

Central Valley Project Municipal and Industrial Water Shortage Policy – Working Draft

October 18, 2010

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Abbreviations and Acronyms

AF	acre-foot
AHU	Adjusted Historical Use
BMPs	Best Management Practices
CUWCC	California Urban Water Conservation Council
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
EA	Environmental Assessment
FONSI	Finding of No Significant Impact
Gpcd	gallons per capita demand
Gpd	gallons per day
M&I	municipal and industrial
PH&S	public health & safety level
UWMP	urban water management plan
SWRCB	State Water Resources Control Board
WMP	water management plan
WSP	Water Shortage Policy

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Chapter 1

Introduction

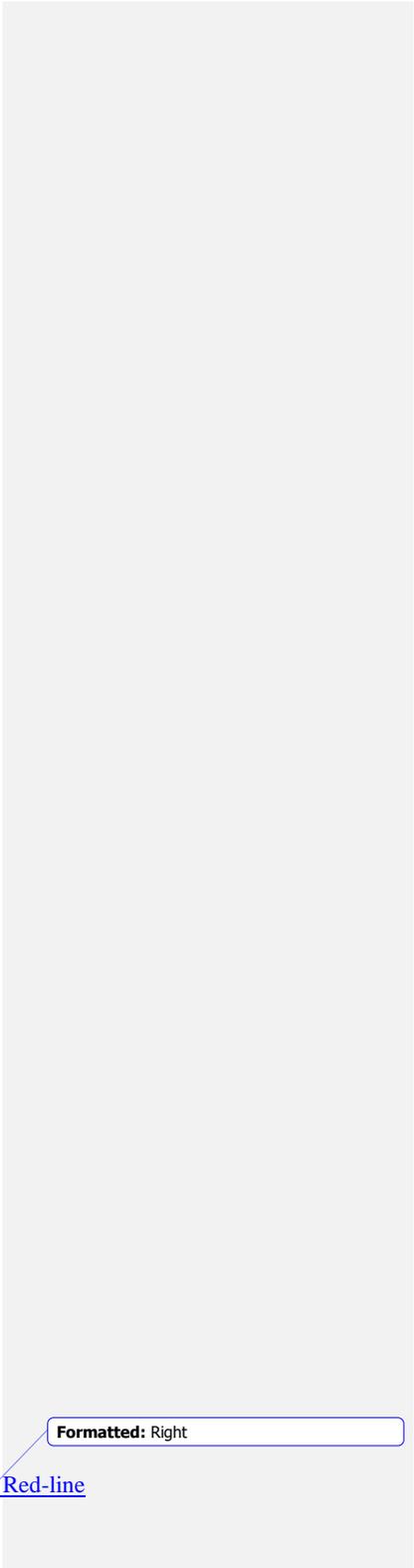
The Municipal and Industrial (M&I) Water Shortage Policy (WSP) and implementation guidelines are intended to provide detailed, clear, and objective guidelines for the distribution of Central Valley Project (CVP) water supplies during water shortage conditions, thereby allowing CVP water users to know when, and by how much, water deliveries may be reduced in drought and other low water supply conditions. This increased level of predictability is needed by water managers and the entities that receive CVP water to better plan for and manage available CVP water supplies, and to better integrate the use of CVP water with other available Non-CVP water supplies.

Allocation of CVP water supplies for any given water year is based upon forecasted reservoir inflows and Central Valley hydrologic conditions, amounts of storage in CVP reservoirs, regulatory requirements, and management of Section 3406(b)(2) resources and refuge water supplies in accordance with implementation of the Central Valley Project Improvement Act (CVPIA). In some cases, M&I water shortage allocations may differ between CVP divisions due to regional CVP water supply availability, system capacity, or other operational constraints. [Reclamation will exercise its operational discretion to deliver at least necessary water supplies for public health and safety.](#)

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Chapter 2 CVP M&I Water Shortage Policy

The proposed CVP M&I WSP is presented below. It is consistent with the draft 2001 policy with some modifications made to reflect the proposed action alternative (Alternative 1B) in the 2005 Environmental Assessment (EA) and Finding of No Significant Impact (FONSI). These modifications include:

- Replaced the reference to the 1996 M&I Water Rates book with the Water Needs Assessment prepared for Long-Term CVP Water Service Contract renewals.
- Replaced the two tables in Terms and Conditions 4 and 5 of the draft 2001 policy with Table 1-3 (Alternative 1B) from the 2005 EA.
- Removed the provision for “75 percent of M&I reliability” since the 2005 EA’s Table 3-5 alters this provision.
- The “Definitions” have been expanded to provide greater clarification of key terms.

In addition to the above, adjustments to a contractor’s historic use will be made to each of the three years of unconstrained CVP water supplies prior to averaging.

Following the M&I WSP, which is in Chapter 3, are associated guidelines to provide additional clarification on the implementation process.

