve as guidelines for an equitable allocation methodology, as well as formulas and procedures, to implement those principles. These discussions, and supporting technical analyses, have been conducted with the assistance of BAWSCA staff.
5. The Tier 2 Plan, attached to this resolution as Exhibit A, has been endorsed by all of the Wholesale Customer representatives who participated in the formulation process and they have committed to recommend that it be formally adopted by the governing body of their respective agencies.
6. The Tier 2 Plan allocates the collective Wholesale Customer share among each of the 26 wholesale customers through December 31, 2018 to coincide with San Francisco's deferral of decisions about additional water supply until at least 2018.

NOW, THEREFORE, BE IT RESOLVED by the *[Governing Board]* of *[Name of Agency]* as follows:

1. The Tier 2 Drought Implementation Plan, a copy of which is attached hereto as Exhibit A, is approved.

2. This approval is conditioned upon all of the other 25 Wholesale Customers approving the Plan, such approvals being evidenced through adoption of similar resolutions or, in the case of private-sector organizations, by other equivalently binding written commitments signed by an executive officer acting within the scope of delegated authority, and all such approvals occurring on or before June 30, 2011.

If such resolutions or binding commitments are not adopted by that date, this resolution will automatically expire and be of no further effect after June 30, 2011, unless it has been extended prior thereto by further action of this *[Council, Board, etc.]*.

PASSED AND ADOPTED this \_\_\_\_ day of \_\_\_\_\_, 201\_\_, by the following vote:

AYES:

NOES:

ABSENT:

\_\_\_\_\_  
President, City Council

Approved as to form:

ATTEST:

\_\_\_\_\_  
City Attorney

\_\_\_\_\_  
City Clerk

**TABLE 1 - FIXED COMPONENT FOR USE IN TIER 2 ALLOCATION CALCULATION**

<b><u>Wholesale Customer</u></b>	<b><u>Fixed Component</u></b>
ACWD	13.76
Brisbane/GVMID	0.98
Burlingame	5.23
Coastside	2.18
CWS Total	35.68
Daly City	4.29
East Palo Alto	1.96
Esteros	5.90
Hayward	25.11
Hillsborough	4.09
Menlo Park	4.46
Mid Pen WD	3.89
Millbrae	3.15
Milpitas	9.23
Mountain View	13.46
North Coast	3.84
Palo Alto	17.07
Purissima Hills	1.62
Redwood City	10.93
San Bruno	3.25
San José	4.50
Santa Clara	4.50
Stanford	3.03
Sunnyvale	12.58
Westborough	1.32

**BASE/SEASONAL CUTBACK CALCULATION  
3 YEAR ROLLING AVERAGE OF TOTAL PRODUCTION**  
All Units In Hundred Cubic Feet (HCF) Except Where Otherwise Notes

Base Percentage Reduction =	10.00%
Seasonal Percentage Reduction =	65.00%
Number of Fiscal Years in Average =	1.0

Three-year averages by source

	July	August	September	October	November	December	January	February	March	April	May	June	Total				
SFPUC Net	9,492,234	8,865,793	8,847,818	7,624,081	5,785,671	5,320,333	4,925,451	4,167,812	4,333,119	5,780,803	7,102,580	7,427,737	79,673,432				
Groundwater	1,969,068	2,014,327	1,682,556	1,449,343	1,179,106	1,375,812	1,099,608	983,756	1,084,734	1,389,622	1,662,344	1,647,268	17,537,545				
Other	2,744,449	2,669,344	2,537,606	2,418,221	1,644,468	874,833	1,391,142	1,320,782	1,606,115	2,004,769	2,517,062	2,675,045	24,403,836				
Subtotal	14,205,751	13,549,464	13,067,981	11,491,646	8,609,245	7,570,977	7,416,201	6,472,350	7,023,968	9,175,195	11,281,986	11,750,050	121,614,813				
SFPUC Excess	(36,886)	(33,367)	(35,125)	(28,015)	(18,394)	(11,600)	(10,843)	(11,088)	(8,721)	(16,898)	(25,409)	(27,984)	(264,330)				
<b>Net</b>	<b>14,168,865</b>	<b>13,516,097</b>	<b>13,032,856</b>	<b>11,463,631</b>	<b>8,590,851</b>	<b>7,559,378</b>	<b>7,405,358</b>	<b>6,461,262</b>	<b>7,015,246</b>	<b>9,158,297</b>	<b>11,256,577</b>	<b>11,722,066</b>	<b>121,350,483</b>				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)

Three-year rolling monthly production average by Wholesale Customer with SFPUC purchases limited to ISG on a yearly basis

	July	August	September	October	November	December	January	February	March	April	May	June	Total Production	Base Component	Seasonal Component	Base/Seasonal Allocation	Base/Seasonal Cutback % (To Tab 2, Col 4)
ACWD	2,598,324	2,521,779	2,356,517	2,088,213	1,483,726	1,389,921	1,331,023	1,102,420	1,303,110	1,683,608	2,074,964	2,226,985	22,160,590	15,379,420	6,781,170	16,214,887	26.83%
Brisbane/GVMID	35,597	36,251	34,821	31,630	25,808	17,907	20,064	11,403	17,339	16,961	25,289	28,775	301,845	200,139	101,706	215,722	28.53%
Burlingame	237,426	236,780	214,046	203,879	183,921	127,936	130,576	132,703	110,995	141,580	164,657	202,117	2,086,616	1,506,630	579,986	1,558,962	25.29%
Coastside	118,409	120,160	102,807	103,917	69,291	70,976	72,928	57,246	48,396	79,714	90,816	102,112	1,036,773	748,636	288,136	774,620	25.29%
CWS	2,139,140	2,093,378	1,954,875	1,694,788	1,100,278	996,843	1,007,651	846,173	1,026,988	1,408,292	1,697,865	1,805,399	17,771,671	11,632,966	6,138,705	12,618,216	29.00%
Daly City	324,019	340,112	305,711	309,038	318,039	278,252	269,650	234,447	294,435	260,687	261,671	250,006	3,446,067	3,230,352	215,715	2,982,817	13.44%
East Palo Alto	100,845	98,204	99,301	92,276	74,634	56,388	70,278	60,063	54,918	67,468	89,886	71,174	935,435	724,941	210,494	726,120	22.38%
Esteros	304,604	294,448	299,906	248,800	231,729	136,155	133,622	145,923	92,203	162,122	208,383	252,034	2,509,929	1,523,709	986,220	1,716,515	31.61%
Hayward	983,955	851,762	917,490	828,612	740,510	843,184	700,858	519,840	611,449	572,724	849,545	836,615	9,256,544	8,025,993	1,230,551	7,654,087	17.31%
Hillsborough	250,428	239,293	339,873	187,852	149,425	70,505	87,857	68,263	46,840	77,287	127,533	179,470	1,794,626	730,395	1,064,231	1,029,836	42.62%
Menlo Park	205,878	197,865	195,391	171,845	118,504	78,597	80,370	82,369	70,962	108,772	169,161	151,171	1,630,885	936,894	693,991	1,086,101	33.40%
Mid Pen WD	174,821	168,580	176,218	154,115	126,396	83,564	95,477	90,390	83,076	124,092	124,306	141,794	1,542,829	1,057,521	485,308	1,121,627	27.30%
Millbrae	132,776	130,963	122,123	112,057	102,206	73,644	74,678	70,473	68,880	78,212	89,547	112,449	1,168,008	863,025	304,983	883,467	24.36%
Milpitas	560,066	511,819	499,068	456,297	339,619	346,470	345,211	313,013	348,809	390,135	458,282	487,604	5,056,393	4,060,509	995,884	4,003,018	20.83%
Mountain View	696,607	601,089	571,691	507,741	332,245	317,851	306,054	307,473	316,164	466,737	552,409	584,813	5,560,874	3,742,626	1,818,248	4,004,750	27.98%
North Coast	175,214	142,592	149,874	131,114	136,038	107,334	115,408	100,129	70,449	138,934	123,139	96,305	1,486,530	1,179,960	306,570	1,169,264	21.34%
Palo Alto	710,992	687,471	674,410	599,590	409,114	261,926	291,888	274,558	221,426	413,454	602,470	529,719	5,677,018	3,149,394	2,527,624	3,719,123	34.49%
Purissima Hills	116,098	102,177	112,087	86,968	57,418	30,674	27,294	31,514	18,976	46,701	77,214	85,712	792,832	325,373	467,459	456,447	42.43%
Redwood City	593,464	576,449	627,527	521,009	427,638	275,051	298,520	280,891	257,786	377,386	415,099	397,489	5,048,309	3,336,744	1,711,565	3,602,117	28.65%
San Bruno	177,048	195,589	172,534	162,980	128,108	140,430	140,637	109,929	143,808	160,884	162,280	183,615	1,877,842	1,604,412	273,430	1,539,671	18.01%
Stanford	127,534	102,493	119,688	94,886	78,913	65,097	99,295	69,251	59,292	81,719	90,169	118,440	1,106,776	878,805	227,971	870,714	21.33%
Sunnyvale	1,150,141	1,043,040	991,516	862,693	653,331	669,034	578,608	502,957	578,103	757,643	906,030	960,437	9,653,533	6,986,106	2,667,427	7,221,095	25.20%
Westborough	39,266	51,302	44,708	44,615	38,399	23,623	51,170	33,520	35,133	29,513	31,342	41,224	463,815	430,338	33,477	399,021	13.97%
	11,952,651	11,343,597	11,082,182	9,694,915	7,325,290	6,461,362	6,299,117	5,444,948	5,879,536	7,644,625	9,392,057	9,845,460	102,365,739	72,254,888	30,110,851	75,568,197	26.18%
San Jose	1,166,894	1,084,954	1,005,465	846,564	569,616	484,680	495,721	417,476	510,636	726,102	910,264	999,166	9,217,538	5,725,539	3,491,999	6,375,185	30.84%
Santa Clara	1,049,320	1,087,546	945,209	922,152	695,945	613,336	610,520	598,838	625,074	787,570	954,256	877,440	9,767,206	7,343,304	2,423,902	7,457,339	23.65%
	14,168,865	13,516,097	13,032,856	11,463,631	8,590,851	7,559,378	7,405,358	6,461,262	7,015,246	9,158,297	11,256,577	11,722,066	121,350,483	157,578,619	66,137,603	89,400,721	26.33%

