

Appendix G

Shortage Allocation Model Documentation

This appendix describes the Shortage Allocation Model and assumptions that were used to allocate shortages to water users in the states of Arizona, California, and Nevada (Lower Division states) as part of the analysis of water deliveries in this Final EIS.

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G.1 Introduction

In order to assess the potential shortages and socioeconomic effects to users under each of the alternatives, specific modeling assumptions were made and these are documented in this appendix. The proposed federal action is for the purpose of adopting additional operational guidelines to improve the Department of the Interior's (Department) annual management and operation of key Colorado River reservoirs for an interim period through 2026. However, in order to assess the potential effects of the proposed federal action in this Final EIS, certain modeling assumptions are used that display projected water deliveries to Mexico. Reclamation's modeling assumptions are not intended to constitute an interpretation or application of the 1944 Treaty or to represent current United States policy or a determination of future United States policy regarding deliveries to Mexico.

The United States will conduct all necessary and appropriate discussions regarding the proposed federal action and implementation of the 1944 Treaty with Mexico through the International Boundary and Water Commission in consultation with the Department of State.

G.2 Background and Purpose

The Shortage Allocation Model was created to calculate the quantity of Colorado River water that would be available to water entitlement holders under shortage conditions on the mainstream of the lower Colorado River. A shortage condition would exist during a year when the Secretary of the Department of the Interior (Secretary), as part of the Annual Operating Plan (AOP), determines that there is less than 7.5 million acre-feet (maf) of water available to the Lower Division states.

The Shortage Allocation Model simulates shortage allocations and adjusts deliveries of Colorado River water in accordance with the apportionment to the Lower Division states prescribed in the Boulder Canyon Project Act of 1928, as confirmed by the Consolidated Decree. Certain modeling assumptions were made with regard to how shortages may be allocated. Reclamation acknowledges that there may be other interpretations of how shortages should be distributed. Reclamation's modeling assumptions are not intended to represent current or future policy with respect to shortage sharing or to limit Secretarial discretion to distribute shortages.

The Shortage Allocation Model simulates shortage allocations to individual Colorado River entitlement holders within each state. Entitlement holders are all persons or entities authorized to beneficially use Colorado River water pursuant to: 1) a right decreed by the United States Supreme Court, 2) a contract for the delivery of Colorado River water through the Secretary, or 3) a Secretarial reservation. For a list of each State's Colorado River water entitlement holders, please see Attachment A, Table Att. A-2 through Att. A-4.

Under the Colorado River Basin Project Act of 1968 (CRBPA) (Section 301(b)), the Central Arizona Project (CAP) incurs most of any initial shortage to the Lower Division states. Consequently, there is great interest in how shortages are allocated among the individual CAP

users. The distribution of CAP water during a time of shortage is complex, and the Shortage Allocation Model has been developed to accommodate the unique shortage provisions of the Arizona Water Settlements Act (Public Law 108-451 dated December 10, 2004) and the CAP shortage framework as defined in various CAP water delivery contracts.

G.3 Description of the Shortage Allocation Model

The Shortage Allocation Model was developed as worksheets in Microsoft Office 2003 Excel software using the Excel Visual Basic Editor. The Shortage Allocation Model contains 18 worksheets, which are summarized in Table G-1.