2.1 Central Valley Project M&I Water Shortage Policy

The CVP is operated under Federal statutes authorizing the CVP and by the terms and conditions of water rights acquired pursuant to California law. During any year, there may occur constraints on the availability of CVP water for an M&I contractor under its contract. [Reclamation has developed this M&I WSP for allocation of M&I water to CVP M&I Contractors. The M&I WSP, however, will not apply to CVP M&I contractors in the East Side Division or Friant Division because of the unique situation in those divisions.](#)

The purposes of the M&I WSP are to:

- Define water shortage terms and conditions applicable to all CVP M&I contractors.
- Establish a water supply level that (a) with M&I contractors’ drought water conservation measures and other water supplies would sustain urban areas during droughts, and (b) during severe or continuing droughts would, as much as possible, protect public health and safety.

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- Provide information to help M&I contractors develop drought contingency plans.

Currently, many M&I contractors are not using their full M&I contract total. If the M&I water shortage allocation were applied to full contract entitlements, the resulting allocation for some contractors would exceed their current demand. M&I water demands within the CVP are continually increasing. Reclamation recognizes that as water conservation measures are implemented there is a hardening of demand that lessens an M&I contractor's ability to reduce demand during shortages.

The capability of the CVP to meet the water supply levels addressed by this M&I WSP is subject to the availability of CVP water supplies. In any given year, M&I water shortage allocations may differ between CVP divisions due to regional CVP water supply availability, system capacity, or operational constraints. Generally, the supply allocation (percentage) to the various divisions will be the same, unless specific constraints require otherwise. [Reclamation will exercise its operational discretion to deliver at least necessary water supplies for public health and safety.](#)

Reclamation explored the concept of two tiers of M&I water supply reliability as proposed by contractors in the CVPIA Administrative Proposal on Urban Water Supply Reliability. Although Reclamation determined not to adopt two tiers, it will facilitate the sale of CVP water from willing sellers to M&I contractors when necessary.

2.1.1 Definitions

Adjusted For Growth - An adjustment to the contractor's historical use quantity to account for demand increases within the contractor's service area to include (but not be limited to) increases due to population growth and to the number or demand of industrial, commercial, and other entities the contractor serves, provided the contractor provides required documentation to Reclamation.

Adjusted For Extraordinary Water Conservation Measures - An adjustment to the contractor's historical use quantity to account for conservation measures that exceed applicable best management practices (BMPs) adopted by the California Urban Water Conservation Council (CUWCC). A water conservation measure considered extraordinary in 2001 may be a mandatory BMP in a subsequent year and thus would no longer be considered extraordinary.

Adjusted For Non-CVP Water - An adjustment to the contractor's historical use quantity to account for water sources other than the CVP used to satisfy M&I demand within the contractor's service area, subject to written documentation from the contractor that shows the extent to which use of the non-CVP water actually reduced the contractor's use of CVP water in ~~other~~[historical unconstrained](#) years. ~~A~~[To obtain an adjustment for a particular historical Unconstrained Year based on use of non-CVP water, the](#) contractor must show that ~~the non-CVP water was delivered and paid for prior to identifying it used~~ the

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~~supply as "non-CVP water" for purposes of requesting additional water under the M&I WSP. Water in that particular historical Unconstrained Year.~~

Agricultural Contractor - A water contractor delivering water supplies for use in agricultural production. Some CVP agricultural water contractors also deliver M&I supplies, and to that extent are M&I Water Contractors to which this Policy applies.

Drought Contingency Plan - A plan designed to protect public health and safety provided by each contractor to Reclamation. The contractor may provide a copy of its urban water management plan (UWMP) or water management plan (WMP) to Reclamation in lieu of a separate drought contingency plan so long as the UWMP or WMP contains the contractor's drought contingency plan.

Extraordinary Water Conservation Measures - Conservation measures that exceed applicable BMPs adopted by the CUWCC, including those measures that accelerate levels of conservation expected by the CUWCC. A water conservation measure or action pursuant to a measure considered extraordinary in a given year may be a mandatory ~~BMP~~ in a subsequent year and thus would no longer be considered extraordinary.

Historical Use - The average quantity of CVP water put to beneficial use within the service area during the lastmost recent three ~~years of water deliveries that were unconstrained by the availability of CVP water~~ Unconstrained Years (not necessarily sequential). Reclamation and the contractor may negotiate the calculated historical use, to be outlined in a contract exhibit that can be modified during the contract period (but that will not require formal contract amendment). ~~Reclamation recognizes that certain circumstances may require adjustment of the historical use for population growth, extraordinary water conservation measures, or use of non-CVP water supplies. Also, Reclamation may agree to adjust the historical use on the basis of unique circumstances, after consultation with the contractor. An example of a unique circumstance is the year following a drought year, in which a contractor may still be using extraordinary water conservation measures, or the converse, in which a contractor may be using more water than historically used in order to recharge groundwater.~~

Irrigation Water Contractor - See "Agricultural Contractor"

M&I Water Contractor - A water contractor delivering (or subcontractor identified in a CVP contract) that delivers water supplies to water users or retailers serving residential, non-agricultural commercial, industrial, and municipal water users or is such a user itself. Some CVP M&I water contractors also deliver agricultural supplies.