Column Notes

- (1) thru (12) Calculated as the net potable water supply production for all sources, three-year rolling average, by month, and by suburban purchaser, with ISG limits imposed on Annual SFPUC Purchases from Step 1a (Step 1b)
- (13) Sum of columns (1) thru (12)
- (14) Base Component: Calculated as the winter average usage (Cols 6 through 9 - December through March), multiplied by 12 (Step 1c)
- (15) Seasonal Component: Calculated as the total production (Col 13) minus the base component (Col 14) (Step 1d)
- (16) Base/Seasonal Allocations: Calculated as the Base Component minus the Base Reduction plus the Seasonal Component minus the Seasonal Reduction (Step 1e)
- (17) Base/Seasonal Cutback: Calculated as the ratio of an agency's Base/Seasonal Allocation to its Total Production, minus 1, expressed as a percent (Step 1f)

TABLE 3 - CALCULATION OF FINAL PURCHASE CUTBACK AND ALLOCATION FACTOR FOR TIER 2 DROUGHT IMPLEMENTATION PLAN (DRIP)

Overall Average Wholesale Customer Reduction: 26.84%  
 Reduction from purchases in: FY 08-09

Base = 10.00%  
 Seasonal = 65.00%

Weighted average for Column 10:  
 0.33 =ISG component (Col. 2)  
 0.67 =Base/Seasonal component (Col. 9)

Variable component - Base/Seasonal Allocation (with ISG cap)  
 Minimum (Column 19) = 10.00%  
 Ceiling (Col. 21) = avg. cutback + 20.00%

Minimum residential per capita use threshold (Column 29) = 55.00 gpcpd

Agency Information	Initial Allocations Based on Weighted Fixed (ISG) and Variable (Base/Seasonal) Components Adjusting for SJ/SC												Adjustment for Minimum and Maximum Cutbacks					Adjustment for East Palo Alto											
	Base/Seasonal Allocations				1st SJ/SC Adjustment				2nd SJ/SC Adjustment				Minimum Cutback Adj.		Maximum Cutback Adjustment			Agencies To Which EPA Adjustment Applies											
FY 08-09 SFPUC Purchases	Fixed Comp.	Lesser of Purchase or ISG	Base/Seasonal Allocation	Base/Seasonal Allocation	Subtotal Allocation Factors	Adjusted Base/Seasonal Allocation	Weighted ISG-Base/Seasonal Avg	Allocation Factors	Weighted Shortage Allocation	Weighted Purchase Cutback	Subtotal Allocation Factors	Adjusted Weighted Allocation	Adjusted Weighted Cutback	Adjusted for Minimum Cutback	Adjusted for Maximum Cutback	Over Cap	Adjusted For Cap	Agencies To Which Cutback Over Cap Is Redistributed	Min/Max Adjusted Allocation	Adj. Purchase Cutbacks	FY 08-09 Residential Per Capita	Share of EPA Adjustment	Allocations With EPA Adjustments	Final Purchase Cutback	Final Allocation Factor				
ACWID	11.24	13.76	11.24	-26.83%	8.22	-26.83%	7.19%	8.35	10.14	7.00%	8.37	-25.55%	7.26%	8.43	-24.99%	-24.99%	8.43	8.43	8.40	-25.29%	91.40	8.40	-0.019	8.376	-2.860	-25.45%	7.01%		
Brisbane/GVMID	0.62	0.98	0.62	-28.53%	0.44	-28.53%	0.39%	0.45	0.62	0.43%	0.52	-16.72%	0.45%	0.52	-16.10%	-16.10%	0.52	0.52	0.52	-16.43%	62.89	0.52	-0.001	0.516	-0.103	-16.62%	0.43%		
Burlingame	4.28	5.23	4.28	-25.29%	3.20	-25.29%	2.79%	3.25	3.90	2.70%	3.22	-24.70%	2.83%	3.24	-24.13%	-24.13%	3.24	3.24	3.23	-24.43%	89.50	3.23	-0.007	3.224	-1.052	-24.60%	2.70%		
Coastside	1.97	2.18	1.97	-25.29%	1.47	-25.29%	1.28%	1.49	1.72	1.19%	1.42	-27.83%	1.20%	1.43	-27.29%	-27.29%	1.43	1.43	1.42	-27.58%	68.30	1.42	-0.003	1.421	-0.545	-27.74%	1.19%		
CWS Total	35.84	35.68	35.68	-29.00%	25.33	-29.31%	22.15%	25.73	29.01	20.05%	23.95	-33.17%	20.79%	24.13	-32.67%	-32.67%	24.13	24.13	24.03	-32.94%	107.12	24.03	-0.054	23.977	-11.858	-33.09%	20.07%		
Daly City	4.10	4.29	4.10	-13.44%	3.55	-13.44%	3.11%	3.61	3.83	2.65%	3.16	-22.90%	2.75%	3.19	-22.32%	-22.32%	3.19	3.19	3.18	-22.63%	50.00	3.176	-0.029	22.63%	2.66%	3.176	-0.929	-22.63%	2.66%
East Palo Alto	1.92	1.96	1.92	-22.38%	1.49	-22.38%	1.30%	1.51	1.66	1.15%	1.37	-28.55%	1.19%	1.38	-28.02%	-28.02%	1.38	1.38	1.375	-28.30%	45.30	1.375	-0.005	1.370	-0.257	-13.42%	1.39%		
Esoto	5.14	5.90	5.14	-31.61%	3.52	-31.61%	3.08%	3.57	4.34	3.00%	3.58	-30.34%	3.11%	3.61	-29.82%	-29.82%	3.61	3.61	3.60	-30.10%	85.40	3.60	-0.008	3.588	-1.556	-30.26%	3.00%		
Hayward	18.97	25.11	18.97	-17.31%	15.69	-17.31%	13.72%	15.93	18.96	13.10%	15.65	-17.50%	13.59%	15.77	-16.88%	-16.88%	15.77	15.77	15.71	-17.21%	64.00	15.71	-0.025	15.670	-3.301	-17.40%	13.12%		
Hillsborough	3.68	4.09	3.68	-42.62%	2.11	-42.62%	1.85%	2.14	2.79	1.93%	2.30	-37.47%	2.00%	2.32	-37.01%	-37.01%	2.32	2.32	2.31	-37.26%	289.50	2.31	-0.005	2.303	-1.375	-37.40%	1.93%		
Menlo Park	3.34	4.46	3.34	-33.40%	2.23	-33.40%	1.95%	2.26	2.99	2.06%	2.47	-26.25%	2.14%	2.48	-25.69%	-25.69%	2.48	2.48	2.47	-25.99%	104.60	2.47	-0.006	2.468	-0.874	-26.16%	2.07%		
Mid Pen WD	3.16	3.89	3.16	-27.30%	2.30	-27.30%	2.01%	2.33	2.85	1.97%	2.35	-25.64%	2.04%	2.37	-25.08%	-25.08%	2.37	2.37	2.36	-25.38%	83.90	2.36	-0.005	2.354	-0.808	-25.55%	1.97%		
Millbrae	2.39	3.15	2.39	-24.36%	1.81	-24.36%	1.58%	1.84	2.27	1.57%	1.88	-21.65%	1.63%	1.89	-21.06%	-21.06%	1.89	1.89	1.88	-21.38%	75.70	1.88	-0.004	1.878	-0.516	-21.55%	1.57%		
Milpitas	6.91	9.23	6.91	-20.83%	5.47	-20.83%	4.79%	5.56	6.77	4.68%	5.59	-19.16%	4.85%	5.63	-18.56%	-18.56%	5.63	5.63	5.61	-18.88%	65.10	5.61	-0.013	5.595	-1.318	-19.06%	4.68%		
Mountain View	9.81	13.46	9.81	-27.98%	7.07	-27.98%	6.18%	7.18	9.25	6.39%	7.64	-22.19%	6.63%	7.69	-21.61%	-21.61%	7.69	7.69	7.66	-21.92%	78.80	7.66	-0.017	7.646	-2.169	-22.10%	6.40%		
North Coast	3.05	3.84	3.05	-21.34%	2.40	-21.34%	2.10%	2.43	2.90	2.00%	2.39	-21.50%	2.08%	2.41	-20.91%	-20.91%	2.41	2.41	2.40	-21.23%	57.10	2.40	-0.005	2.395	-0.652	-21.40%	2.00%		
Palo Alto	11.63	17.07	11.63	-34.49%	7.62	-34.49%	6.66%	7.74	10.82	7.48%	8.93	-23.25%	7.75%	9.00	-22.65%	-22.65%	9.00	9.00	8.96	-22.96%	107.00	8.96	-0.020	8.943	-2.491	-23.13%	7.49%		
Purisima Hills	2.01	1.62	1.62	-42.43%	0.94	-53.47%	0.82%	0.95	1.17	0.81%	0.97	-51.85%	0.84%	0.98	-51.49%	-51.49%	0.98	0.98	1.07	-46.84%	302.70	1.069	-0.942	-46.84%	0.89%	0.89%			
Redwood City	10.35	10.93	10.35	-28.65%	7.38	-28.65%	6.45%	7.50	8.63	5.96%	7.12	-31.15%	6.18%	7.18	-30.63%	-30.63%	7.18	7.18	7.15	-30.91%	65.40	7.15	-0.016	7.132	-3.214	-31.06%	5.97%		
San Bruno	1.94	3.25	1.94	-18.01%	1.59	-18.01%	1.39%	1.62	2.15	1.49%	1.78	-8.42%	1.54%	1.79	-7.74%	-10.00%	1.75	1.75	1.75	-10.00%	86.20	1.75	-0.006	1.748	-0.194	-10.00%	1.46%		
Stanford	2.27	3.03	2.27	-21.33%	1.78	-21.33%	1.56%	1.81	2.22	1.53%	1.83	-19.39%	1.59%	1.84	-18.79%	-18.79%	1.84	1.84	1.83	-19.11%	N/A	1.83	-0.004	1.831	-0.438	-19.29%	1.53%		
Sunnyvale	10.62	12.58	10.62	-25.20%	7.94	-25.20%	6.95%	8.07	9.56	6.60%	7.89	-25.72%	6.85%	7.95	-25.16%	-25.16%	7.95	7.95	7.92	-25.46%	89.20	7.92	-0.018	7.898	-2.721	-25.62%	6.61%		
Westborough	0.95	1.32	0.95	-13.97%	0.82	-13.97%	0.72%	0.83	0.99	0.69%	0.82	-13.86%	0.71%	0.82	-13.21%	-13.21%	0.82	0.82	0.82	-13.56%	48.50	0.82	-0.019	48.500	-0.129	-13.56%	0.69%		
Subtotal	156.19		156.19	-26.18%	114.37	-26.78%	100.00%	116.16	139.55		115.18	-26.26%	100.00%	116.05	-25.70%	-25.70%	116.09	113.28	115.65	-25.96%	115.689	107.46		115.689	-40.503	-25.93%	100.00%		
San José	4.46	4.50	4.46	-30.84%	3.08	-30.84%		2.07	2.87	1.99%	2.37	-46.78%	2.15	-51.85%	-51.85%	-46.84%	-0.223	2.37	2.37	-46.84%	63.20	2.37	-0.004	1.831	-0.438	-19.29%	1.53%		
Santa Clara	2.64	4.50	2.64	-23.65%	2.01	-23.65%		1.23	2.31	1.59%	1.90	-27.78%	1.27	-51.85%	-51.85%	-46.84%	-0.132	1.40	1.40	-46.84%	85.80	1.401	-1.235	-46.84%	1.17%	1.17%			
Total	163.29		163.29	-26.33%	119.46	-26.84%		119.46	144.73	100.00%	119.46	-26.84%		119.46	-26.84%	-26.84%	-0.044	-26.84%	-0.449	119.87	113.28	119.42	-26.87%		119.461	-43.826	-26.84%	100.00%	

