Section 5 - Supply Allocation Methodology (Updated April 2012)

5.1 Introduction

As outlined in the Drought Response Matrix discussed in **Section 4**, after the Water Authority's Board of Directors has exhausted available supply enhancement options and can no longer avoid cutbacks, implementation of an allocation methodology will occur. The challenge in developing the methodology was to meet the diverse needs of the member agencies in a fair and equitable manner. Each of the Water Authority's member agencies has a different demand profile and unique supply portfolio. Some agencies have abundant local supplies, while others are 100 percent reliant on water supplies purchased from the Water Authority. There are member agencies that serve primarily agricultural customers, while others serve only municipal and industrial customers.

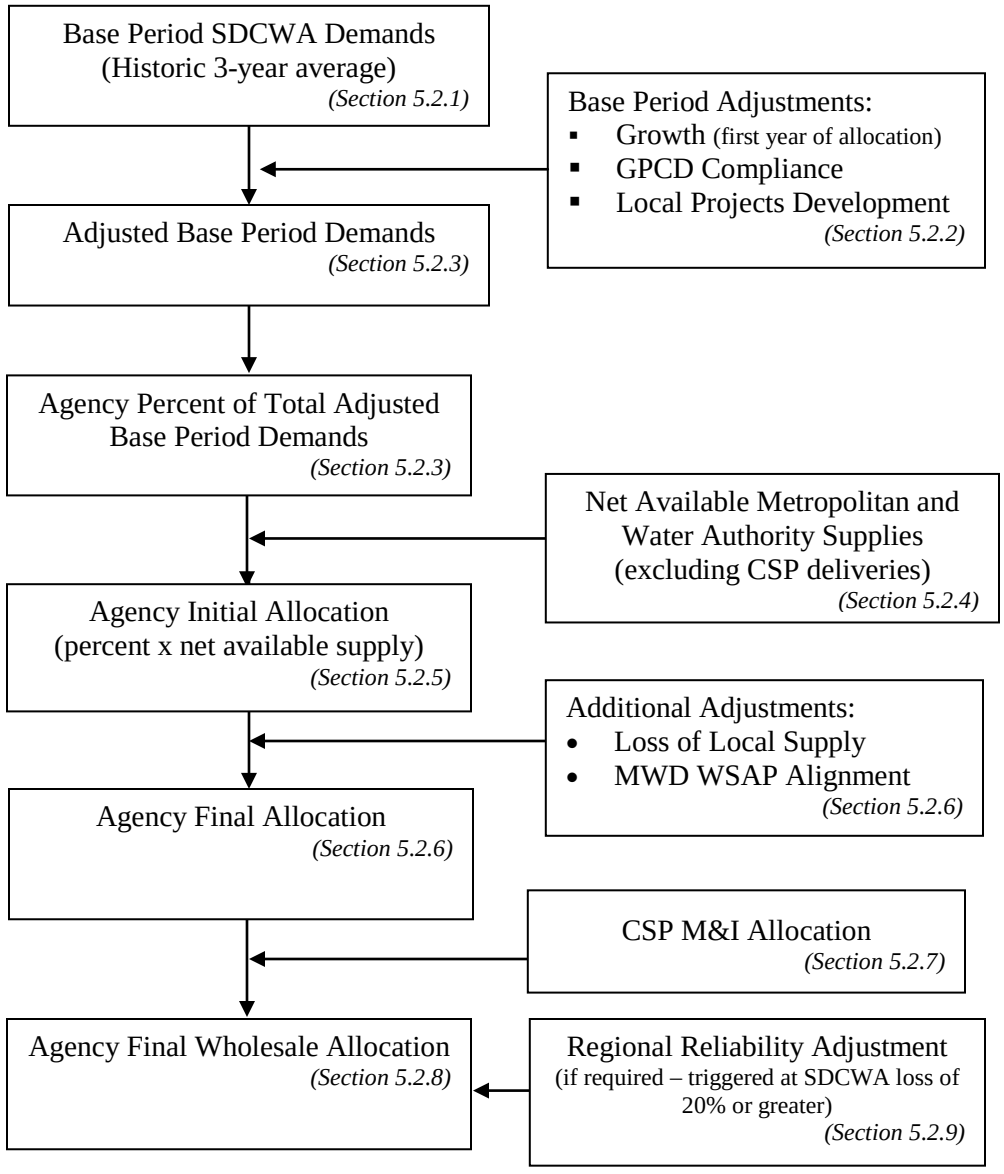
This section includes a description of the supply allocation methodology developed through a collaborative effort between the Water Authority and its member agencies. The goal of the methodology is to provide an equitable means of apportioning the Water Authority's supplies during periods of supply shortages consistent with the TAC approved principles discussed in **Section 2.3**. Through the TAC meetings, Water Authority staff and designated member agency representatives have collectively agreed to the allocation methodology described in this section.