Non-CVP Water - Water sources other than the CVP used to satisfy M&I demand within the contractor's service area, subject to written documentation from the contractor that shows the extent to which use of the non-CVP water actually reduced the contractor's use of CVP water ~~in other years.~~ Example

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sources include, but [are](#) not limited to, local surface water supplies; water rights water; groundwater; transfer water; CVP water previously banked or carried-over in a groundwater or surface water storage facility, including "215 water"; and recycled water subject to Reclamation's approval.

Public Health and Safety Levels ~~During Water Shortage Conditions, Reclamation will strive to deliver CVP water to M&I contractors at not less than a public health and safety water supply level, provided that sufficient CVP water is available, if (a) the Governor declares an emergency due to water shortage applicable to the contractor's levels of demand that contractor, or (b) Reclamation, result from applying Equation 5 in consultation with the contractor, determines that an emergency exists due to water shortage. At that time, the public health and safety level would be determined by the contractor and reviewed by Reclamation. the implementation procedure in Chapter 3~~

Shortage Allocation - Refers to the allocation of CVP water during Water Shortage Conditions, pursuant to the water allocation amounts prescribed in the CVP M&I WSP. The allocation of water is based on available CVP supplies.

Unconstrained Year – A year in which the M&I water supply allocation is 100 percent. ~~Reclamation will adjust the identification of Unconstrained Year on the basis of unique circumstances that may have affected water use in such a year, after consultation with the contractor. Examples of unique circumstances are: the year following a drought year, in which a contractor may still be using extraordinary water conservation measures; the converse, in which a contractor may be using more water than historically used in order to recharge groundwater; or a year in which a contractor, due to a preliminary shortage allocation by Reclamation or locally dry conditions, declares a water shortage in its service area prior to Reclamation's declaration of a 100% allocation.~~

Urban Water Management Plan - The 1985 California Urban Water Management Planning Act required M&I users with more than 3,000 connections or use of more than 3,000 AF per year to prepare an UWMP. The UWMP must include existing and projected water supplies and demands, water supply allocations, comparison of supplies and demands, water demand management program (conservation), wastewater recycling, and water shortage contingency plans.

Water Management Plan - As described in CVPIA, WMPs completed under the 1982 Reclamation Reform Act include the implementation of all cost-effective BMPs that are economical and appropriate, including measurement devices, pricing structures, demand management, public information, and financial incentives.

Water Shortage Conditions - Periods when the available CVP water supplies are insufficient to meet the water demands of the CVP contractors, pursuant to the terms and conditions of the CVP water service contracts, water rights settlement contracts, and CVPIA. Reclamation can determine a Water Shortage Condition

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exists based on various factors, including low water supply conditions during drought periods or severe hydrological conditions, CVP system operational constraints associated with legal decisions, regulatory requirements, and hydrologic reductions. The Water Shortage Condition may also be regional and not necessarily CVP-wide. For example, limitations on the CVP ability to convey water across the Delta in accordance with State Water Resources Control Board (SWRCB) orders and decisions can result in Water Shortage Conditions for CVP water contractors located south of the Delta as compared to CVP water users located north of the Delta.

2.1.2 Terms and Conditions

1. In times of water shortage, allocation of M&I water will be based on a contractor's historical use of CVP M&I water, adjusted for (a) *growth*, (b) *extraordinary water conservation measures*, and (c) use of non-CVP water, subject to Term and Condition 3. At the contractor's request, Reclamation will consult with the contractor to adjust the contractor's historical use in each Unconstrained Year on the basis of (a) growth, (b) extraordinary water conservation measures, and (c) use of non-CVP water. Term and Condition 1 is intended to encourage contractors to use non-CVP water first and rely on CVP water as a supplemental supply. Reclamation will adjust the historical-use calculation to reflect the effect of ~~non~~Non-CVP ~~water~~Water used in lieu of use of the contractor's CVP water. Crediting for use of this nonNon-CVP ~~water~~Water will be based on 1 acre-foot (AF) for 1 AF, unless Reclamation and the contractor agree otherwise in considering unique circumstances. The contractor must fully document use of non-CVP water to clearly show how much that water use actually reduced the contractor's use of CVP water in ~~other years~~each historical Unconstrained Year, and submit the documentation in writing to Reclamation.
2. For an M&I contractor to be eligible for adjustments to their CVP water supply, the ~~contractor's water service contract must reference M&I water shortage policy. In addition, the~~ water service contractor must (a) have developed and be implementing a water conservation plan that meets CVPIA criteria, (b) be measuring such water consistent with section 3405(b) of the CVPIA, and (c) have and be implementing a drought contingency plan designed to protect public health and safety, ~~and (d) demonstrate a "need" for additional water.~~ Reclamation intends to incorporate in all new, renewed, and amended water service contracts, a provision that references the CVP M&I water shortage policy.
3. This M&I water shortage policy applies only to that portion of the CVP water identified for M&I uses under the Water Needs Assessments prepared for the CVP Long-Term Water Service Contract Renewals. Subject to these limitations, except as provided for public health and safety levels (Term and Condition 7), irrigation water transferred or converted to M&I use after September 30, 1994, will be subject to shortage allocation as irrigation water. For CVP water transferred or assigned, a CVP contractor may request that the CVP water so obtained be eligible for M&I reliability. Before Reclamation may approve such a request, the transferee or