Table G-1
Relationship Between Worksheets in the Shortage Allocation Model

	Worksheet	Function	Retrieves Data from:	Sends Data to:
1	Region Worksheet	Calculates Stage I and Stage II Shortages to Nevada, California, Arizona, and Mexico	Arizona worksheets & Projected Use Schedules	Arizona, California, & Nevada worksheets
2	Nevada Worksheet	Calculates shortages to Nevada Entitlement Holders	Region Worksheet	
3	California Worksheet	Calculates shortages to California Entitlement Holders	Region Worksheet & Quantification Settlement Agreement (QSA) Worksheet	
4	Arizona Worksheet	Calculates shortages to Arizona Entitlement Holders	Region Worksheet & Arizona Projected Consumptive Use (CU) Schedules	CAP Worksheet
5	CAP Worksheet	Calculates shortages to CAP Entitlement Holders	Arizona Worksheet & CAP Projected CU Schedules	CAP Summary Worksheet
6	CAP Summary Worksheet	Displays all CAP Entitlements, Scheduled CU, Adjusted Delivery, and Reductions	CAP Worksheet & CAP Projected CU Schedules	
7	Present Perfected Rights (PPRs) Worksheet	Displays PPRs in date order regardless of state lines		
8	QSA Worksheet	Displays Exhibit B of the QSA		California Worksheet
9	Arizona CU Schedules for Priorities 1-3	Projected Consumptive Use Schedules Provided to model Stage I and II Shortages and shortages to Arizona Entitlement Holders		Arizona and Region Worksheet
10	Arizona CU Schedules for Fourth Priority	Projected Consumptive Use Schedules Provided to model Stage I and II Shortages and shortages to Arizona Entitlement Holders		Arizona and Region Worksheet
11	Summary of Arizona State and CAP Schedules	Shows that all Arizona Projected CU does not exceed 2.8 maf		CAP Non-Indian Agricultural (NIA) and Excess Agricultural Schedules

Table G-1
Relationship Between Worksheets in the Shortage Allocation Model

	Worksheet	Function	Retrieves Data from:	Sends Data to:
12 13 14 15	CAP Municipal & Industrial (M&I), Tribal, NIA, and Excess Agricultural Schedules	Used to show CAP water availability and capture simulated shortage impacts in future years		CAP Worksheet
16 17 18	Decree Worksheets	Shows how Diversion and CU ratios are calculated to estimate full CU Entitlements in Nevada and California, and ratios between Diversion and CU for all users		

The purpose and function of each worksheet is described as follows.

The Region worksheet (see Attachment A, Table Att. A-1) is the key worksheet for operating the Shortage Allocation Model. Once the Shortage Allocation Model is open, the user may enter any shortage volume in the “total reduction” yellow box of the Region tab. Next, to the left of the yellow box a shortage year must be selected by clicking on the “process” button, which provides various years that may be chosen. Each year is associated with different schedules for Colorado River entitlement holders, which the shortages will be based on. Once a year has been selected, the model will operate by selecting “process single shortage volume”. The Shortage Allocation Model calculates the amount of Stage 1 and Stage 2 Shortages (discussed in next section), and the amount of the shortage allocated to each of the Lower Division states, and to Mexico.¹ For purposes of discussion on this Appendix G, assumed water delivery reductions to Mexico will be referred to as “shortages”. The shortages to individual Colorado River entitlement holders are displayed on the State worksheets (Attachment A, Table Att. A-2 through A-4) and the CAP worksheet (Attachment A, Table Att. A-5). The links between the schedules, the Region worksheet, State worksheets, and CAP worksheet operate the Shortage Allocation Model.

The Shortage Allocation Model contains three State worksheets (Attachment A, Tables Att. A-2 through Att. A-4). Given any shortage volume, the State worksheets calculate the portion of the shortage amount that is allocated to the individual entitlement holders within each State. On the Arizona State worksheet, the adjusted delivery is calculated as a reduction to the scheduled use for each entitlement holder. On the California and Nevada State worksheets the reduced delivery

¹ Reclamation’s modeling assumptions are not intended to constitute an interpretation or application of the 1944 Treaty or to represent current United States policy or a determination of future United States policy regarding deliveries to Mexico. The United States will conduct all necessary and appropriate discussions regarding the proposed federal action and implementation of the 1944 Treaty with Mexico through the IBWC in consultation with the Department of State.

Appendix M and Appendix Q describe additional modeling assumptions used in the CRSS model for projected water reductions to Mexico, and Section G.6 in Appendix G describes the relationship between the Shortage Allocation Model and CRSS.

is calculated based upon an estimated full entitlement use schedule from 2004 water accounting data.