\*\*All values in MGD unless noted otherwise

Column Notes

- Agency Information  
 (1) SFPUC Purchases: From Tab 1.  
 (2) Fixed Component: Individual Supply Guarantees for most agencies from Tab 1; 4.5 mgd for SJ & SC; projected 2018 demand before conservation used as surrogate for Hayward
- Base/Seasonal Allocations  
 (3) Lesser of Purchase or ISG: The lesser of column (1) or column (2).  
 (4) Base/Seasonal Allocation Cutback: From Tab 3, column (17).  
 (5) Base/Seasonal Allocation: column (3) reduced by the Base/Seasonal cutback in column (4).  
 (6) Base/Seasonal Purchase Cutback: The change between column (5) and column (1) shown as a percentage.
- First San Jose/Santa Clara Adjustment: This adjustment is made so that Santa Clara's and San Jose's cutbacks are at least as great as the highest cutback by the permanent customers.  
 (7) Subtotal Allocation Factors: The ratio of each permanent agency's column (5) allocation to the column (5) subtotal.  
 (8) Adjusted Base/Seasonal Allocation: Redistributes "First SJ/SC Adjustment" line 4 value among the permanent customers based on the proportionate shares in column (8).
- Allocations Based on Weighted ISG Base/Seasonal Average  
 (9) Weighted ISG/Base-Seasonal Avg: 33% of column (2) plus 67% of column (8).  
 (10) Allocation Factors: Each agency's proportionate share of column (9).  
 (11) Weighted Shortage Allocation: Column (9) times the available water supply (column (5) total).  
 (12) Weighted Purchase Cutback: The change between column (11) and column (1) shown as a percentage.
- Second San Jose/Santa Clara Adjustment: This adjustment is made so that Santa Clara's and San Jose's cutbacks are at least as great as the highest cutback by the permanent customers.  
 (13) Subtotal Allocation Factors: The ratio of each permanent agency's column (11) allocation to the column (11) subtotal.  
 (14) Adjusted Weighted Shortage Allocation: Redistributes "Second SJ/SC Adjustment" line 4 value among the permanent customers based on the proportionate shares in column (13).

Column Notes

- Adjustment for Minimum Cutback: This adjustment forces a 10% minimum cutback with the reallocated water being placed in a hardship bank for later application to East Palo Alto.  
 (16) Adjusted for 10% Minimum Cutback: Decreases any percentage cutback in column (15) that is less than the minimum 10% floor to equal the 10% floor.  
 (17) Additional Cutback for Hardship Bank: The difference between column (15) and column (16) times column (1).
- Adjustment for Maximum Cutback: This adjustment is made so that the maximum cutback applied to any agency is equal to the Overall Average BAWSCA Reduction + 20%.  
 (18) Adjusted for Maximum Cutback: Caps the cutbacks in column (18) to no more than 20% more than the average cutback.  
 (19) Cutback Over Cap: The difference between column (18) and column (15) times column (1).  
 (20) Allocations Adjusted for Cap: Purchases in column (1) reduced by the cutbacks in column (18).  
 (21) Agencies to Which Cutback Over Cap Is Redistributed: Agencies that are not subject to the minimum or maximum adjustments in columns (17) and (19).  
 (22) Minimum/Maximum Adjusted Allocation: Redistributes the excess cutback in column (19) by the proportions in column (21) to agencies shown in column (21).  
 (23) Adjusted Min/Max Purchase Cutbacks: The change between column (22) and column (1) shown as a percentage.
- Adjustment for East Palo Alto (Low Residential Gallons per Capita per Day Adjustment)  
 (24) Residential Per Capita Usage: From Tab 1.  
 (25) Agencies To Which EPA Adjustment Applies: Column (22) agency allocations, except those whose GPCD is less than 55 GPCD & those who are impacted by the min/max cutback.  
 (26) Share of EPA Adjustment: EPA value equal to difference 50% of the Overall Average Wholesale Customer Reduction and the sum of column (17) total (Hardship Bank value) and EPA allocation in column (22).  
 (27) Allocation with EPA Adjustment: Column (22) plus column (26).
- Final Allocations  
 (28) Final Purchase Cutback: Column (27) minus column (1) expressed as MGD  
 (29) Final Purchase Cutback: The change between column (31) and column (1) shown as a percentage.  
 (30) Final Allocation Factor: Each agency's allocation from Column (27) divided by the total water allocated to the wholesale agencies (total in Column (27)), shown as a percentage

## ATTACHMENT H

### WATER SHORTAGE ALLOCATION PLAN

This Interim Water Shortage Allocation Plan ("Plan") describes the method for allocating water between the San Francisco Public Utilities Commission ("SFPUC") and the Wholesale Customers collectively during shortages caused by drought. The Plan implements a method for allocating water among the individual Wholesale Customers which has been adopted by the Wholesale Customers. The Plan includes provisions for transfers, banking, and excess use charges. The Plan applies only when the SFPUC determines that a system-wide water shortage due to drought exists, and all references to "shortages" and "water shortages" are to be so understood. This Plan was adopted pursuant to Section 7.03(a) of the 1984 Settlement Agreement and Master Water Sales Contract and has been updated to correspond to the terminology used in the June 2009 Water Supply Agreement between the City and County of San Francisco and Wholesale Customers in Alameda County, San Mateo County and Santa Clara County ("Agreement").

#### SECTION 1. SHORTAGE CONDITIONS

**1.1. Projected Available SFPUC Water Supply.** The SFPUC shall make an annual determination as to whether or not a shortage condition exists. The determination of projected available water supply shall consider, among other things, stored water, projected runoff, water acquired by the SFPUC from non-SFPUC sources, inactive storage, reservoir losses, allowance for carryover storage, and water bank balances, if any, described in Section 3.

**1.2 Projected SFPUC Purchases.** The SFPUC will utilize purchase data, including volumes of water purchased by the Wholesale Customers and by Retail Customers (as those terms are used in the Agreement) in the year immediately prior to the drought, along with other available relevant information, as a basis for determining projected system-wide water purchases from the SFPUC for the upcoming year.

**1.3. Shortage Conditions.** The SFPUC will compare the available water supply (Section 1.1) with projected system-wide water purchases (Section 1.2). A shortage condition exists if the SFPUC determines that the projected available water supply is less than projected system-wide water purchases in the upcoming Supply Year (defined as the period from July 1 through June 30). When a shortage condition exists, SFPUC will determine whether voluntary or mandatory actions will be required to reduce purchases of SFPUC water to required levels.

**1.3.1 Voluntary Response.** If the SFPUC determines that voluntary actions will be sufficient to accomplish the necessary reduction in water use throughout its service area, the SFPUC and the Wholesale Customers will make good faith efforts to reduce their water purchases to stay within their annual shortage allocations and associated monthly water use budgets. The SFPUC will not impose excess use charges during periods of voluntary rationing, but may suspend the prospective accumulation of water bank credits, or impose a ceiling on further accumulation of bank credits, consistent with Section 3.2.1 of this Plan.

**1.3.2 Mandatory Response.** If the SFPUC determines that mandatory actions will be required to accomplish the necessary reduction in water use in the SFPUC service area, the SFPUC may implement excess use charges as set forth in Section 4 of this Plan.

**1.4. Period of Shortage.** A shortage period commences when the SFPUC determines that a water shortage exists, as set forth in a declaration of water shortage emergency issued by the SFPUC pursuant to California Water Code Sections 350 et seq. Termination of the water shortage emergency will be declared by resolution of the SFPUC.