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assignee must fully mitigate any adverse impacts to agricultural water supplies. Further, for CVP water converted, an M&I contractor may request a permanent conversion from agricultural shortage criteria to M&I shortage criteria, provided there are no adverse impacts to agricultural or other M&I water supply contracts.

4. Before allocation of M&I water to a contractor will be reduced, allocation of irrigation water will be reduced below 75 percent of contract entitlement, as shown in Table 1.

~~5. When allocation of irrigation water has been reduced below 75 percent and still further water supply reductions are necessary, both the M&I and irrigation allocations will be reduced by the same percentage increment. The M&I allocation will be reduced until it reaches 75 percent of adjusted historical use, and the irrigation allocation will be reduced until it reaches 50 percent of irrigation contract entitlement. The M&I allocation will not be further reduced until the irrigation allocation is reduced to below 25 percent of contract entitlement, as shown in Table 1.~~

- ~~6.5.~~ When allocation of irrigation water is reduced below 25 percent of contract entitlement, Reclamation will reassess both the availability of CVP water supply and CVP water demand.

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Table 1. Allocation of Irrigation and M&I Water Supply Under Shortage Conditions

Irrigation Allocation (% of contract entitlement)	M&I Allocation
< 100%	100% (contract entitlement)
95%	100%
90%	100%
85%	100%
80%	100%
75%	100%
	M&I Allocation (% of historical use)
70%	<u>95%</u> ⁽¹⁾
65%	<u>90%</u> ⁽¹⁾
60%	<u>85%</u> ⁽¹⁾
55%	<u>80%</u> ⁽¹⁾
50%-25%	75% ⁽¹⁾
20%	70% ⁽¹⁾
15%	65% ⁽¹⁾
10%	60% ⁽¹⁾
5%	55% ⁽¹⁾
0%	50% ⁽¹⁾

- (1) Subject to public health and safety considerations described in Implementation Guidelines.
- (2) Nothing in this policy prevents M&I allocation from being reduced below 50% if CVP water availability is insufficient.

7.6. Reclamation will deliver CVP water to M&I contractors, including contractors with allocation of irrigation water transferred or converted to M&I use after September 30, 1994, at not less than a *public health and safety* water supply level, provided CVP water is available, if (a) the Governor declares an emergency due to water shortage applicable to that contractor or (b) Reclamation, in consultation with the contractor, determines that an emergency exists due to water shortage. The contractor will calculate the public health and safety levels using criteria developed by the State of California and submit the calculated level to Reclamation along with adequate support documentation for review. Reclamation will ensure that the calculated level is consistent with such criteria. If State criteria do not exist, the contractor will apply criteria developed by Reclamation (in consultation with the contractor) that will be consistent with relevant criteria used for similar situations by similarly situated California M&I water entities. Reclamation may ~~determine that it is necessary to~~ vary the allocation of M&I water ~~by contractor~~ determined to be necessary to meet each contractor's health and safety needs, taking into

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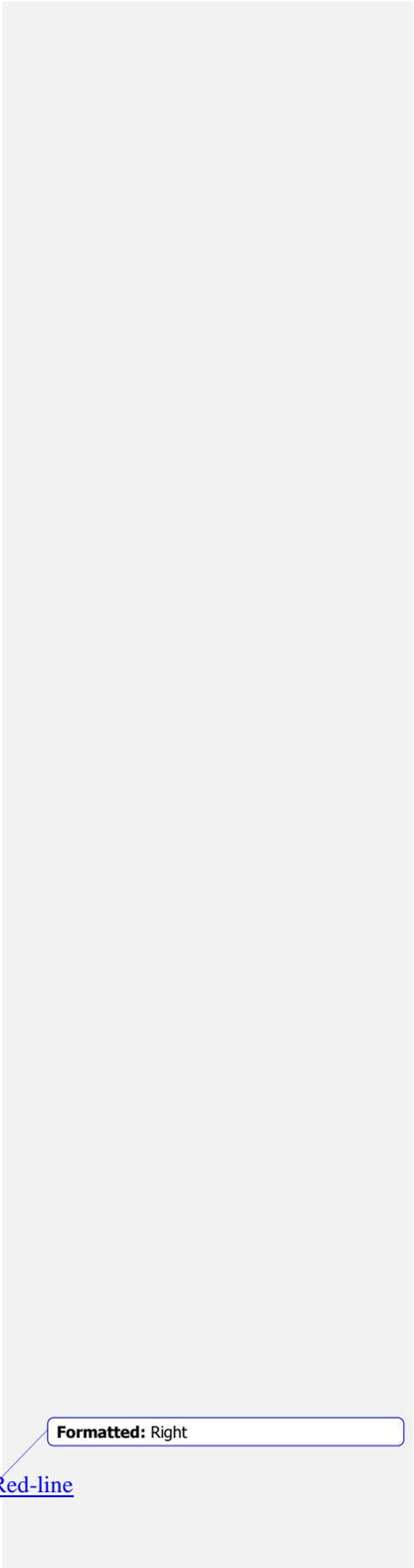
consideration a contractor's available non-CVP water supply. Non-potable water, including recycled water, shall not be considered non-CVP water supply available to meet public health and safety levels to the extent that the demands used in applying Equation 5 in Section 3.3 do not include these non-potable supplies.