The Arizona State worksheet calculates the aggregate quantity of fourth priority water available to river users and CAP. In the Draft EIS, shortages were distributed between river users and CAP pro-rata based on scheduled use. The method used to distribute water delivery reductions within Arizona was modified to reflect the Arizona Department of Water Resources (ADWR) Director's Shortage Sharing Work Recommendations. This change basically related to the water delivery reductions to the Arizona Water Banking Authority (i.e. the unused apportionment in Arizona). Originally, in the modeling for the Draft EIS, the deliveries to the Arizona Water Banking Authority (AWBA) were reduced to zero before deliveries to any other water user in Arizona would occur. For the modeling used in the Final EIS, the Arizona water delivery reductions are distributed proportionally between the fourth priority mainstream river users and the CAP. However, for the portion of the water delivery reduction that is assigned to the CAP, the water deliveries to the AWBA are reduced to zero before the deliveries to any other CAP water user are reduced. Both ADWR's and Central Arizona Water Conservation District (CAWCD)'s recommendations were incorporated in the modeling assumptions for the Final EIS. Examples of how the water delivery reductions to Arizona were distributed in the Draft EIS and Final EIS are provided in Table Att. F-3 in Attachment F to this appendix.

The CAP worksheet imports the quantity of available water that is distributed to CAP on the Arizona worksheet, and distributes available water to CAP entitlement holders. The primary changes in the distribution of shortages within the CAP affected the Ak-Chin Indian Community and San Carlos Apache Tribe. Based on comments received on the Draft EIS, the Ak-Chin Indian Community was allocated up to 10,000 af annually of excess CAP water. For years in which water is available for banking by the ABWA, up to an additional 10,000 af is available for the Ak-Chin Indian Community pursuant to Section 2(b) of the Ak-Chin Indian Water Rights Settlement Act (Settlement). After the Secretary has met the water delivery obligation to the Ak-Chin Indian Community under the Ak-Chin Water Rights Settlement, any excess water is available for delivery to the San Carlos Apache Tribe. Estimated delivery losses of 4,500 af on the Santa Rosa Canal, incurred in the delivery of water to the Ak-Chin Indian Community, are charged to the Ak-Chin Indian Community's CAP Settlement. The resulting differences between the shortages modeled in the Draft EIS and Final EIS is provided in Attachment F, Table Att. F-3. Additionally, the Final EIS results of the CAP worksheet are displayed in the "Operational Worksheet: CAP" in Attachment A, Table Att. A-5.

Seven consumptive use schedules were provided by ADWR for use in the Shortage Allocation Model, for the period 2008 through 2060. The consumptive use schedules are listed below:

- 1) Arizona first through third priorities;
- 2) Arizona fourth priority;
- 3) CAP 2: municipal and industrial (M&I) priority user schedules (only provided to year 2035);

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- 4) CAP 2: Tribal schedules;
- 5) CAP 3: Non-Indian Agricultural (NIA) priority schedules;
- 6) CAP 4: excess agricultural water schedules (only provided to year 2030); and
- 7) Arizona Summary Schedules.

The ADWR consumptive use schedules are shown in Appendix D.

Three water accounting spreadsheets are provided for each state: Arizona, California, and Nevada. The water accounting spreadsheets provide historical water accounting information which is used to calculate diversion to consumptive use ratios for entitlement holders in the Shortage Allocation Model.

The Shortage Allocation Model also includes two supporting worksheets which are Exhibit B of the Quantification Settlement Agreement (QSA) (Exhibit B) and a full list of Present Perfected Rights (PPRs). Exhibit B (Attachment F, Table Att. F-2) displays the quantification of certain Colorado River water entitlements and transfers of Colorado River water in the State of California in thousands of acre-feet. The quantified entitlements are incorporated in the Shortage Allocation Model, while the transfers are referenced in Exhibit B. The PPR worksheet displays a complete list of the PPRs in the Lower Division states in date order from lowest to highest priority without regard to state lines (Attachment F, Table Att. F-1). PPR diversion entitlements amount to approximately 4.1 maf and an estimated consumptive use entitlement of 3.4 maf in the Lower Basin. In the event of a severe shortage, where there is insufficient Colorado River water to satisfy the needs of the PPR entitlement holders, the PPR worksheet shows the order in which the limited water supply would be delivered to the PPR holders.