In evaluating implementation of the Water Authority's allocation methodology during the FY 2010 and FY 2011cutback period, Water Authority and member agency staff identified specific elements of the methodology for review and refinement. As part of this effort, it was also noted that certain conditions have changed since adoption of the methodology in 2006, specifically in the area of conservation. Adoption of State water use efficiency legislation has caused a paradigm shift in conservation tracking, and prompted an evaluation of the manner in which the allocation methodology addresses demand hardening and conservation savings. A final area of review involved the relationship between the Water Authority's methodology and recent modifications to Metropolitan's Water Supply Allocation Plan (WSAP). Alignment between the two allocation plans was necessary when methodological inconsistencies result in unintended and inequitable impacts to the region or a single member agency. On April 26, 2012, the Water Authority Board approved modifications to the allocation methodology that were developed through the member agency review and refinement process.

To provide an overview of the allocation methodology that includes the April 2012 modifications, a schematic has been prepared that shows principal steps in the process. As shown in **Figure 5-1**, the methodology begins with a determination of each agency's base period demands. From this base, adjustments are added to account for agency's growth in demand, local projects development, and compliance with water use efficiency requirements. The calculation results in an adjusted base period demand for each member agency. Next, the amount of supplies available from the Water Authority is determined. This includes the Water Authority's own supplies (excluding Carryover Storage) along with supplies available from Metropolitan. Individual member agency's percent share of the total regional adjusted base period demand is then calculated. The percentages are multiplied by Water Authority supplies available to derive an initial allocation for each member agency. To calculate agencies' final supply allocations, additional adjustments are subsequently made for allocation-year local supply loss and for Metropolitan WSAP alignment. If the Water

Authority Board elects to utilize carryover storage, a separate allocation for this supply is performed and results in a final total wholesale allocation. In the rare circumstance of severe imported supply shortages, a regional reliability adjustment will be applied to avoid large uneven retail impacts. Each box shown in **Figure 5-1** contains a reference number to the corresponding subsection that describes the step in detail.

Figure 5-1
Supply Allocation Methodology



5.2 Description of Allocation Methodology

To help describe the allocation methodology and demonstrate the calculation procedures, the following example was developed. The example was prepared for illustration purposes only. For this sample analysis, demand and local supply data for five representative agencies was established to approximate a cross-section of urban and agricultural characteristics unique to the region. Other agency attributes such as estimated growth, per capita use, and local supply availability were also based on local agency characteristics.

The first step in determining the severity of necessary cutbacks during any water supply shortage event is an assessment of available supply compared to estimated demands. Because the majority of the region's water supply originates from outside the San Diego area, the severity of regional drought cutbacks is driven by the availability of imported supplies. However, imported supplies developed by the Water Authority are less vulnerable to reductions due to their higher priority water right. The high reliability of the IID transfer water and conserved water resulting from the lining of the All-American Canal and Coachella Canals assures that these supplies will be available to the Water Authority during extreme hydrologic events. As a result, imported Metropolitan supplies and local surface water would be most susceptible to a reduction during a drought. Therefore, an estimated 15 percent cutback in Metropolitan supplies to the Water Authority was assumed to illustrate the allocation methodology.

5.2.1 Historic Base Period Demands on the Water Authority (Unadjusted)

A historic base period demand is required to establish each agency's demands on the Water Authority prior to activation of the WSDRP. Base period demands are calculated using data from the three most recently completed consecutive fiscal years immediately preceding the year in which Board action is taken to activate the WSDRP due to supply shortage conditions. Each of the three consecutive fiscal years will be years in which the WSDRP has not been activated. Each agency's base period demand is established by calculating its three-year average of demand.

For illustrative purposes, **Table 5-1** contains historic base period demands for the sample agencies. In the event that consecutive multi-year allocations are required, base period demands (based on the three years prior to the activation of the WSDRP) are to remain fixed for the duration of the allocation.