8.7 Each M&I contractor will provide Reclamation its drought contingency plan designed to protect public health and safety. The contractor may provide a copy of its UWMP to Reclamation in lieu of a separate drought contingency plan so long as the UWMP contains the contractor's drought contingency plan.

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Chapter 3 Implementation Guidelines

This section outlines implementation steps for the M&I WSP and describes other factors considered and/or excluded from the M&I WSP.

3.1 Implementation Procedures - General

1. Irrigation contractor allocations are based upon contract total.
2. When M&I contractor allocations are at 100 percent, the allocation of M&I water will be based on contract entitlement.
3. When M&I contractor allocations are below 100 percent, the allocation of M&I water will be based on a contractor's historical use of CVP M&I water.
4. An M&I contractor's historical use will be determined by calculating the ~~average~~ quantity of CVP water put to beneficial use within the service area during each of the last three ~~years~~ Unconstrained Years of water deliveries ~~that were unconstrained by, and then averaging the availability of CVP water~~ three.
5. The Subject to Term and Condition 6, the general sequence of steps that Reclamation will use to determine CVP supplies for M&I contractors during Water Shortage Conditions is shown in Figure 1.

Figure 1. Steps to be Used to Determine Shortage Allocation for M&I Water Contractors

[Figure 1 not copied]

Additional adjustments to be made to Figure 1:

1. The diamond at the top of the flow chart containing the logical expression "Is A>75%" should be replaced by "Is A*B>P" to better reflect Reclamation's intent to provide CVP water at not less than public health and safety levels, provided CVP water is available pursuant to Term and Condition 7, which has been renumbered as Term and Condition 6 in this red-lined version of the Policy.
2. To avoid confusion, the box containing the equation for P ($P=D+CI=I=L$) should be deleted, and the calculation factor P described in the list of calculation factors should be defined as "Public health and safety need (AF), as defined in Equation 5."
3. The last box in the flow chart, following the calculation of "Unmet Need" should clarify that this step does not involve the same adjustments as are made for Non-CVP Water, Extraordinary Conservation Measures and Growth. The contractors therefore

recommend that the language for that box be changed to "Contractor may receive additional water, if necessary, to meet Y."

Legend to Figure 1 is:

Calculation Factors

- A = M&I contractual allocation (%)
- B = Lesser of contract amount or Historical useUse, following all adjustments (AF)
- CI = Commercial and Institutional need (AF)
- D = Domestic need (AF)
- I = Industrial need (AF)
- L = Losses (additional 10% of need)(AF)
- N = Non-CVP suppliesWater available to meet P (AF)
- P = Public health and safety need (AF as defined in Equation 5
- X = M&I annual allocation (AF)
- Y = Unmet need (AF)

3.2 Implementation Procedures - Historical Use Adjustments

1. At the contractor's request, Reclamation will consult with the contractor to adjust the contractor's historical use on the basis of:
 - a. growth;
 - b. extraordinary water conservation measures, and
 - c. use of non-CVP water.

These adjustments will be made annually for each of the three most recent unconstrained years prior to averaging.

2. Adjustment for Population Growth: If requested by an M&I contractor, an adjustment for population growth ~~may~~will be applied to an M&I contractor's ~~historical~~Historical Use after that Historical Use has been adjusted for use of Non-CVP Water, if applicable. In such a case, the ~~historical use~~Historical Use in each of the last three unconstrained years will be adjusted to reflect the population growth (i.e., difference in respective population between each unconstrained year to current population), prior to averaging.