The Shortage Allocation Model may be used to simulate any future shortage allocation for any year based on projected water use, water orders, historical use, or average historical use. In a normal year, the Shortage Allocation Model may be used to simulate the amount of excess water that may be available for banking in any state.

G.4 Assumptions in the Shortage Allocation Model

G.4.1 Introduction

In accordance with Section II (B)(3) of the Consolidated Decree and Section 301(b) of the CRBPA, the Secretary has the authority to declare and allocate shortages to the Lower Division states. Although some guidance is given with regard to how shortages would be allocated (i.e., PPRs must be met first without regard to state lines and California does not incur shortages until water use under Arizona post-1968 water delivery contracts is eliminated), no further guidance exists for the Secretary’s shortage allocation decisions.

To determine the hydrologic impacts of the shortage alternatives, assumptions were made with regard to how shortages might be shared. These assumptions are made to facilitate

analysis of the full range of potential impacts of each alternative and are not intended to represent current or future policy with respect to shortage sharing.

G.4.2 Stage 1 and Stage 2 Shortage Assumptions

In the Shortage Allocation Model, shortages in the Lower Basin are categorized as Stage 1 and Stage 2 Shortages. Shortages are first imposed under Stage 1 and would be applied to the most junior users within Arizona (those with post-1968 water rights, i.e., 4th and 5th priority rights within Arizona) and Nevada (primarily the Southern Nevada Water Agency [SNWA]). Stage 1 shortages continue until the deliveries to the post-1968 water rights holders in Arizona (including the CAP) are reduced to zero. The maximum amount of Stage 1 shortages during the period of analysis is dependent on the scheduled depletions for the post-1968 water rights holders and decreases over time from approximately 1.8 maf in 2008 to 1.7 maf in 2040. The post-1968 use decreases due to increasing water use of higher priorities.

After deliveries to the 4th and 5th priority rights within Arizona are reduced to zero, additional reductions are applied to Arizona, California, and Nevada. These shortages, referred to as Stage 2 shortages, continue to the shortage amount determined by the alternative.

The shortage sharing percentages are computed as follows:

- ◆ Shortage sharing for Stage 1: Arizona, Nevada, and Mexico take a water supply reduction.
 - Mexico: 16.67 percent reduction of the total shortage
 - computed as a ratio of Mexico's 1944 Treaty allotment to the sum of the apportionments of the Lower Division states and Mexico's 1944 Treaty allotment
 - $1.5 \text{ maf} / 9.0 \text{ maf} = 0.1667$
 - Nevada: 3.33 percent reduction of the total shortage
 - computed as a ratio of Nevada's apportionment to the sum of the apportionments of the Lower Division states and Mexico's 1944 Treaty allotment
 - $0.3 \text{ maf} / 9.0 \text{ maf} = 0.0333$
 - Arizona: 80 percent of the total shortage
 - computed as a ratio of Arizona and California's apportionment to the sum of the apportionments of the Lower Division states and Mexico's 1944 Treaty allotment
 - $(2.8 \text{ maf} + 4.4 \text{ maf}) / 9.0 \text{ maf} = 0.80$