Table 5-1
Example
Historic Base Period Demands on Water Authority

	Agency A	Agency B	Agency C	Agency D	Agency E
SDCWA Demand (three-year average)	2,200	6,500	181,000	43,100	25,000

5.2.2 Adjustments

Adjustments applied to the base period were developed to equitably account for relevant factors in calculating each agency's allocation. Such factors include growth, compliance with water use efficiency requirements, local supply availability, and efforts taken by local agencies to develop reliable local projects such as recycled water, groundwater recovery, and seawater desalination. The adjustments are intended to acknowledge unique agency characteristics and provide an incentive for agencies to decrease their reliance on imported supplies over the long-term.
The following is a summary of each adjustment:

Growth

Because the base period is fixed, a growth adjustment is applied to estimate the increase in demand due to growth from the base period to the allocation year. This adjustment is calculated using agency-level population estimates as a metric to approximate growth in demand. These population figures are based on SANDAG generated annual demographic totals. Each agency's demand increase is computed by multiplying its change in population by a per-capita water use efficiency factor (GPCD factor). The GPCD factor is an aggregate of member agencies' SBX7-7 GPCD targets from the Water Authority's Urban Water Management Plan (UWMP), and encompasses residential and Commercial, Industrial, and Institutional (CII) demands. As an example, the 2010 UWMP contains an aggregated GPCD target of 174 GPCD for year 2015. The growth adjustment calculation is expressed as:

$$= \textit{(Change in Population) X (Aggregated Member Agency GPCD Target)}$$

However, if an agency's actual base period GPCD is less than the aggregated GPCD target, the lower value will be utilized as the water use factor in the growth calculation. This is done to ensure that the growth adjustment reflects efficient water use levels in the member agency's service area.

In the event that an agency experiences minimal or no population increase, an alternate growth adjustment calculation is available. To qualify, the agency must have sustained a growth rate of less than 50 percent of the regional population growth rate. As previously stated, SANDAG data will be utilized to determine each agency's and the regional growth rate. Under the proposed adjustment, CII growth would be captured through CII meter installations that occurred after the base period. Additionally, residential growth in demands would be captured by applying a water-efficient residential GPCD to the minimal population increase. Agencies requesting this method for capturing growth are required to provide adequate documentation on CII meter installations and residential GPCD factors based on their individual SBX7-7 targets.

Finally, to ensure alignment with Metropolitan's WSAP in subsequent years of a multi-year allocation period the growth adjustment amount received from Metropolitan will be passed through to Water Authority member agencies based on each agency's proportional share of Water Authority-wide population growth. The reason the Water Authority growth adjustment from Metropolitan is not passed through to agencies in the first year, is because the two agencies' base periods would likely be different, making the time frame between the base periods and allocation years inconsistent. To again address the concern of agencies with minimal population growth and large

CII increase, an agency can request CII meter installations be used, in part, as a basis for proportioning the growth adjustment received from Metropolitan. The same criteria and documentation would be required as discussed above.

Table 5-2 illustrates the growth adjustment calculations for each sample agency.

Table 5-2
Growth Adjustment

Member Agency Population

Population	Agency A	**Agency B**	**Agency C**	**Agency D**	**Agency E**
Final Year of Base Period	12,197	31,784	789,627	220,970	116,782
Allocation Year	12,300	32,400	808,100	233,300	117,500
Change in Population	103	616	18,473	12,330	718

Governing GPCD Target

Agency	**Base Period GPCD**	**Aggregated Agency SBX 7-7 Target**	**Governing GPCD Target**
A	176	174	174
B	186	174	174
C	200	174	174
D	165	174	165
E	187	174	174

Growth Adjustment

	Agency A	**Agency B**	**Agency C**	**Agency D**	**Agency E**
Governing GPCD Target	174	174	174	165	174
Population	103	616	18,473	12,330	718
Gallons (MG)	**6.5**	**39.1**	**1,173.2**	**742.6**	**45.6**
Adjustment (AF)	**20**	**120**	**3,600**	**2,280**	**140**

GPCD Compliance

With the state's adoption of the SBX 7-7, retail agencies are now required to implement water use efficiency measures that result in a 20 percent reduction in their per capita water use by the year 2020. In order to acknowledge the importance of meeting SBX 7-7 targets, a water use efficiency adjustment is incorporated into the allocation methodology. The GPCD compliance adjustment applies only to agencies that fail to meet their SBX 7-7 2020 targets, or estimated pre-2020 targets,

over the Water Authority established allocation base period. Agencies not meeting their targets will have their SBX 7-7 compliance shortfall deducted from their base period demand. Consistent with SBX 7-7 guidelines, each agency's base period demand will be normalized for weather before comparison to its GPCD target.