The following equation shall be used to adjust the historical water demand in each of the three unconstrained years for population growth:

Equation 1:

$$\text{Adjusted Historical Use (AHU}_{\text{yearX}}) = \text{HU}_{\text{yearX}} \times (\text{P}_{\text{current}} / \text{P}_{\text{yearX}})$$

Where:

- AHU_{yearX} is the adjusted ~~historical~~Historical Use (including use of Non-CVP Water) in year X (one of the three unconstrained years)
- HU_{yearX} is the actual ~~historical~~Historical Use (including use of Non-CVP Water) in year X (one of the three unconstrained years)
- $P_{current}$ is the current population
- P_{yearX} is the population in historical use year under consideration

~~The following equation shall be used to average the adjusted historical use in each of the three unconstrained years (adjusted for population growth):-~~

Equation 2:

$$\text{Average Historical Use (HU}_{\text{average}}) = (AHU_{\text{yearX}} + AHU_{\text{yearY}} + AHU_{\text{yearZ}}) \div 3$$

Where:-

- HU_{average} is the average of the three adjusted historical use amounts corresponding to the three unconstrained years
- AHU_{yearX} , AHU_{yearY} and AHU_{yearZ} are adjusted historical use in year X (one of the three unconstrained years)

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An M&I contractor may develop and submit to Reclamation, for verification and approval, its own calculation of its historical use and its estimate of the adjustment for population growth.

Reclamation and the contractor may confer and enter into negotiations regarding the calculated historical use and adjustment for population growth, if needed. However, the historical use and any adjustment for population growth will be subject to Reclamation approval.

3. Adjustment for Extraordinary Water Conservation Measures: If requested by an M&I contractor, an adjustment for water conserved via extraordinary water conservation measures implemented and documented by a contractor may be applied to an M&I contractor's historical use. To be eligible for such an adjustment, the water service contractor must:
 - a. have developed and be implementing a water conservation plan that meets CVPIA criteria, and
 - b. be measuring such water consistent with section 3405(b) of the CVPIA.

This adjustment to the contractor's historical use quantity to account for conservation measures that exceed applicable best management practices or accelerate the levels of conservation expected by the BMPs adopted by

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the CUWCC must be quantifiable.

4. The following criteria shall be used to quantify and calculate an adjustment for water conserved via extraordinary water conservation measures:
 - a. A contractor requesting such an adjustment will be required to provide sufficient documentation to account for the water conserved via extraordinary water conservation measures.
 - b. The quantitative data provided by the contractor shall detail the actual quantities of water conserved by exceeding the schedule for implementation of Best Management Practices developed by the CUWCC and/or the CVPIA Criteria for Evaluating Water Management Plans."
 - c. As water demand and water supply conditions vary from one year to the next, a contractor's extraordinary water conservation will be required to be documented and calculated for each of the three unconstrained years to be considered in the historical use calculation. The calculated amount of extraordinary water conservation in any one year will only be considered in the adjustment for ~~the respective~~ that year.
 - d. The calculated annual adjustment for a contractor's extraordinary water conservation will be applied to the respective unconstrained year by adding the calculated adjustment amount (in AF) to the Adjusted Historical Use (AHU_{yearX}) following its adjustment for population growth, if applicable. Each of the three unconstrained years eligible for an adjustment for extraordinary water conservation will be adjusted individually prior to calculation of the average ~~of the adjusted historical use in each of~~ Historical Use ($HU_{average}$) for the three unconstrained years.
 - e. Adjustments for Extraordinary Water Conservation Measures will be made after the adjustments for the use of Non-CVP Water and population growth and before the averaging of adjusted use in the three Unconstrained Years:

Equation 2:

$$\text{Average Historical Use (HU}_{average}\text{)} = \frac{[(AHU_{yearX} + C_{yearX}) + (AHU_{yearY} + C_{yearY}) + (AHU_{yearZ} + C_{yearZ})]}{3}$$

Where:

- *HU_{average} is the average of the three historical use amounts, following adjustment pursuant to Term and Condition 1, corresponding to the three Unconstrained Years X, Y, and Z.*

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- *AHU_{yearX}, AHU_{yearY} and AHU_{yearZ} are adjusted historical use, adjusted for use of Non-CVP Water and population growth, in Unconstrained Years X, Y, and Z, respectively.*
- *C_{yearX}, C_{yearY}, and C_{yearZ} are the yields of Extraordinary Water Conservation Measures in years X, Y and Z, respectively.*

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~~5-5.~~ Adjustment for “Non-CVP Water” Supplies: If requested by an M&I contractor, an adjustment for use of non-CVP water may be applied to an M&I contractor’s historical use. Reclamation will adjust the historical use calculation to reflect the effect of non-CVP water used in lieu of use of the contractor’s CVP water. Crediting for this non-CVP water will be based on 1 AF for 1 AF, unless Reclamation and the contractor agree otherwise in considering unique circumstances. The contractor must fully document use of non-CVP water to clearly show how much that water use actually reduced the contractor’s use of CVP water in ~~other years~~each historical Unconstrained Year, and submit the documentation in writing to Reclamation. A list of ~~non~~Non-CVP water supplies that may be considered in this adjustment and is provided below. –

The amount of an M&I water contractor’s ~~available non-CVP Supply~~Non-CVP Water supply used in a historic Unconstrained Year will differ from contractor to contractor and will therefore have to be determined on an individual basis. Reclamation will use information provided by the contractor, other available information, and the following equation to calculate an M&I water contractor’s total ~~available~~adjustment for non-CVP water supply ~~in each historic Unconstrained Year.~~

Equation 3:

$$N \text{ (AF)} = N_1 + N_2 + N_3 \dots N_n$$

~~Where types of non-CVP supplies (N_x) may include:~~

- ~~Surface water (non-CVP supplies)~~
- ~~Groundwater~~
- ~~Local storage~~
- ~~Recycled water, subject to Reclamation approval~~
- ~~Other Reclamation Approved are the quantities from sources of the contractor’s Non-CVP Supplies~~

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Note: Units (N) are in AF of available annual water supply yield.