- ◆ Shortage Sharing for Stage 2 Reductions (severe shortage after Arizona fourth and fifth priority use is reduced to zero and California shares in remaining shortage).
 - Mexico: 16.67 percent of the Stage 2 Shortage in addition to Stage 1 reductions
 - computed as a ratio of Mexico’s 1944 Treaty allotment less the amount of shortage applied to Mexico under Stage 1, to the sum of the apportionments of the Lower Division states and Mexico’s 1944 Treaty allotment less the total amount shorted to users under Stage 1
 - $(1.5 \text{ maf} - \text{Mexico Stage 1 shortage}) / (9.0 \text{ maf} - \text{total Stage 1 shortage}) = 0.1667$
 - Nevada: 3.33 percent of the Stage 2 Shortage in addition to Stage 1 Shortages
 - computed as a ratio of Nevada’s apportionment less the amount of shortage applied to Nevada under Stage 1, to the sum of the apportionments of the Lower Division states and Mexico’s 1944 Treaty allotment less the total amount shorted to users under Stage 1 Shortage
 - $(0.3 \text{ maf} - \text{Nevada Stage 1 Shortage}) / (9.0 \text{ maf} - \text{total Stage 1 Shortage}) = 0.0333$
 - Arizona: Arizona’s Stage 2 shortage is approximately 20 percent and varies due to Arizona’s one through three priority scheduled use
 - computed as a ratio of Arizona’s apportionment less the amount of shortage applied to Arizona under Stage 1, to the sum of the apportionments of the Lower Division states and Mexico’s 1944 Treaty allotment less the total amount shorted to users under Stage 1 Shortage
 - $(2.8 \text{ maf} - \text{Arizona Stage 1 Shortage}) / (9.0 \text{ maf} - \text{total Stage 1 Shortage})$
 - California: California’s Stage 2 Shortage is approximately 60 percent and varies due to Arizona’s priority one through three scheduled use
 - computed as a ratio of California’s apportionment, to the sum of the apportionments of the Lower Division states and Mexico’s 1944 Treaty allotment less the total amount shorted to users under Stage 1 Shortage
 - $(4.4 \text{ maf}) / (9.0 \text{ maf} - \text{total Stage 1 Shortage})$

G.4.3 Operations of Stage 1 and 2 Shortages

The Region worksheet, provided in Attachment A, Table Att. A-1, displays the calculations discussed above.

- ◆ listed along the left side of Attachment A, Table Att. A-1 are Stage 1 and 2 Shortages, and their respective entities: Mexico, Arizona, Nevada, and California. Along the top of the table are the corresponding consumptive use apportionments to each state and the 1944 Treaty allotment to Mexico, the available consumptive use, and the respective shortages;
- ◆ in Attachment A, Table Att. A-1, a 500,000 af shortage in year 2017 was not large enough to trigger a Stage 2 Shortage; therefore only Stage 1 consumptive use adjustments and reductions are calculated. In this example, consumptive use in Arizona is reduced by 400,000 af, consumptive use in Nevada is reduced by 16,667 af, and the delivery to Mexico is reduced by 83,333 af;
- ◆ in 2008, the first year of the proposed interim period, the maximum potential Stage 1 Shortage to the Lower Division states and Mexico is 1,827,557 af. The potential Stage 1 Shortage in 2008 is based on the projected use of 1,462,046 af for Arizona fourth priority, and a corresponding potential shortage for Nevada and Mexico based on their shortage sharing percentages;
- ◆ as Arizona priority one through priority three use increases over time to their respective full entitlement amount, Arizona fourth priority use decreases as does the volume of the Stage 1 Shortage volume. For example, in 2040, when Arizona reaches full entitlement use, priorities one through three are projected to use 1,428,510 af. The remainder of Arizona's apportionment, 1,371,490 af, is subject to a Stage 1 Shortage, in addition to Nevada and Mexico's corresponding potential shortage of 342,872 af. Therefore, the maximum potential Stage 1 Shortage to the Lower Division states and Mexico is 1,714,362 af in 2040. As compared to 2008, the total potential Stage 1 Shortage decreased by over 100,000 af.

G.4.4 General State Assumptions

- ◆ each State is assumed to be using its entire apportionment each year. Because State apportionments are based on consumptive use, all Lower Basin diversion entitlements had to be converted to estimated consumptive use entitlements, adjusted delivery, and shortages. For informational purposes the diversion values are calculated and displayed as well. The conversion ratios are based on actual 2004 Decree Accounting diversion and consumptive use ratios for each Lower Basin entitlement holder;
- ◆ entitlement holders with multiple priorities divert water by their highest (oldest) priority first;
- ◆ the Shortage Allocation Model uses the quantity of water projected to be ordered in a shortage year as a basis for distributing the available water supply to individual users;
- ◆ with the exception of PPRs, all entitlement holders within a priority class share in shortages on a pro-rata basis. Therefore, within any priority class other than PPRs, the Shortage Allocation Model does not consider entitlement dates;
- ◆ PPR holders are assumed to be diverting their full entitlement; and

- ◆ the Shortage Allocation Model does not address current and future paybacks of overruns or underruns under the Inadvertent Overrun and Payback Policy.