However, to recognize agencies' efforts towards meeting their targets, an SBX 7-7 target performance allowance is included as part of the adjustment. Under this allowance, an agency's base period demand would be reduced only if its GPCD exceedence is over 5% of its SBX 7-7 target. GPCD compliance adjustments for the sample agencies are shown below in **Table 5-3**.

Table 5-3
GPCD Compliance Adjustment

	Agency A	**Agency B**	**Agency C**	**Agency D**	**Agency E**
Base Period GPCD (weather normalized)	176	186	200	165	187
SBX7-7 GPCD Target	178	174	210	170	180
Variance	-2	12	-10	-5	7
SBX 7-7 Target 5% Exceedence Allowance	**N/A**	**183**	**N/A**	**N/A**	**189**
Adjustment (GPCD)	**0**	**3**	**0**	**0**	**0**
Adjustment (AF)	**0**	**117**	**0**	**0**	**0**

Local Projects Development

The development of highly reliable in-region supplies, such as brackish groundwater recovery, recycled water, and seawater desalination result in a dual benefit. They add to the region's supply diversity and are a dependable source during shortages of imported water. An adjustment is made for the regional benefit of these annually reliable supplies. The adjustment recognizes both the investment made by the local agency and the regional financial contribution made by the Water Authority. Similar to the base period calculation time frame, a three-year average of beneficial use from these reliable supplies is employed to calculate the adjustment. The Local Projects Development adjustment is 30 percent of the three-year average. In addition to the incentive from the adjustment, the member agency will be able to utilize 100 percent of their local project's supply that is available during a drought. **Table 5-4** on the following page shows the Local Projects Adjustment.

Table 5-4
Local Projects Development Adjustment (AF)

Year	Agency A	Agency B	Agency C	Agency D	Agency E
1	65	0	4,900	1,310	1,850
2	64	0	4,950	1,350	2,100
3	66	0	5,150	1,340	2,050
Average	**65**	**0**	**5,000**	**1,333**	**2,000**
30% Credit	**20**	**0**	**1,500**	**400**	**600**

5.2.3 Adjusted Base Period Demands and Supply Allocation Percentages

An agency's adjusted base period demand is calculated by adding the applicable adjustments to their initial base period demand. The adjusted base period demand amount is then used to generate an agency's pro-rata percent share of the total adjusted base period demand. It is this percentage that is used to calculate an agency's initial imported supply allocation volume. **Table 5-5** illustrates the calculation for the sample agencies.

Table 5-5
Adjusted Base Period Demand and
Initial Supply Allocation Percentages (AF)

Agency	Base Period Demand on SDCWA	Growth Adjustment	GPCD Compliance Adjustment	Local Projects Development Adjustment	Adjusted Base Period Demand	Pro-rata Share of Adjusted Base Period Demand
A	2,200	20	0	20	2,240	0.80%
B	6,500	120	-117	0	6,503	2.40%
C	181,000	3,600	0	1,500	186,100	69.90%
D	43,100	2,280	0	400	45,780	17.20%
E	25,000	140	0	600	25,740	9.70%
				Total	**266,363**	

5.2.4 Water Authority Supply Availability and Net Cutback Percentages

The next step in the allocation methodology is to identify the total supplies available to meet member agency demands during shortage events. Supplies are equal to the sum of water from Metropolitan, the Water Authority's existing Imperial Irrigation District transfer water, conserved water from planned canal lining programs, and projected supplies from future seawater desalination project(s). These additional supplies developed by the Water Authority help to reduce demands on Metropolitan, and therefore decrease the impact from reductions in Metropolitan's supplies. This is demonstrated in the calculations shown in **Table 5-6**.

For this example, it is assumed that Metropolitan's allocation results in a drought supply allotment equal to 85 percent of the Water Authority's demand on Metropolitan. In the example, Water Authority supplies are set at 20,000 acre-feet per year. Total supply availability is computed by combining Water Authority supplies and Metropolitan drought supplies (**Table 5-6**). As discussed in Section 5.2.6., the loss of local supply adjustment requires a portion of the available supply to be set aside to implement the adjustment, the loss of local supply volume is shown in **Table 5-8**.