~~6.5.~~

The calculated annual adjustment for a contractor's use of non-CVP water in lieu of use of the contractor's CVP water will be applied to the respective unconstrained year by adding the calculated adjustment amount (in AF) to the ~~Adjusted~~ Historical Use (~~AHU_{yearX}~~) ~~following before~~ its adjustment for population growth, if applicable. Each of the three ~~unconstrained years~~ Unconstrained Years eligible for an adjustment for use of non-CVP water in lieu of use of the contractor's CVP water will be adjusted individually prior to calculation of the average ~~of the adjusted historical use in each of~~ for the three unconstrained years. ~~(Average Historical Use) in Equation 2.~~

~~Reclamation may also adjust the historical use on the basis of unique circumstances after consultation with the contractor. An example of a unique circumstance is the year following a drought year in which water users implemented extraordinary water conservation measures, or the converse, in which a contractor may use more water than historically used in order to recharge groundwater.~~

~~7.6.~~ Before allocation of M&I water to a contractor will be reduced, allocation of Irrigation water will be reduced below 75 percent of Irrigation contract entitlement. When the allocation of Irrigation water is less than 100 percent but greater than or equal to 75 percent, the allocation of M&I water will be based on 100% contract entitlement, as shown in Table 2.

Table 2: Allocation of M&I Water When Allocations of Irrigation Water are Above 75 Percent

Irrigation Allocation (% of contract entitlement)	M&I Allocation (% of contract entitlement)
< 100%	100%
95%	100%
90%	100%
85%	100%
80%	100%
75%	100%

~~8.7.~~ When allocation of Irrigation water has been reduced below 75 percent and still further water supply reductions are necessary, both the M&I and Irrigation allocations will be reduced by the same percentage (5%) increment. The allocation of M&I water will be based on ~~historical use~~ Historical Use as adjusted pursuant to Term and Condition 1 and the

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Implementation Procedures – Historical Use Adjustments. The M&I allocation will be reduced until it reaches 75 percent of ~~adjusted~~ historical use, as adjusted pursuant to Term and Condition 1 and the Implementation Procedures – Historical Use Adjustments, and the Irrigation allocation will be reduced until it reaches 50 percent of contract entitlement. The M&I allocation will not be further reduced until the Irrigation allocation is reduced to below 25 percent of contract entitlement, as shown in Table 3.

Table 3: Allocation of M&I Water When Allocation of Irrigation Water are Less Than 75 Percent and Greater 25 Percent

Irrigation Allocation (% of contract entitlement)	M&I Allocation (% of historical use)
70%	95%
65%	90%
60%	85%
55%	80%
50%-25%	75%

9.8. When M&I water allocations are less than 100 percent, the M&I allocation amount will be calculated using the following equation:

Equation 4:

$$\text{M\&I annual allocation (X AF)} = \text{HU}_{\text{average}} \times Z_X$$

Where:

- $\text{HU}_{\text{average}}$ ~~results from Equation 2 and~~ is the calculated average of Historical Use as adjusted pursuant to Term and Condition 1 and the Implementation Procedures – Historical Use Adjustments, in the three adjusted historical use years~~Unconstrained Years~~
- Z_X is the corresponding M&I Allocation percent from Table 3 or Table 4.

Note: Units (X) are in AF, annual M&I shortage allocation of CVP water.

10.9. When allocation of Irrigation water is reduced below 25 percent of Irrigation contract entitlement, Reclamation will reassess both the availability of CVP water supply and CVP water demand. Due to limited water supplies, during these times M&I water allocation to contractors may be reduced below 75 percent of adjusted historical use.

3.3 Implementation Procedures - Public Health & Safety

1. When M&I allocations are reduced below 75 percent, the M&I allocation will be equal to the greater of the percentage of ~~historical use~~Historical Use, as adjusted pursuant to Term and Condition 1 and the Implementation Procedures – Historical Use Adjustments, or ~~public health & safety level~~Public Health & Safety Level, ~~(to a maximum of 75% of historical use)~~ as shown in Table 4.