## SECTION 2. SHORTAGE ALLOCATIONS

**2.1. Annual Allocations between the SFPUC and the Wholesale Customers.** The annual water supply available during shortages will be allocated between the SFPUC and the collective Wholesale Customers as follows:

Level of System Wide Reduction in Water Use Required	Share of Available Water	
	SFPUC Share	Wholesale Customers Share
5% or less	35.5%	64.5%
6% through 10%	36.0%	64.0%
11% through 15%	37.0%	63.0%
16% through 20%	37.5%	62.5%

The water allocated to the SFPUC shall correspond to the total allocation for all Retail Customers.

**2.2 Annual Allocations among the Wholesale Customers.** The annual water supply allocated to the Wholesale Customers collectively during system wide shortages of 20 percent or less will be apportioned among them based on a methodology adopted by all of the Wholesale Customers, as described in Section 3.11(C) of the Agreement. In any year for which the methodology must be applied, the Bay Area Water Supply and Conservation Agency ("BAWSCA") will calculate each Wholesale Customer's individual percentage share of the amount of water allocated to the Wholesale Customers collectively pursuant to Section 2.1. Following the declaration or reconfirmation of a water shortage emergency by the SFPUC, BAWSCA will deliver to the SFPUC General Manager a list, signed by the President of BAWSCA's Board of Directors and its General Manager, showing each Wholesale Customer together with its percentage share and stating that the list has been prepared in accordance with the methodology adopted by the Wholesale Customers. The SFPUC shall allocate water to each Wholesale Customer, as specified in the list. The shortage allocations so established may be transferred as provided in Section 2.5 of this Plan. If BAWSCA or all Wholesale Customers do not provide the SFPUC with individual allocations, the SFPUC may make a final allocation decision after first meeting and discussing allocations with BAWSCA and the Wholesale Customers.

The methodology adopted by the Wholesale Customers utilizes the rolling average of each individual Wholesale Customer's purchases from the SFPUC during the three immediately

preceding Supply Years. The SFPUC agrees to provide BAWSCA by November 1 of each year a list showing the amount of water purchased by each Wholesale Customer during the immediately preceding Supply Year. The list will be prepared using Customer Service Bureau report MGT440 (or comparable official record in use at the time), adjusted as required for any reporting errors or omissions, and will be transmitted by the SFPUC General Manager or his designee.

**2.3. Limited Applicability of Plan to System Wide Shortages Greater Than Twenty**

**Percent.** The allocations of water between the SFPUC and the Wholesale Customers collectively, provided for in Section 2.1, apply only to shortages of 20 percent or less. The SFPUC and Wholesale Customers recognize the possibility of a drought occurring which could create system-wide shortages greater than 20 percent despite actions taken by the SFPUC aimed at reducing the probability and severity of water shortages in the SFPUC service area. If the SFPUC determines that a system wide water shortage greater than 20 percent exists, the SFPUC and the Wholesale Customers agree to meet within 10 days and discuss whether a change is required to the allocation set forth in Section 2.1 in order to mitigate undue hardships that might otherwise be experienced by individual Wholesale Customers or Retail Customers. Following these discussions, the Tier 1 water allocations set forth in Section 2.1 of this Plan, or a modified version thereof, may be adopted by mutual written consent of the SFPUC and the Wholesale Customers. If the SFPUC and Wholesale Customers meet and cannot agree on an appropriate Tier 1 allocation within 30 days of the SFPUC's determination of water shortage greater than 20 percent, then (1) the provisions of Section 3.11(C) of the Agreement will apply, unless (2) all of the Wholesale Customers direct in writing that a Tier 2 allocation methodology agreed to by them be used to apportion the water to be made available to the Wholesale Customers collectively, in lieu of the provisions of Section 3.11(C).

The provisions of this Plan relating to transfers (in Section 2.5), banking (in Section 3), and excess use charges (in Section 4) shall continue to apply during system-wide shortages greater than 20 percent.

**2.4. Monthly Water Budgets.** Within 10 days after adopting a declaration of water shortage emergency, the SFPUC will determine the amount of Tier 1 water allocated to the Wholesale Customers collectively pursuant to Section 2.1. The SFPUC General Manager, using the Tier 2 allocation percentages shown on the list delivered by BAWSCA pursuant to Section 2.2, will calculate each Wholesale Customer's individual annual allocation. The SFPUC General Manager, or his designee, will then provide each Wholesale Customer with a proposed schedule of monthly water budgets based on the pattern of monthly water purchases during the Supply Year immediately preceding the declaration of shortage (the "Default Schedule"). Each Wholesale Customer may, within two weeks of receiving its Default Schedule, provide the SFPUC with an alternative monthly water budget that reschedules its annual Tier 2 shortage allocation over the course of the succeeding Supply Year. If a Wholesale Customer does not deliver an alternative monthly water budget to the SFPUC within two weeks of its receipt of the Default Schedule, then its monthly budget for the ensuing Supply Year shall be the Default Schedule proposed by the SFPUC.

Monthly Wholesale Customer water budgets will be derived from annual Tier 2 allocations for purposes of accounting for excess use. Monthly Wholesale Customer water budgets shall be adjusted during the year to account for transfers of shortage allocation under Section 2.5 and

transfers of banked water under Section 3.4.

**2.5. Transfers of Shortage Allocations.** Voluntary transfers of shortage allocations between the SFPUC and any Wholesale Customers, and between any Wholesale Customers, will be permitted using the same procedure as that for transfers of banked water set forth in Section 3.4. The SFPUC and BAWSCA shall be notified of each transfer. Transfers of shortage allocations shall be deemed to be an emergency transfer and shall become effective on the third business day after notice of the transfer has been delivered to the SFPUC. Transfers of shortage allocations shall be in compliance with Section 3.05 of the Agreement. The transferring parties will meet with the SFPUC, if requested, to discuss any effect the transfer may have on its operations.

### SECTION 3. SHORTAGE WATER BANKING

**3.1. Water Bank Accounts.** The SFPUC shall create a water bank account for itself and each Wholesale Customer during shortages in conjunction with its resale customer billing process. Bank accounts will account for amounts of water that are either saved or used in excess of the shortage allocation for each agency; the accounts are not used for tracking billings and payments. When a shortage period is in effect (as defined in Section 1.4), the following provisions for bank credits, debits, and transfers shall be in force. A statement of bank balance for each Wholesale Customer will be included with the SFPUC's monthly water bills.

**3.2. Bank Account Credits.** Each month, monthly purchases will be compared to the monthly budget for that month. Any unused shortage allocation by an agency will be credited to that agency's water bank account. Credits will accumulate during the entire shortage period, subject to potential restrictions imposed pursuant to Section 3.2.1. Credits remaining at the end of the shortage period will be zeroed out; no financial or other credit shall be granted for banked water.

**3.2.1. Maximum Balances.** The SFPUC may suspend the prospective accumulation of credits in all accounts. Alternatively, the SFPUC may impose a ceiling on further accumulation of credits in water bank balances based on a uniform ratio of the bank balance to the annual water allocation. In making a decision to suspend the prospective accumulation of water bank credits, the SFPUC shall consider the available water supply as set forth in Section 1.1 of this Plan and other reasonable, relevant factors.

**3.3. Account Debits.** Each month, monthly purchases will be compared to the budget for that month. Purchases in excess of monthly budgets will be debited against an agency's water bank account. Bank debits remaining at the end of the fiscal year will be subject to excess use charges (see Section 4).

**3.4. Transfers of Banked Water.** In addition to the transfers of shortage allocations provided for in Section 2.5, voluntary transfers of banked water will also be permitted between the SFPUC and any Wholesale Customer, and among the Wholesale Customers. The volume of transferred water will be credited to the transferee's water bank account and debited against the transferor's water bank account. The transferring parties must notify the SFPUC and BAWSCA of each transfer in writing (so that adjustments can be made to bank accounts), and will meet with the SFPUC, if requested, to discuss any affect the transfer may have on SFPUC operations. Transfers of banked water shall be deemed to be an emergency transfer and shall become effective on the third business day after notice of the transfer has been delivered to the SFPUC.

If the SFPUC incurs extraordinary costs in implementing transfers, it will give written notice to the transferring parties within ten (10) business days after receipt of notice of the transfer. Extraordinary costs means additional costs directly attributable to accommodating transfers and which are not incurred in non-drought years nor simply as a result of the shortage condition itself. Extraordinary costs shall be calculated in accordance with the procedures in the Agreement and shall be subject to the disclosure and auditing requirements in the Agreement. In the case of transfers between Wholesale Customers, such extraordinary costs shall be considered to be expenses chargeable solely to individual Wholesale Customers and shall be borne equally by the parties to the transfer. In the case of transfers between the SFPUC and a Wholesale Customer, the SFPUC's share of any extraordinary transfer costs shall not be added to the Wholesale Revenue Requirement.

**3.4.1. Transfer Limitations.** The agency transferring banked water will be allowed to transfer no more than the accumulated balance in its bank. Transfers of estimated prospective banked credits and the "overdrafting" of accounts shall not be permitted. The price of transfer water originally derived from the SFPUC system is to be determined by the transferring parties and is not specified herein. Transfers of banked water shall be in compliance with Section 3.05 of the Agreement.

#### SECTION 4. WHOLESALE EXCESS USE CHARGES

**4.1. Amount of Excess Use Charges.** Monthly excess use charges shall be determined by the SFPUC at the time of the declared water shortage consistent with the calendar in Section 6 and in accordance with Section 6.03 of the Agreement. The excess use charges will be in the form of multipliers applied to the rate in effect at the time the excess use occurs. The same excess use charge multipliers shall apply to the Wholesale Customers and all Retail Customers. The excess use charge multipliers apply only to the charges for water delivered at the rate in effect at the time the excess use occurred.

**4.2 Monitoring Suburban Water Use.** During periods of voluntary rationing, water usage greater than a customer's allocation (as determined in Section 2) will be indicated on each SFPUC monthly water bill. During periods of mandatory rationing, monthly and cumulative water usage greater than a Wholesale Customer's shortage allocation and the associated excess use charges will be indicated on each SFPUC monthly water bill.