Table 5-6
Supply Availability - illustrative purposes (AF)

Supply Availability

Allocation-Year Demand	273,360
SDCWA Supply	20,000
Demand on Metropolitan	253,360
Metropolitan Cutback to Supplies	15%
Net Metropolitan Supply Availability	215,356
Initial SDCWA Supply Availability	235,356
Loss of Local Supply Adjustment Set Aside	4,700
Net SDCWA Supply Availability	230,656

5.2.5 Member Agency Initial Allocation of Water Authority Supplies

The next step in the allocation methodology is to determine the initial member agency level allocation of available supplies. This is calculated by multiplying total available supplies (excluding carryover storage) by each agency's percent share of the adjusted base period demand, as shown in the following equation:

= *(Net Available Regional Imported Supply) X (Agency's Pro-rata Share of Base Period Demand)*

For the example, data from **Tables 5-5** and **5-6** are used to calculate allocations for the sample agencies. The results are shown in **Table 5-7**.

Table 5-7
Initial Imported Supply Allocation Volumes

Agency	Pro-rata Share of Adjusted Base Period SDCWA Demands	SDCWA Initial Allocation Volume
A	0.8%	1,845.2
B	2.4%	5,536
C	69.9%	161,228
D	17.2%	39,673
E	9.7%	22,374
Total	**100.0%**	**230,656**

5.2.6 Additional Adjustments

Loss of Local Supply

Some agencies have invested heavily in local supply development, thereby reducing their reliance on imported water and providing other regional benefits such as surface water treatment capacity. The loss of local supply adjustment was developed to recognize the benefit of these historic supplies and not penalize agencies for diminished local supplies during an allocation year. The adjustment is calculated as the difference between an agency's average local supply used over the base period and its projected allocation-year local supply use. This difference is then reduced by the Water Authority cutback percentage from MWD.
Loss of local supply during an allocation year, as used in this section, shall be deemed by the Water Authority to occur, or have occurred, where a member agency's locally produced source of water supply is lost or otherwise reduced as a result of drought/locally dry conditions, legislative and regulatory actions, court orders, water rights decrees and related settlements, the inability of the member agency claiming the adjustment to obtain contracted deliveries from a local water supplier , damage or loss of member agency infrastructure needed to produce, store, treat and convey local water supplies, or other circumstances where the member agency has lost the ability to utilize a local water supply through no fault of its own. The Loss of Local Supply Adjustment for the sample agencies is shown in **Table 5-8**.

Member agency developed local water supplies subject to adjustment under this provision include, but are not limited to, locally produced surface water, groundwater, desalinated ocean or brackish water, recycled water, captured stormwater or any other locally produced source of water that satisfies the potable or non-potable demands of a Water Authority member agency during the allocation year where a loss of local supply adjustment is sought. It is critical that the agency claiming a potential local supply loss adequately document the actual loss for the year end reconciliation when financial penalties for exceeding allocation targets are assessed.

While recycled, brackish groundwater, and seawater desalination supplies are eligible for the Loss of Local Supply Adjustment, doing so will preclude an agency from applying for the Local Projects Development Adjustment described in the Section 5.2.2 on this same supply.

Table 5-8
Loss of Local Supply Adjustment

Base Period Local Use

Year	Agency A	Agency B	Agency C	Agency D	Agency E
1	0	0	19,700	0	2,000
2	0	0	21,800	0	3,900
3	0	0	18,500	0	2,500
Average	**0**	**0**	**20,000**	**0**	**2,800**
Allocation Year Local Supply	**0**	**0**	**15,000**	**0**	**1,925**
Difference (less 15% MWD Cutback)	**0**	**0**	**4,250**	**0**	**744**

Metropolitan WSAP Alignment

The WSDRP allocation methodology also contains adjustments necessary to align it with Metropolitan's WSAP to ensure equitable supply allocations to Water Authority member agencies. In December of 2008, the Water Authority Board approved alignment modifications that dealt with agencies adding planned local supplies and extraordinary increases in production during consecutive allocation years. The modifications were made because, due to increases in certain member agency local supplies, the Water Authority would have been allocated less water by Metropolitan and the net effect on the Water Authority's allocation needs to be passed through to the member agency developing the local supply.

For agencies adding planned local supplies during consecutive allocation years, a pass through of the net effect on the Water Authority's allocation from Metropolitan will be conveyed directly to the Water Authority member agencies adding these local supplies. The specific change in the amount of water allocated to the Water Authority by Metropolitan because of the member agency's local supply will be identified and the member agency's allocation will be adjusted accordingly by that amount of volume. If more than one agency is involved in a single local supply project, each participating agency's Water Authority allocation will be adjusted on a pro rata basis relative to the participating agency's share of the water delivered by the local supply project.