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Table 4: Allocation of M&I Water When Allocations of Irrigation Water are Below 25 Percent

Irrigation Allocation (% of contract entitlement)	M&I Allocation (% of historical use)
Between 25% and 50%	75%
20%	Maximum of 70% of historical use or public health & safety
15%	Maximum of 65% of historical use or public health & safety
10%	Maximum of 60% of historical use or public health & safety
5%	Maximum of 55% of historical use or public health & safety
0%	Maximum of 50% of historical use or public health & safety

Note: If CVP water is not available, M&I contractors may be reduced below 50%.

~~2. Reclamation will strive to deliver CVP water to Consistent with Term and Condition 6, if an M&I contractor at not less than a public health and safety water supply level, provided determines that its allocation of CVP water is available, insufficient to meet its Public Health and Safety Level, the contractor shall submit a request to Reclamation for an increase in allocation, if:-~~

- ~~a. an M&I water contractor submits a request to Reclamation for public health and safety water supply delivery;—~~
- ~~b. the Governor declares an emergency due to water shortage applicable to that contractor; and/or~~

~~2. Reclamation, in consultation with allocation together with supporting documentation,¹~~

- ~~e. the contractor, determines that an emergency exists due to water shortage conditions.—~~

3. Subject to Procedure 7 below, ~~T~~the public health & safety level (PH&S) will be calculated to reflect the contractor's domestic, commercial, institutional, and industrial demands and system losses, as follows:

Equation 5:

¹ Reclamation will also, to the extent it has available resources, review M&I contractor early submittals on preliminary PH&S levels when M&I contractors believe allocations in the forthcoming year will be driven by Water Shortage Conditions. Under such circumstances, M&I contractors may seek to minimize the subsequent review time needed by Reclamation once allocations are announced.

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$$\text{Public Health and Safety Allocation Amount (PH\&S)} = D + CI + I + L$$

Where:

$$\text{Domestic use (D)} = \text{Current Population} \times 55 \text{ gpd}^2$$

$$\text{Commercial and Institutional (CI)} = 80\% \text{ of Projected Commercial Demand}$$

$$\text{Industrial (I)} = 90\% \text{ of Projected Industrial Demand}$$

$$\text{System (Conveyance) Losses (L)} = 10\% \text{ of } (D + CI + I)$$

4. M&I water contractors will have the option of calculating the PH&S level for review and approval by Reclamation or request that Reclamation calculate the PH&S on behalf of the M&I water contractor.
5. ~~If an M&I water contractor calculates its own PH&S level,~~ Reclamation will review and verify calculations submitted by the contractor. ~~The contractor~~ Contractors will calculate its PH&S level~~levels~~ using ~~criteria noted in Item 18~~ Equation 5 and will submit the calculated level to Reclamation along with adequate support documentation for review.
6. If Reclamation calculates the PH&S level, Reclamation ~~may will~~ use information received from the water contractor ~~as well as and may~~ supplement this with information from other sources.
7. Reclamation and the contractor ~~may will~~ confer and enter into negotiations regarding the calculated PH&S level, if needed, ~~to ensure that it represents the contractor's true PH&S demand~~; however, the final PH&S level to be used to determine the M&I water contractor's Shortage Allocation will be subject to Reclamation approval.
8. Each M&I contractor will provide to Reclamation its drought contingency plan designed to protect public health and safety. The contractor may provide a copy of its Urban Water Management Plan (UWMP) or water management plan (WMP) to Reclamation in lieu of a separate drought contingency plan so long as the UWMP or WMP contains the contractor's drought contingency plan.

² The per capita water demand rate used to calculate the PH&S levels shall be consistent with State law. ~~The 55-gallons per capita demand (gpcd) value reflects the requirements defined in California State Senate Bill SBx 7-7. Reclamation may adjust this value over time to reflect future changes in State law. If State criteria does not exist, the contractor will apply criteria developed by Reclamation (in consultation with the contractor) that will be consistent with relevant criteria used by similarly situated California M&I water entities.~~

³ ~~System Losses of 10% will be the default estimate. However, if applicable, a contractor may submit for Reclamation's review documentation demonstrating System Losses different from 10%, and the use of such different estimate will be subject to Reclamation's approval.~~

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9. In calculating an M&I contractor's CVP Shortage Allocation in circumstances when the allocation must be increased to meet the contractor's PH&S level, as depicted in Figure 1, to the extent that the contractor's Non-CVP Water is applicable for use in that calculation, Reclamation shall use the following principles in making any adjustments:
- a. Subject to subparagraph b below, the quantities of Non-CVP Water identified as available in a critically dry year in the contractor's Drought Contingency Plan shall be used in making any calculations.
 - b. The contractor may provide updated projections of available non-CVP water for Reclamation's consideration.
 - c. The contractor's operational plans to carry over portions of its Non-CVP Water as contingency for a follow-on dry year (or series of dry years) shall be used in making any calculations.
 - d. The contractor's non-potable Non-CVP Water shall not be included as available Non-CVP Water satisfying Public Health and Safety needs except to the extent that it is used to meet non-domestic uses of Commercial and Institutional (CI) and Industrial (I) demands.