**4.3. Suburban Excess Use Charge Payments.** An annual reconciliation will be made of monthly excess use charges according to the calendar in Section 6. Annual excess use charges will be calculated by comparing total annual purchases for each Wholesale Customer with its annual shortage allocation (as adjusted for transfers of shortage allocations and banked water, if any). Excess use charge payments by those Wholesale Customers with net excess use will be paid according to the calendar in Section 6. The SFPUC may dedicate excess use charges paid by Wholesale Customers toward the purchase of water from the State Drought Water Bank or other willing sellers in order to provide additional water to the Wholesale Customers. Excess use charges paid by the Wholesale Customers constitute Wholesale Customer revenue and shall be included within the SFPUC's annual Wholesale Revenue Requirement calculation.

## SECTION 5. GENERAL PROVISIONS GOVERNING WATER SHORTAGE ALLOCATION PLAN

**5.1. Construction of Terms.** This Plan is for the sole benefit of the parties and shall not be construed as granting rights to any person other than the parties or imposing obligations on a party to any person other than another party.

**5.2. Governing Law.** This Plan is made under and shall be governed by the laws of the State of California.

**5.3. Effect on Agreement.** This Plan describes the method for allocating water between the SFPUC and the collective Wholesale Customers during system-wide water shortages of 20 percent or less. This Plan also provides for the SFPUC to allocate water among the Wholesale Customers in accordance with directions provided by the Wholesale Customers through BAWSCA under Section 2.2, and to implement a program by which such allocations may be voluntarily transferred among the Wholesale Customers. The provisions of this Plan are intended to implement Section 3.11(C) of the Agreement and do not affect, change or modify any other section, term or condition of the Agreement.

**5.4. Inapplicability of Plan to Allocation of SFPUC System Water During Non-Shortage Periods.** The SFPUC's agreement in this Plan to a respective share of SFPUC system water during years of shortage shall not be construed to provide a basis for the allocation of water between the SFPUC and the Wholesale Customers when no water shortage emergency exists.

**5.5. Termination.** This Plan shall expire at the end of the Term of the Agreement.. The SFPUC and the Wholesale Customers can mutually agree to revise or terminate this Plan prior to that date due to changes in the water delivery capability of the SFPUC system, the acquisition of new water supplies, and other factors affecting the availability of water from the SFPUC system during times of shortage.

## SECTION 6. ALLOCATION CALENDAR

**6.1. Annual Schedule.** The annual schedule for the shortage allocation process is shown below. This schedule may be changed by the SFPUC to facilitate implementation.

**6.1.1****In All Years**

- |  | <b>Target Dates</b>   |
|--|---|
| 1. SFPUC delivers list of annual purchases by each Wholesale Customer during the immediately preceding Supply Year                           | November 1  |
| 2. SFPUC meets with the Wholesale Customers and presents water supply forecast for the following Supply Year                                 | February  |
| 3. SFPUC issues initial estimate of available water supply   | February 1  |
| 4. SFPUC announces potential first year of drought (if applicable)   | February 1  |
| 5. SFPUC and Wholesale Customers meet upon request to exchange information concerning water availability and projected system-wide purchases | February 1-May 31   |
| 6. SFPUC issues revised estimate of available water supply, and confirms continued potential shortage conditions, if applicable              | March 1   |
| 7. SFPUC issues final estimate of available water supply   | April 15 <sup>th</sup> or sooner if adequate snow course measurement data is available to form a robust estimate on available water supply for the coming year. |
| 8. SFPUC determines amount of water available to Wholesale Customers collectively  | April 15 <sup>th</sup> or sooner if adequate snow course measurement data is available to form a robust estimate on available water supply for the coming year. |

**In Drought Years**

- |   | <b>Target Dates</b>   |
|---|---|
| 9. SFPUC formally declares the existence of water shortage emergency (or end of water shortage emergency, if applicable) under Water Code Sections 350 et. seq.                 | April 15-31   |
| 10. SFPUC declares the need for a voluntary or mandatory response   | April 15-31   |
| 11. BAWSCA submits calculation to SFPUC of individual Wholesale Customers' percentage shares of water allocated to Wholesale Customers collectively                             | April 15- 31  |
| 12. SFPUC determines individual shortage allocations, based on BAWSCA's submittal of individual agency percentage shares to SFPUC, and monthly water budgets (Default Schedule) | April 25—May 10   |
| 13. Wholesale Customers submit alternative monthly water budgets (optional)   | May 8-May 24  |
| 14. Final drought shortage allocations are issued for the Supply Year beginning July 1 through June 30  | June 1  |
| 15. Monthly water budgets become effective  | July 1  |
| 16. Excess use charges indicated on monthly Suburban bills  | August 1 (of the beginning year) through June 30 (of the succeeding year) |
| 17. Excess use charges paid by Wholesale Customers for prior year   | August of the succeeding year   |

**Sunnyvale Municipal Code**[Up](#)[Previous](#)[Next](#)[Main](#)[Collapse](#)[Search](#)[Print](#)[No Frames](#)[Title 12. WATER AND SEWERS](#)**Chapter 12.34. WATER CONSERVATION RESTRICTIONS**

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**12.34.010. Purpose and application.**

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The purpose of this chapter is to identify and restrict nonessential water uses which, if allowed, would constitute wastage of the water supply of the city. The provisions of this chapter shall apply to all persons or entities using water obtained from the city of Sunnyvale both in and outside the city of Sunnyvale and within the city's water service area, and regardless of whether any person or entity using water has a contract for water service with the city. Use of water by the city itself shall be in conformance with a water conservation plan to be presented by the city manager to the city council for approval, and which shall essentially conform to the provisions of this chapter. This chapter is adopted pursuant to the provisions of Water Code Section 350, et seq., the city charter and the common law. (Ord. 2433-93 § 1 (part)).

**12.34.020. Nonessential uses prohibited.**

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The following uses, methods, types or techniques of uses of water are hereby determined and declared nonessential, and except as expressly provided to the contrary, are hereby prohibited:

(a) Allowing or maintaining broken or defective plumbing, sprinklers, watering or irrigation systems which permit the escape or leakage of potable water.

(b) Using potable water in any manner which causes, allows or permits the flooding of any premises, or any portion thereof, or which causes, allows or permits water to escape from any premises or any portion thereof and flow into gutters, streets, or any surface water drainage system.

(c) Using any hose or similar device using potable water for washing automobiles, trucks, buses, boats, trailers, equipment, recreational vehicles, mobilehomes or other vehicles or machinery, unless the hose or device is equipped with a positive automatic shutoff valve.

(d) Using potable water to wash sidewalks, driveways, filling station aprons, patios, parking lots, porches or other paved or hard surfaced areas, unless there is a positive automatic shutoff valve on the outlet end of the hose.

(e) The service of water by any restaurant or other eating or refreshment establishment to any patron, except upon the specific request by a patron for such services.

(f) Installation of any single pass cooling process in new construction.

(g) Any use of nonpotable water not in compliance with all federal, state and local laws, rules and regulations. Use of reclaimed water from the city's water pollution control plant shall be subject to the discretion of the director of public works. (Ord. 2433-93 § 1 (part)).

**12.34.030. Exceptions.**

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(a) The director of public works is hereby authorized to grant to any user an exception to the prohibitions set forth in Section 12.34.020, upon a finding by the director that such exception is necessary to prevent an emergency condition affecting the health, sanitation or fire protection of such user, and that the user to whom such adjustment or exception pertains has adopted or used all practicable water conservation measures.

(b) Exceptions permitted hereunder shall be made only upon written application submitted to the director setting forth a statement of justification for such exception. The director may attach conditions, specifications or other qualifying provisions to any exception granted. (Ord. 2433-93 § 1 (part)).

**12.34.040. Penalty—Flow restricting devices.**

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(a) Upon a determination by the director of public works that a user has continuously or repeatedly violated or failed to comply with one or more provisions of Section 12.34.020, or of any conditions of any exception granted pursuant to the provisions of Section 12.34.030, the director may issue an order to cease and desist from continued or repeated violation, and further order such user to comply forthwith with such provisions or terms of exception, or otherwise to take appropriate remedial or preventive action. If after the issuance of such cease and desist order, such user continues to consume or use, or again consumes or uses water in violation of any such provision or condition of exception, the director may order the installation of a flow restricting device upon the water service line to the premises of such user. Such flow restricting device shall be installed and maintained for a period of not less than three days nor more than ten days for a first violation, and shall be installed and maintained for not less than ten days for each succeeding violation, and may be ordered to remain installed and maintained for a period of up to three months upon a finding by the director that any user is habitually in violation of any of the provisions of this chapter, or the provisions of any exception granted pursuant to Section 12.34.030.

(b) Prior to installation of any such flow restricting device, the director shall give written notice of intent to install such device, including the reasons for the proposed installation. The notice shall specify the date, time and place at which the user or other interested party may appear before the director to present any evidence or reasons why such installation should not occur. Instead of appearing, the user or other interested party may present written material to the director at or before the time specified. The installation of a flow restricting device shall not occur less than twenty-four hours after the time specified in the notice. The written notice shall be delivered personally, or by posting with the United States mail service, first class postage prepaid, certified mail, and addressed to the last known address of the user to whom given. Copies of the notice shall also be delivered personally or by mail as specified above, to the owner of the property on which the flow restrictor is proposed to be installed as shown on the last equalized assessment roll of the county assessor, county of Santa Clara, and to the person or entity shown on the latest city records as being responsible for payment of utility charges on such property, if either or both is different from the user to whom the notice is sent.

(c) There are hereby established, and there shall be imposed and levied charges in the amount of fifty dollars for each installation and fifty dollars for each removal of flow restricting devices under this section. (Ord. 2433-93 § 1 (part)).