Under the Metropolitan WSAP, "extraordinary" increases in production are treated differently than planned local supplies. This allows the member agency to improve its reliability through unplanned actions that are solely in response to the drought. Extraordinary increases, such as short-term water transfers and overproduction (mining) of groundwater basins, are not included in an agency's allocation year local supplies. However, the full amount of the extraordinary local supply will be included in the calculation of an agency's Retail Impact Adjustment. Similar to planned local supplies, the change in the amount of water allocated to the Water Authority by Metropolitan will be identified and the allocation of the member agency who implemented the extraordinary local supply will be adjusted accordingly by that volume of water.

The Metropolitan Board subsequently approved additional modifications to its WSAP in September 2011. To maintain continued equitable allocation of supplies to member agencies, an additional adjustment pertaining to recycled water development is now made to the Water Authority's allocation methodology based on the WSAP modifications. The net effect on the Water Authority's allocation from the increased recycled water developed after the based period would be passed on to those member agencies that developed the recycled water supplies. This would be reflected as a reduction in their allocation from the Water Authority. While the agency's allocation from the Water Authority would be reduced, the agency would still be better off in regard to reliability then if they had not developed the recycled water supply.

5.2.7 Carryover Storage Program

Special Agricultural Water Rate (SAWR)

Under the SAWR program, SAWR customers are exempt from paying the Water Authority's storage charge and in return will not receive supplies from the Carryover Storage Program (CSP) during shortages and limited supplies from the Emergency Storage Program.

Carryover Storage Adjustment

Under the SAWR, no CSP supplies are available to SAWR customers during the Supply Augmentation Stage (Stage 2) or Mandatory Cutback Stage (Stage 3) of the WSDRP. A description of the methodology used to ensure CSP supplies are delivered solely to M&I customers, under both stages, is outlined below.

Utilizing CSP Deliveries during Supply Augmentation Stage (Stage 2)
In this scenario, the assumptions are that MWD is allocating supplies to its member agencies, but the cutback is minimal, and the Water Authority and its member agencies are able to avoid mandatory cutbacks to M&I customers through shortage management actions. These actions could include voluntary conservation measures and utilization of CSP deliveries. To ensure no CSP supplies are delivered to SAWR customers, each member agency with SAWR customers would be given a SAWR supply allocation based on the Water Authority cutback level. The following basic steps will be taken to establish the SAWR allocation of non-CSP supplies:

1. Establish SAWR base period, consisting of SAWR demands on the Water Authority from the three consecutive most recently completed fiscal years prior to activation of the WSDRP;
2. Determine Water Authority cutback level based on Metropolitan allocation, Water Authority supplies (excluding CSP) and estimated water demand; and
3. Apply cutback level to each agency's SAWR base period to determine its SAWR allocation.

Allocating CSP Supplies during Mandatory Cutback Stage (Stage 3)
At this stage, Metropolitan and the Water Authority are both allocating supplies to their member agencies. The Water Authority is utilizing CSP supplies to lessen the cutback level from Metropolitan to M&I customers. In establishing member agency allocations, it is critical that the allocations reflect only CSP deliveries to M&I customers. As a result, a separate calculation to

determine the M&I allocation of CSP deliveries is required. The methodology employed is consistent with the approach used to allocate non-CSP supplies (i.e., MWD allocation and Water Authority QSA supplies), except that WSAP Alignment Adjustments are not necessary because they pertain to allocation of Metropolitan supplies.

For this sample calculation, it is assumed that the Water Authority is in mandatory cutbacks and 10,000 acre-feet of CSP storage is made available for distribution to M&I customers. The methodology used to allocate the 10,000 acre-feet of CSP supplies is shown in **Table 5-9.** In this scenario, agency M&I demands are calculated by subtracting SAWR water use from their adjusted base period demand. Each agency's percent share of M&I demand is then computed and used to determine its proportional share of the available CSP supplies.

Table 5-9
CSP Allocation (AF)

Agency	**Adjusted Base Period Demand**	**SAWR Base Period Demand**	**M&I Base Period Demand**	**Pro-rata Share of M&I Demand**	**CSP Allocation** (10,000 AF available storage)
A	2,240	0	2,240	0.8%	80
B	6,503	100	6,403	2.4%	240
C	186,100	200	185,900	70.1%	7,010
D	45,780	800	44,980	17.0%	1,700
E	25,740	0	25,740	9.7%	970
Total	**266,363**	**1,100**	**265,263**	**100.0%**	**10,000**

5.2.8 Member Agency Final Total Wholesale Allocation

The last step in the allocation process is to calculate each agency's total available Water Authority supplies. This is done by summing each agency's allocation of supplies and adding in its share of M&I CSP allocation, as shown in the following equation:

$$= \textit{Supply Allocation} + \textit{CSP Allocation (M\&I)}$$

For the example, **Table 5-10** shows final allocations for the sample agencies. Unless Water Authority supply cutbacks are severe, at or exceeding 20%, the calculation is now complete. If the cutback is severe, the methodology includes a regional reliability adjustment, which is discussed in **Section 5.2.9** below.