G.4.5 Nevada Assumptions

- ◆ the Shortage Allocation Model reflects that Nevada has eight water delivery priorities (see Attachment A, Table Att. A-2), as established in the Robert B. Griffith Water Project Contract No. 7-07-30-W0004 for delivery of Colorado River water signed by the United States and State of Nevada; and
- ◆ in the above contract, it is stated that SNWA is entitled to divert the balance of any remaining un-allocated, unused, and surplus water in Nevada.

G.4.6 California Assumptions

- ◆ the PPRs within California are displayed as having the highest priority in the state relative to the priorities contained in the Seven Party Agreement. The priorities within the Seven Party Agreement do not consider PPRs in California's allocation of 4.4 maf. Reclamation recognizes that the QSA helps California parties to meet the water needs of PPRs by agreeing that certain parties to the Seven Party Agreement would make water available to satisfy the requirements of the PPR holders while keeping the priorities within the Seven Party Agreement intact. In addition, the QSA helped quantify entitlements in the Seven Party Agreement, which is necessary to model shortages. Therefore the Shortage Allocation Model displays the quantified entitlements in the QSA for the Imperial Irrigation District and the Coachella Valley Water District, minus the amount specified for PPR use;
- ◆ additionally, while the Seven Party Agreement is recognized in the Shortage Allocation Model, protection is provided to Seven Party Agreement members with PPRs by making these the highest priority within the state;
- ◆ QSA transfers and exchanges are not modeled in the Shortage Allocation Model, however they are provided in Exhibit B of the QSA (see Attachment F, Table Att. F-2);
- ◆ although the Metropolitan Water District of Southern California (MWD) shows a Seven Party Agreement entitlement of 550,000 af in the Shortage Allocation Model, MWD's "Full Entitlement Use" is assumed to be the calculated entitlement resulting from the balance of California's State apportionment and full entitlement use of higher priorities. During shortage, MWD may acquire a minimum of 25,000 af from the Palo Verde Irrigation District; and
- ◆ to see the estimated entitlements associated with each California entitlement holder, please see Attachment A, Table Att. A-3.

G.4.7 Arizona Assumptions

- ◆ the ADWR Director's Shortage Sharing Workshop Recommendation was submitted to Reclamation in April 2007, and was modeled to show a redistribution of shortages

- to Arizona fourth priority users in accordance with the preference of Arizona cities, CAWCD, and ADWR;
- ◆ the ADWR Director's Shortage Sharing Workshop Recommendation provides that the fourth priority mainstream shortage water supply be calculated by determining the percentage derived by dividing the total fourth priority mainstream diversion entitlement by the available fourth priority consumptive use water supply (absent a shortage), and then multiplying this percentage by the quantity of fourth priority water available in that shortage year. The remaining fourth priority water supply, after the mainstream amount is subtracted, would be available for diversion by the CAP. Based on further telephone conversations with ADWR representatives, the adjusted delivery quantity to mainstream users would be proportionately distributed based on entitlements. If a user is allocated more than it can use under the scheduled use, the remaining balance flows to the CAP, rather than being available to other fourth priority mainstream users. The modeling and distribution of reductions in water deliveries to Arizona and Colorado River water users within Arizona in this Final EIS considers Arizona's shortage strategy; and
 - ◆ all Arizona projected water use schedules in the Shortage Allocation Model were supplied by ADWR (see Appendix D). However, in accordance with ADWR, some of the original schedules were adjusted. The agreed upon changes are as follows:
 - the Cibola Valley Irrigation and Drainage District water contract has recently been split into three separate contracts: Hopi Tribe, Mohave County Water Authority, and Cibola Valley Irrigation and Drainage District. Reclamation developed a separate schedule for each of the three entities rather than showing one schedule for the district;
 - a projected water use schedule for Fort Yuma Indian Reservation in Arizona was added to allow for first priority use in accordance with the Consolidated Decree;
 - some projected water use schedules for entitlement holders were divided among their more specific contract entitlements or water rights;
 - other projected water use schedules for Lake Havasu City, Bullhead City, and the Mohave Water Conservation District were combined with their subcontracted water from the Mohave County Water Authority, so that impacts to these cities may be better assessed; and
 - schedules for Arizona fourth priority entitlement holders were reduced at the advice of ADWR, if they exceeded Reclamation's estimated entitlement computed from the diversion and consumptive use ratios used in the 2004 Decree Accounting.