#### **12.34.050. Implementation.**

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The director of public works is authorized to delegate authority granted under this chapter to such deputies, officers, employees or agents of the city as the director shall designate, and to establish such rules, regulations and procedures, and to prepare or furnish such forms as the director deems necessary or appropriate to carry out the provisions of this chapter. (Ord. 2433-93 § 1 (part)).

#### **12.34.060. Notices.**

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Except as otherwise provided, notices required to be given pursuant to the provisions of this chapter shall be in writing, may be combined with water service bills or other written communication, and shall be delivered personally, or by posting with the United States mail service, first class postage prepaid, and addressed to the last known address of the user to whom given, or to the owner of the premises to which the water service of such user pertains, shown on the last equalized assessment roll of the county assessor, county of Santa Clara. (Ord. 2433-93 § 1 (part)).

#### **12.34.070. Violations.**

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It is unlawful for any person, firm, partnership, association, corporation or political entity to use water obtained from the water system of the city of Sunnyvale in violation of any provision of this chapter or in violation of the conditions of any exception granted pursuant to Section 12.34.040 of this chapter. Use of water by any user in accordance with the provisions of any exception granted by the director shall not be deemed in violation of this chapter. Violations of this chapter shall be punishable as infractions. (Ord. 2433-93 § 1 (part)).

**12.34.080. Remedies cumulative.**

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The remedies and penalties provided for in this chapter shall be cumulative and not exclusive, and shall be in addition to any or all other remedies available to the city. (Ord. 2433-93 § 1 (part)).

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**12.34.010. Purpose and application.**

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The purpose of this chapter is to identify and restrict nonessential water uses which, if allowed, would constitute wastage of the water supply of the city. The provisions of this chapter shall apply to all persons or entities using water obtained from the city of Sunnyvale both in and outside the city of Sunnyvale and within the city's water service area, and regardless of whether any person or entity using water has a contract for water service with the city. Use of water by the city itself shall be in conformance with a water conservation plan to be presented by the city manager to the city council for approval, and which shall essentially conform to the provisions of this chapter. This chapter is adopted pursuant to the provisions of Water Code Section 350, et seq., the city charter and the common law. (Ord. 2433-93 § 1 (part)).

**12.34.020. Nonessential uses prohibited.**

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The following uses, methods, types or techniques of uses of water are hereby determined and declared nonessential, and except as expressly provided to the contrary, are hereby prohibited:

(a) Allowing or maintaining broken or defective plumbing, sprinklers, watering or irrigation systems which permit the escape or leakage of potable water.

(b) Using potable water in any manner which causes, allows or permits the flooding of any premises, or any portion thereof, or which causes, allows or permits water to escape from any premises or any portion thereof and flow into gutters, streets, or any surface water drainage system.

(c) Using any hose or similar device using potable water for washing automobiles, trucks, buses, boats, trailers, equipment, recreational vehicles, mobilehomes or other vehicles or machinery, unless the hose or device is equipped with a positive automatic shutoff valve.

(d) Using potable water to wash sidewalks, driveways, filling station aprons, patios, parking lots, porches or other paved or hard surfaced areas, unless there is a positive automatic shutoff valve on the outlet end of the hose.

(e) The service of water by any restaurant or other eating or refreshment establishment to any patron, except upon the specific request by a patron for such services.

(f) Installation of any single pass cooling process in new construction.

(g) Any use of nonpotable water not in compliance with all federal, state and local laws, rules and regulations. Use of reclaimed water from the city's water pollution control plant shall be subject to the discretion of the director of public works. (Ord. 2433-93 § 1 (part)).

**12.34.030. Exceptions.**

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(a) The director of public works is hereby authorized to grant to any user an exception to the prohibitions set forth in Section 12.34.020, upon a finding by the director that such exception is necessary to prevent an emergency condition affecting the health, sanitation or fire protection of such user, and that the user to whom such adjustment or exception pertains has adopted or used all practicable water conservation measures.

(b) Exceptions permitted hereunder shall be made only upon written application submitted to the director setting forth a statement of justification for such exception. The director may attach conditions, specifications or other qualifying provisions to any exception granted. (Ord. 2433-93 § 1 (part)).

**12.34.040. Penalty—Flow restricting devices.**

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(a) Upon a determination by the director of public works that a user has continuously or repeatedly violated or failed to comply with one or more provisions of Section 12.34.020, or of any conditions of any exception granted pursuant to the provisions of Section 12.34.030, the director may issue an order to cease and desist from continued or repeated violation, and further order such user to comply forthwith with such provisions or terms of exception, or otherwise to take appropriate remedial or preventive action. If after the issuance of such cease and desist order, such user continues to consume or use, or again consumes or uses water in violation of any such provision or condition of exception, the director may order the installation of a flow restricting device upon the water service line to the premises of such user. Such flow restricting device shall be installed and maintained for a period of not less than three days nor more than ten days for a first violation, and shall be installed and maintained for not less than ten days for each succeeding violation, and may be ordered to remain installed and maintained for a period of up to three months upon a finding by the director that any user is habitually in violation of any of the provisions of this chapter, or the provisions of any exception granted pursuant to Section 12.34.030.

(b) Prior to installation of any such flow restricting device, the director shall give written notice of intent to install such device, including the reasons for the proposed installation. The notice shall specify the date, time and place at which the user or other interested party may appear before the director to present any evidence or reasons why such installation should not occur. Instead of appearing, the user or other interested party may present written material to the director at or before the time specified. The installation of a flow restricting device shall not occur less than twenty-four hours after the time specified in the notice. The written notice shall be delivered personally, or by posting with the United States mail service, first class postage prepaid, certified mail, and addressed to the last known address of the user to whom given. Copies of the notice shall also be delivered personally or by mail as specified above, to the owner of the property on which the flow restrictor is proposed to be installed as shown on the last equalized assessment roll of the county assessor, county of Santa Clara, and to the person or entity shown on the latest city records as being responsible for payment of utility charges on such property, if either or both is different from the user to whom the notice is sent.

(c) There are hereby established, and there shall be imposed and levied charges in the amount of fifty dollars for each installation and fifty dollars for each removal of flow restricting devices under this section. (Ord. 2433-93 § 1 (part)).

#### **12.34.050. Implementation.**

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The director of public works is authorized to delegate authority granted under this chapter to such deputies, officers, employees or agents of the city as the director shall designate, and to establish such rules, regulations and procedures, and to prepare or furnish such forms as the director deems necessary or appropriate to carry out the provisions of this chapter. (Ord. 2433-93 § 1 (part)).

#### **12.34.060. Notices.**

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Except as otherwise provided, notices required to be given pursuant to the provisions of this chapter shall be in writing, may be combined with water service bills or other written communication, and shall be delivered personally, or by posting with the United States mail service, first class postage prepaid, and addressed to the last known address of the user to whom given, or to the owner of the premises to which the water service of such user pertains, shown on the last equalized assessment roll of the county assessor, county of Santa Clara. (Ord. 2433-93 § 1 (part)).

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---

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**12.34.080. Remedies cumulative.**

---

The remedies and penalties provided for in this chapter shall be cumulative and not exclusive, and shall be in addition to any or all other remedies available to the city. (Ord. 2433-93 § 1 (part)).

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**Chapter 19.37. LANDSCAPING, IRRIGATION AND USEABLE OPEN SPACE**

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**19.37.010. Purpose.**

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The purpose of this chapter is to ensure that adequate landscaped areas and useable open space are provided where applicable for all zoning districts; to promote the conservation and efficient use of water and to prevent the waste of this valuable resource; and to promote water conservation as one component of sustainable building practices. This chapter shall be construed to assure consistency with the requirements of the Water Conservation in Landscaping Act of the California Government Code, or any successor statute, and any applicable implementing regulations, as they exist at the time of enactment or as later amended. In addition to compliance with the provisions in this chapter, projects shall comply with stormwater management requirements set forth in Chapter 12.60. (Ord. 2918-10 § 3).

**19.37.020. Applicability.**

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All provisions of this chapter shall apply to the following landscaping projects:

- (a) Individual Single-Family or Duplex Residential Projects. New landscaping installations equal to or greater than one thousand square feet in connection with construction of a new dwelling unit.
- (b) All Other Projects. New landscaping installations or landscaping rehabilitation projects equal to or greater than one thousand square feet.
- (c) Exemptions. Landscaping and irrigation requirements shall not apply to:
  - (1) Projects that fall below the square footage thresholds stated in subsections (a) and (b);
  - (2) Individual single-family or duplex residential projects that are not in connection with construction of a new dwelling unit;
  - (3) Registered local, state or federal historical sites where landscaping establishes a historical landscaping style, as determined by the Heritage Preservation Commission, planning commission, or by any applicable public board or commission responsible for architectural review or historic preservation;
  - (4) Ecological restoration or mined-land reclamation projects that do not require a permanent irrigation system; or
  - (5) Community gardens, plant collections (as part of botanical gardens and arboretums open to the public), non-irrigated areas designated for non-development (e.g., open spaces and existing native vegetation), agricultural uses, commercial nurseries and sod farms. (Ord. 2918-10 § 3).

**19.37.030. Definitions.**

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The following terms and definitions pertain to the water efficiency sections of this chapter:

- (a) "Applied water" means the portion of water supplied by the irrigation system to the landscaped area.
- (b) "Automatic irrigation controller" means an automatic timing device used to remotely control valves that operate an irrigation system. Automatic irrigation controllers schedule irrigation events using either evapotranspiration (weather-based) or soil moisture data.
- (c) "Certified professional" means a licensed landscape architect, a licensed landscape contractor, a licensed professional engineer, certified irrigation designer, or any other person authorized by the state to design a landscape or irrigation system, or a certified landscape irrigation auditor.
- (d) "Conversion factor (0.62)" means the number that converts acre-inches per acre per year to gallons per square

foot per year.

(e) “Drip irrigation” means any non-spray low volume irrigation system utilizing emission devices with a flow rate measured in gallons per hour. Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.

(f) “Estimated total water use” (ETWU) means the total water used for the landscaped area as described in Section 19.37.050.