Table 5-10
Final Supply Allocation (AF)

Agency	SDCWA Initial Allocation Volume	Loss of Local Supply Adjustment	MWD WSAP Alignment	CSP Allocation	Total Allocation Volume
A	1,845	0	0	80	1,925
B	5,536	0	0	240	5,776
C	161,228	4,250	0	7,010	172,488
D	39,673	0	0	1,700	41,373
E	22,374	744	0	970	24,088
Total	**230,656**	**4,994**	**0**	**10,000**	**245,650**

5.2.9 Regional Reliability Adjustment (if required)

In accordance with Principle 15, which states, "*In order to protect the economic health of the entire region, it is very important for the allocation methodology to avoid large, uneven retail impacts across the region. The methodology should include a minimum level of retail agency reliability to ensure equitable allocation among the member agencies,"* a regional reliability floor was established. The floor, if needed, is set at 5 percent below the region's total level of service and is triggered when the net cutback to total Water Authority supplies reaches or exceeds 20 percent. Taking into account the supply development by the Water Authority, its member agencies, and Metropolitan, this level of cutback is very unlikely. The first step in determining the adjustment is calculation of the level of service for each member agency and region, which is shown below.

Level of Service

The level of service value is computed as the ratio of total supplies available to an agency, including allocated imported supplies and local resources, to projected demand during that same period. Thus, in order to calculate Level of Service estimates, projected member agency allocation-year demand and supply projections are necessary.

Table 5-11 contains estimated allocation-year demands and supplies used for this example. The second column titled, Demand on SDCWA, has been computed for this example by adding the demand increase associated with the growth adjustment and the estimated loss of local potable supply volume to the base period demand. Estimated allocation year local supplies used to offset imported demands are provided by member agencies.

Table 5-11
Allocation-Year Demand and Supply (AF)

Agency	Demand on SDCWA	Total Local Supply	Total Demands
A	2,220	70	2,290
B	6,920	0	6,920
C	192,600	20,100	212,700
D	45,380	1,400	46,780
E	26,540	4,125	30,665
Total	**273,660**	**25,695**	**299,355**

Summing an agency's allocation volume (**Table 5-10**) and projected allocation-year total local supplies (**Table 5-11**) results in their total supply during a cutback. This value is then divided by the projected total demand (**Table 5-11**) to generate the agency's estimated level of service. A summary of agency level allocations and resulting levels of service is shown in **Table 5-12.** The level of service of the agencies' and region are utilized in severe cutback levels to calculate the regional reliability adjustment.

Table 5-12
Allocation and Resulting Level of Service (AF)
15% Cutback to Metropolitan Supply

Agency	Total Allocation Volume	Total Local Supply	Total Supply	Projected Total Demand	Level of Service
A	1,925	70	1,995	2,290	87.1%
B	5,776	0	5,776	6,920	83.5%
C	172,488	20,100	192,588	212,700	90.5%
D	41,373	1,400	42,773	46,780	91.4%
E	24,088	4,125	28,213	30,665	92.0%
Total	**245,650**	**25,695**	**271,345**	**299,355**	

Total Regional Level of Service - (271,351 / 299,355) = 91%

Regional Reliability Adjustment Calculation

The regional reliability floor effectively reallocates a portion of the Water Authority's supplies necessary to bring all agencies up to the minimum level of service. This floor is set at 5 percent below the region's total level of service and is triggered when the net cutback to total Water Authority supplies reaches or exceeds 20 percent. The volume of imported supplies required to meet this shortfall is provided by those agencies with a total level of service exceeding the region's total level of service. An agency's contribution is calculated by multiplying its pro-rata percent share of the aggregated exceedance volumes by the total level of service shortfall. However, an agency's

contribution cannot exceed quantities that would lower its total level of service below the regional level of service.

Data from the previous example is used to illustrate the regional reliability floor adjustment procedure. In this scenario the reduction in Metropolitan's supply is elevated to 30 percent. As a result, the net cutback in Water Authority total supplies increases to 28 percent, which triggers the reliability adjustment. A detailed summary of the regional reliability floor calculation is shown in **Table 5-13**.