(g) “ET adjustment factor” (ETAF) means a factor of 0.7, that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscaped area. ETAF for a special landscaped area shall not exceed 1.0.

(h) “Evapotranspiration rate” means the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specified time.

(i) “Hardscape” means any durable material (pervious and non-pervious) in a landscaped area, such as decks, patios or pedestrian walkways, and other non-irrigated elements which may include art work, benches, and bicycle parking.

(j) “Hydrozone” means a portion of the landscaped area having plants with similar water needs. A hydrozone may be irrigated or non-irrigated.

(k) “Irrigation audit” means an in depth evaluation of the performance of an irrigation system. An irrigation audit includes, but is not limited to: inspection, system tune up, system test with distribution uniformity or emission uniformity, correction of any overspray or runoff that causes overland flow, and preparation of an irrigation schedule.

(l) “Irrigation efficiency” (IE) means the 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. Required irrigation efficiency is described in Section 19.37.110.

(m) “Low water use plant” means a plant species whose water needs are compatible with local climate and soil conditions. Species classified as “very low water use” and “low water use” by WUCOLS, having a regionally adjusted plant factor of 0.0 through 0.3, shall be considered low water use plants.

(n) “Maximum applied water allowance” (MAWA) means the upper limit of annual applied water for the established landscaped area as specified in Section 19.37.050.

(o) “Mulch” means any organic material such as leaves, bark, straw, compost, or 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.

(p) “Native plant” means a plant indigenous to a specific area of consideration. For the purposes of these guidelines, the term shall refer to plants indigenous to the coastal ranges of central and northern California, and more specifically to such plants that are suited to the ecology of the present or historic natural community(ies) of the project’s vicinity.

(q) “No water using plant” means a plant species with water needs that are compatible with local climate and soil conditions such that regular supplemental irrigation is not required to sustain the plant after it has become established.

(r) “Plant factor” or “plant water use factor” is a factor, when multiplied by ETo (reference evapotranspiration), estimates the amount of water needed by plants. For purpose of calculation of the ETWU, use values from WUCOLS, or equivalent reference subject to approval by the director of community development.

(s) “Precipitation rate” means the rate of application of water measured in inches per hour.

(t) “Recreational area” means areas dedicated to active play such as parks, sports fields, and golf courses where turf provides a playing surface.

(u) “Reference evapotranspiration” or “ETo” means a standard measurement of environmental parameters which affect the water use of plants. For purposes of calculation of the MAWA and ETWU, as described in Section 19.37.050, use current reference evapotranspiration data, such as from the California Irrigation Management Information System (CIMIS), or other equivalent data, or soil moisture sensor data.

(v) “Runoff” means water which is not absorbed by the soil or landscaping to which it is applied and flows from the landscaped area.

(w) “Soil moisture sensing device” or “soil moisture sensor” means a device that measures the amount of water in the soil. The device may also suspend or initiate an irrigation event.

(x) “Special landscaped area” (SLA) means an area of the landscaping 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.

(y) “Turf” means a ground cover surface of mowed grass.

(z) “Water feature” means 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).

(aa) “WUCOLS” means 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. 2918-10 § 3).

#### **19.37.040. Minimum landscaped area and useable open space.**

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(a) **Minimum Landscaped Area.** Table 19.37.040 describes the minimum landscaped area and useable open space required by zoning district. In addition to the minimum landscaped area, areas not used for buildings, parking lot areas, driveways or pedestrian walkways shall be landscaped unless the review authority determines that landscaping is not necessary to achieve the purposes of this chapter. For requirements specific to single family uses, see subsection (f).

(b) **Landscaped Buffer Required.** A landscaped buffer is required for any property with a nonresidential use in a residential zoning district that abuts a residential use. It is also required for properties of any use in a nonresidential zoning district which abuts a residential zoning district. See Section 19.37.080 for buffer landscaping design requirements.

(c) **Landscaped Frontage Strip Required.** A fifteen-foot wide landscaped frontage strip is required for all properties except those noted below in subsection (f). The frontage strip is measured from the inside edge of the public sidewalk, or if no sidewalk exists, from the curb. See Section 19.37.090 for frontage strip landscaping design requirements.

(d) **Useable Open Space Required.** Useable open space is required for all duplex and multifamily residential properties as described in Table 19.37.040. Useable open space areas that meet the definition of landscaping may contribute towards the minimum landscaped area of the site. See Section 19.37.100 for useable open space design requirements.

(e) **Specific Plan, Precise Plan and Other Specialized Plan Areas.** Minimum landscaped area and useable open space for properties within a specialized plan’s prescribed area are described in their individual plans.

(f) **Allowances and Limitations for Single-Family Uses and Single-Family Zoning Districts.**

(1) **Allowances for Single-Family Zoning Districts.** Yards are not required to be landscaped in single-family zoning districts; however other provisions in Title 19 may apply.

(2) **Limitation on Paved Areas in the R-0 and R-1 Zoning Districts.** Not more than fifty percent of the required front yard of any lot within an R-0 or R-1 zoning district shall be paved with asphalt, concrete cement, or any other impervious surface, except as may be required to meet off-street parking and access requirements of Chapter 19.46.

(3) **Landscaped Frontage Strip for Single-Family Uses.** A landscaped frontage strip is not required in any zoning district for single-family residential uses which have a frontage on a public street.

**Table 19.37.040****Minimum Landscaped Area and Useable Open Space by Zoning District**

<b>Zoning District</b>	<b>Useable Open Space</b>	<b>Other Landscaped Area</b>	<b>Parking Lot Landscaped Area</b>	<b>Total Landscaped Area</b>
R-0	N/A	N/A	N/A	N/A
R-1	N/A	N/A	N/A	N/A
R-1.5	N/A	N/A	N/A	N/A
R-1.7/PD	N/A	N/A	N/A	N/A
R-2	500 sq. ft./unit <sup>1</sup>	850 sq. ft./ unit	20% of the parking lot area	Total minimum landscaped area is the combination of the minimum parking lot landscaped area and other landscaped area. In no case shall this total be less than 20% of the lot area.
R-3	400 sq. ft./unit	425 sq. ft./unit		
R-4	380 sq. ft./unit	375 sq. ft./unit		
R-5	380 sq. ft./unit	375 sq. ft./ unit		
C-1	N/A	12.5% of floor area		
C-2	N/A	12.5% of floor area		
C-3	N/A	12.5% of floor area		
C-4	N/A	12.5% of floor area		
O	N/A	10% of lot area		
P-F	N/A	10% of lot area		
M-S	N/A	10% of floor area		
M-3	N/A	10% of floor area		

<sup>1</sup> One thousand square feet of useable open space is required for a property with an accessory living unit. (Ord. 2918-10 § 3).

**19.37.050. Water efficiency design requirements.**

Water Efficiency in Design. Landscaped areas shall be designed to achieve water efficiency. Landscaping design and plant selection may be based on one of two options. Regardless of which option is selected, all other criteria described in this chapter shall apply. The options include:

(a) Option 1—Turf Limitation and Minimum Area with Water Conserving Plants. Turf area shall not be more than twenty-five percent of the landscaped area, and native, low water use or no water use plants shall be installed in at least eighty percent of all non-turf landscaped areas.

(b) Option 2—Water Budget Calculations. If the turf limitation option is not selected, a water budget calculation shall be prepared and shall adhere to the following requirements:

(1) The plant factor shall be obtained from WUCOLS or an equivalent reference subject to approval by the director of community development. For areas that mix plants with different water uses, the plant factor calculation is based on the proportion of the respective plant factors, or based on the plant factor of the higher water using plant. The plant factor ranges from 0.0 to 0.3 for low water use plants, from 0.4 to 0.6 for moderate water use plants, and from 0.7 to 1.0 for high water use plants.

(2) All water features shall be included in the high water use hydrozone.

(3) All special landscaped areas (SLA) shall be identified and their water use included in the water budget

calculations.

(4) The reference evapotranspiration adjustment factor (ETAF) for SLAs shall not exceed 1.0. The ETAF for all other landscaped areas shall not exceed 0.7.

(5) Maximum applied water allowance (MAWA) shall be calculated using the following equation:

$$MAWA = (ETo) (0.62) [(0.7 \times LA) + (0.3 \times SLA)]$$

Where:

MAWA = Maximum applied water allowance (gallons per year)

ETo = Reference evapotranspiration (inches per year)

0.62 = Conversion factor (to gallons)

0.7 = Reference evapotranspiration adjustment factor (ETAF)

LA = Planted landscaped area including SLA and not including hardscapes (square feet)

0.3 = Additional water allowance for SLA

SLA = Special landscaped area (square feet)

(6) Estimated total water use (ETWU) will be calculated using the equation below. The sum of the ETWU calculated for all hydrozones shall not exceed the MAWA.

$$ETWU = (ETo)(0.62) \left( \frac{PF \times HA}{IE} + SLA \right)$$

Where:

ETWU = Estimated total water use per year (gallons)

ETo = Reference evapotranspiration (inches)

PF = Plant factor from WUCOLS

HA = Hydrozone area [high, medium, and low water use areas] (square feet)

SLA = Special landscaped area (square feet)

0.62 = Conversion factor

IE = Irrigation efficiency (minimum 0.70)

(Ord. 2918-10 § 3).

### **19.37.060. General planting, soil management and water feature design requirements.**

(a) Plant Material. In addition to the requirements below, plant selection and installation shall be done in accordance with accepted horticultural industry practices.

(1) Variety. Landscaping shall include trees, shrubs, vines, flowers, ground covers or a combination thereof.

(2) Size at Time of Planting. Plant materials shall be sized and spaced to achieve immediate effect, in accordance with horticultural industry practices and at the discretion of the director of community development. Trees shall be of minimum fifteen gallon size. Twenty-four or thirty-six inch box trees may be required at the discretion of the director of community development.

(3) Number of Trees. There shall be one tree per one thousand square feet of required landscaped area in addition to required street trees and parking lot trees.

(4) Turf. All turf areas shall be planted with tall fescue or similar turf requiring less water. Turf shall not be planted on slopes greater than ten percent where the toe of the slope is adjacent to an impermeable hardscape.

(b) Grouping of Plants. Plants with similar water needs shall be grouped (also described as a hydrozone). Areas that mix plants with different water uses may be allowed if a water budget is performed.

(c) Soil Management.

(1) Mulch. A minimum two-inch layer of mulch shall be applied on all non-turf soil areas.

(2) Soil Amendments. Soil amendments, such as compost, shall be incorporated according to the soil conditions at the project site and based on what is appropriate for selected plans.

(3) Grading. If the project includes grading, the grading shall be designed to minimize soil erosion, runoff and water waste. The grading shall avoid soil compaction in planted landscaped areas.

(d) Water Features. Recirculating water systems shall be used for water features. Where available, recycled water shall be used for water features. (Ord. 2918-10 § 3).

#### **19.37.070. Parking lot landscaping design requirements.**

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(a) Parking Lot Shading. Trees shall be planted and maintained throughout the lot to ensure that at least fifty percent of the parking area will be shaded within fifteen years after the establishment of the lot.

(1) Solar Energy Systems as Shading. Up to twenty-five percent of the fifty percent parking lot shading requirement (twelve and one-half percent of the total parking lot area) may be met with installation of solar energy systems rather than trees.

(2) Calculation of Shading. Shading shall be calculated by using the diameter of the tree crown at fifteen years or the dimensions of any roofed area supporting the solar energy system within the parking lot area.

(3) Surfaces Subject to Shading Calculation. All surfacing on which a vehicle can drive is subject to shade calculation, including all parking stalls, vehicular drives within the property regardless of length, drive-through lanes, and all maneuvering areas regardless of depth. The following surface areas are exempt from shading requirements: truck loading areas in front of overhead doors, truck maneuvering and parking areas unconnected to and exclusive of any vehicle parking, surfaced areas not to be used for vehicle parking, driving or maneuvering, provided they are made inaccessible to vehicles by a barrier such as bollards or fencing, display, sales, service, or vehicular storage areas for automobile dealerships (required parking for auto dealerships is still subject to shading requirements), or surfaced areas existing prior to January 1, 2002.

(b) Ground Cover and Shrubs on Parking Islands. Parking islands shall contain living ground cover or shrubs with the trees, unless it can be shown that ground cover is incompatible with the tree. Where living ground cover is unsuitable, the director of community development may allow porous, nonliving ground cover such as pebbles or tanbark.

(c) Drainage Design. Landscaping islands and parking islands shall be designed to integrate parking lot and site drainage in order to reduce storm water runoff velocities and minimize non-point source pollution. When six-inch concrete curbs are installed, they shall have drainage "weep holes."

(d) Wheel Stops. Concrete wheel stops shall be installed when landscaped areas are not adequately protected. (Ord. 2918-10 § 3).

#### **19.37.080. Buffer landscaping design requirements.**

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The following is a list of design requirements for buffer landscaping.

(a) Width. The buffer shall maintain a width of at least ten feet.

(b) Landscaping. The buffer shall include a planted screen of approved trees and shrubs which shall be placed along the length of the buffer at intervals not to exceed twenty feet, provided, however, that the director of community development may grant exceptions through a miscellaneous plan permit when warranted by conditions on the property.

(c) Wall Design. The buffer shall include a decorative masonry wall six feet in height measured from the highest

adjoining grade. When the adjacent nonresidential building is two stories or more in height, the decorative masonry wall shall be eight feet measured from the highest adjoining grade. Where a residential use is permitted in a nonresidential zoning district, the wall shall be required on the residential property, unless a wall already exists.

(d) Specific Plan, Precise Plan and other specialized plan areas. Properties within a specialized plan's prescribed area may be subject to additional buffer landscaping design requirements, as described in their individual plans. (Ord. 2918-10 § 3).

#### **19.37.090. Frontage strip landscaping design requirements.**

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(a) Width. The frontage strip shall be fifteen feet wide along the entire street frontage measured from the inside edge of the public sidewalk, or if no sidewalk exists, from the curb.

(b) Landscaping Allowances. Frontage strip landscaping may be crossed by walkways and access drives.

(c) Specific Plan, Precise Plan and Other Specialized Plan Areas. Properties within a specialized plan's prescribed area may vary from these frontage strip design requirements, as described in their individual plans. (Ord. 2918-10 § 3).

#### **19.37.100. Useable open space design requirements.**

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(a) Function. Useable open space must be designed to be accessible to, and useable for outdoor living, recreation or utility use.

(b) Location. Useable open space may not be located in any required front yard area.

(c) Minimum Useable Open Space Dimensions and Area. Each useable open space area shall have at least a twelve foot dimension in any direction and a minimum area of two hundred square feet except for:

(1) Private balconies must have a minimum of seven feet in any direction and a minimum area of eighty square feet.

(2) Roofs, decks or porches must have a minimum of ten feet in any direction and a total of one hundred twenty square feet.

(d) Private Useable Open Space Required. In the R-4 and R-5 zoning districts, a minimum of eighty square feet per unit shall be designed as private useable open space.

(e) Specific Plan, Precise Plan and Other Specialized Plan Areas. Properties within a specialized plan's prescribed area may vary from these useable open space design requirements, as described in their individual plans. (Ord. 2918-10 § 3).

#### **19.37.110. Irrigation system design requirements.**

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(a) Irrigation System Required. All landscaped areas shall have a permanent irrigation system, except for single-family detached and duplex dwellings.

(b) Irrigation Efficiency. Irrigation systems shall be designed and maintained to meet or exceed an average landscaping irrigation efficiency of seventy percent.

(c) Water Waste Prohibited. Water waste resulting from an inefficient irrigation system leading to runoff, low head drainage, overspray, or other similar conditions where water flows onto adjacent property, non-irrigated areas such as walkways, roadways or structures is prohibited.

(d) Hydrozone Irrigation. Systems shall be designed to meet the individual needs of each plant group. Valves and control circuits shall be separated based on the required rate and quantity of water used.

(1) Valves. Each valve shall irrigate a hydrozone with similar site, slope, sun exposure, soil conditions and plant materials with similar water use. Where feasible, trees shall be placed on separate valves from shrubs, groundcovers, and turf.

(2) Sprinkler Heads. Sprinkler heads and other emission devices shall be selected based on what is appropriate for the plant type within that hydrozone. Sprinkler heads must have matched precipitation rates within each circuit.

(e) Low Volume Irrigation. Bubbler or drip-type irrigation, or other low-flow, non-spray technology shall be provided for:

(1) Trees and shrubs.

(2) Mulched areas.

(3) Areas with slope greater than ten percent, unless it can be demonstrated that no runoff or erosion will occur if other types of irrigation is used.

(4) Areas that are less than eight feet wide in any direction.

(f) Overhead Sprinkler Irrigation. Overhead irrigation systems may be used for clustered shrub plantings. Areas within two feet of a non-permeable surface may not be irrigated using overhead sprinkler irrigation unless it can be demonstrated that no runoff would occur, or the adjacent non-permeable surface is designed and constructed to drain entirely to landscaping.

(g) Irrigation Controllers and Sensors. All irrigation controllers must utilize either evapotranspiration or soil moisture sensor data and be capable of dual or multiple programming. Irrigation systems shall also incorporate sensors (rain, freeze, wind, etc.) that suspend or alter irrigation operation during unfavorable weather conditions.

(h) Screening of Devices. Irrigation controllers and backflow devices shall be screened from public view.

(i) Scheduling. Irrigation must be scheduled between eight p.m. and ten a.m. (Ord. 2918-10 § 3).

#### **19.37.120. Landscaping and irrigation approval.**

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(a) Permit Required. Except as otherwise provided in this chapter, no person shall install or modify any landscaped area described in Section 19.37.020 without first obtaining a miscellaneous plan permit for each such action, in accordance with the procedure described in Chapter 19.82.

(b) Landscaping and Irrigation Plans Required. Landscaping and irrigation plans shall be required for any modification or installation of new landscaping that falls within the thresholds stated in this chapter. The plans shall meet the information requirements determined by the director of community development to comply with the provisions of this chapter.

(1) Preparation by Certified Professional. Landscaping and irrigation plans shall be prepared by, and bear the signature of, a certified professional, except for new landscaping installations or landscaping rehabilitation projects with less than two thousand five hundred square feet of landscaped area. (Ord. 2918-10 § 3).

#### **19.37.130. Landscaping irrigation audit and maintenance.**

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(a) Irrigation Audit Required. Prior to approval of occupancy by a building official, a landscaping irrigation audit shall be conducted and an irrigation audit report shall be submitted for projects with landscaping and irrigation plans approved after June 10, 2010.

(1) Audit by Certified Professional. The landscaping irrigation audit shall be conducted and the report shall be prepared by a certified professional, except for new landscaping installations or landscaping rehabilitation projects with less than two thousand five hundred square feet of landscaped area.

(2) Audit Report Content. The irrigation audit report shall include, but not be limited to: inspection, system tune-up, system test with distribution uniformity, correction of any overspray or runoff that causes overland flow, and preparation of an irrigation schedule.

(b) Submittal of Landscaping Maintenance Schedule. Prior to the final inspection by the building official, a

regular maintenance schedule shall be submitted to the director of community development for review and approval. The maintenance schedule shall include, but not be limited to, routine inspection; adjustment and repair of the irrigation system and its components; aerating and dethatching turf areas; replenishing mulch; fertilizing; pruning; weeding in all landscaped areas; and removing obstructions to irrigation spray heads or other emission devices. Landscaping shall be maintained in accordance with the approved maintenance schedule.

(c) General Maintenance. Landscaping shall be maintained in compliance with the approved landscaping plan, and shall be maintained in a neat, clean and healthful condition. Removed landscaping shall be replaced with specimen plants to match the approved landscaping plan. (Ord. 2918-10 § 3).