5.2.10 Data Reconciliation

Since allocations are based on estimated values, an assessment of each agency's actual demand and supply utilization during a cutback is necessary. Through this process, a final accounting of appropriate allocation volumes will be calculated. The reconciliation of certified and actual data will occur at the end of the allocation period or at the end of twelve months, whichever comes first. Agencies are required to certify the following information: total and SAWR demands, base period GPCD, local potable use and recycled water use.

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Table 5-13
Regional Reliability Floor (AF)
30% Cutback to Metropolitan Supply

Available Supply: 192,358

Regional Reliability

Regional Level of Service(233,341/299,355)= 78%

Regional Reliability Floor (-5%) 73%

Level of Service

Agency	SDCWA Initial Allocation Volume	Estimated Local Supplies	Loss of Local Supply Adjustment	CSP Allocation	Total Supply	Projected Total Demand	Level of Service
A	1,539	70	0	80	1,689	2,290	73.7%
B	4,617	0	0	240	4,857	6,920	70.2%
C	134,458	20,100	4,250	7,010	165,818	212,700	78.0%
D	33,086	1,400	0	1,700	36,186	46,780	77.4%
E	18,659	4,125	744	970	24,497	30,665	79.9%
Total	192,358	**25,695**	**4,994**	**10,000**	**233,047**	**299,355**	

Regional Reliability Floor Reallocation

Agency	Total Floor Check	Total Shortfall	Pro-rata Share of Total Shortfall	Exceedance of Regional Reliability Average	Exceedance Volume	Pro-rata Share of Exceedance	Exceedance Agency Contribution	Revised SDCWA Initial Allocation	Revised Total Supply	Revised Level of Service
A	0.0%	0	0.00%	0.00%	0	0.0%	0	1,539	1,691	73.7%
B	-2.8%	195	100.00%	0.00%	0	0.0%	0	4,812	5,052	73.0%
C	0.0%	0	0.00%	0.00%	0	0.0%	0	134,458	165,975	78.0%
D	0.0%	0	0.00%	0.00%	0	0.0%	0	33,086	36,236	77.4%
E	0.0%	0	0.00%	1.90%	583	100.0%	195	18,464	24,387	79.3%

Shortfall Calculation **Exceedance Calculation** **Reallocation**

5.3 Member Agency Transfers Secured Following Allocation Methodology

The Water Authority's member agencies have the option of purchasing water from an entity and using, among other facilities, the State Water Project, the Colorado River Aqueduct, Metropolitan's distribution system, and the Water Authority's distribution system to wheel the water. In addition to the cost of the transfer water, the member agency would pay the applicable wheeling rates to utilize these facilities. This transfer water would not be considered a Water Authority supply or local supply when allocating Water Authority supplies under the methodology included in the WSDRP. Rather, the transfer water would be "on top" of the allocation, and thus, not factored into the allocation methodology base period or be eligible for the local project development adjustment.

However under the Metropolitan WSAP, these tranfer supplies would be considered an "extraordinary" increase in production as discussed in Section 5.2.6. With extraordinary increases, only the portion of the production equal to Metropolitan's regional shortage is added to the base period local supply. The remainder of the supply is outside of the Metropolitan WSAP and adds directly to the agency's supply. For example, during a 10 percent shortage, 10 percent of the extraordinary increase is added to the base period local supplies while 90 percent is not. It is through this addition to the base period local supplies that the Metroplitan allocation to the Water Authority is reduced.

Consistent with the Water Authority's alignment methodology, the net effect on the Water Authority's allocation from Metropolitan will be directly passed through to member agencies with the extraordinary increases in production. The change in the amount of water allocated to the Water Authority by Metropolitan will be identified and the member agency's allocation will be adjusted accordingly by that amount of water. If more than one agency is involved, each participating agency's Water Authority allocation will be adjusted on a pro-rata basis relative to the participating agency's share of the extraordinary local supply increase.

Water Authority staff will assist member agencies in entering into agreements with the wheeling entities. Additionally, the Water Authority may need to be a signatory to some of the wheeling agreements, such as an agreement with Metropolitan. However, it will be the member agency's responsibility to find the transfer water, enter into an agreement with the selling entity, and comply with any other requirements (e.g. CEQA, NEPA). Any transfer water identified by the Water Authority during its search that it chooses not to purchase will also be available for purchase by its member agencies.