G.4.8 CAP Framework and Assumptions:

The Shortage Allocation Model considers five priorities within the CAP. Within the Shortage Allocation Model, the most senior CAP priorities are the Ak-Chin Indian Community and several central Arizona cities who receive water secured by the Salt River Pima-Maricopa Indian Community Water Rights Settlement Act of 1988 (CAP 1). The second CAP priority is Municipal and Industrial (M&I) and Indian Priority Water (CAP 2). Next in priority within CAP is non-Indian Agriculture (NIA) Priority Water, which is available to specific M&I, Agricultural, and Indian entitlement holders (CAP 3). CAP excess water that is available to non-Indian agricultural entitlement holders is the next priority (CAP 4). The lowest priority within CAP is the AWBA which receives the balance of unused water in CAP (CAP 5). A diagram of CAP entitlement classes, quantified in units of acre-feet is provided in Table G-2.

Table G-2
CAP Priorities Before and After 2044

Cap Priorities Before 2044 (After Losses)			Total Entitlement by Priority (af)
CAP 5	Arizona Water Bank		Balance
CAP 4	Excess Water for Agriculture		Available
CAP 3	M&I: 148,598 af	Indian: 216,100 af	364,698
CAP 2	M&I: 638,823 af	Indian: 343,079af	Indian 4: 32,770 af 31,970 af (GRIC) 800 af (Tohono O'Odham Nation)
			Indian 3: 11,305 af (GRIC)
			Indian 2: 7,430 af 6,100 af (San Carlos) & 1,330 af (Salt River)
			Indian 1: 291,574 af
CAP 1	Salt River Exchange Cities: 20,900 af	Ak-Chin: 47,500 af (plus up to 10,000 af excess water if available in the CAP canal)	68,400
TOTAL			1,415,000
Cap Priorities After 2044 (After Losses)			Total Entitlement by Priority
CAP 5	Arizona Water Bank		Balance
CAP 4	Excess Water for Agriculture		Available
CAP 3	M&I: 101,295 af	Indian: 216,100 af	317,395

Table G-2
CAP Priorities Before and After 2044

CAP 2	M&I: 686,126 af	Indian: 343,079af	Indian 4: 32,770 af 31,970 af (GRIC) 800 af (Tohono O'Odham Nation)	1,029,205
			Indian 3: 11,305 af (GRIC)	
			Indian 2: 7,430 af 6,100 af (San Carlos) & 1,330 af (Salt River)	
			Indian 1: 291,574 af	
CAP 1	Salt River Exchange Cities: 20,900 af		Ak-Chin: 47,500 af (plus up to 10,000 af excess water if available in the CAP canal)	68,400
TOTAL				1,415,000

It is noted that the water contracting framework for CAP is based on an assumption that at least 1,415,000 af will be available for diversion from the CAP aqueduct in a normal year. This quantity assumes that there is a five percent conveyance loss in the CAP aqueduct. Therefore, 1,490,000 af is required to be available at the CAP pumping plant on the Colorado River. In the event that the priority one, two, and three consumptive use within Arizona (excluding the 68,400 af of priority three water that is included within the CAP supply) exceeds 1,310,000 af of consumptive use in any year, the CAP entitlement holders would receive less than 1,415,000 af and the impact would be absorbed by the lowest CAP priorities. Table G-3 provides a list of specific entitlement holders within each CAP priority.

Table G-3
CAP Entitlements by Priority Prior to 2044

	Entitlement (af)					TOTAL
	CAP 1 (CR)	CAP 2 (M&I / Indian)	CAP 3 (NIA)	CAP 4 (Excess Water)	CAP 5 (Bank)	
Arizona Water Banking Authority					Balance	0
Excess Agricultural Contracts				Available		0
Ak-Chin Indian Community**	47,500	27,500				75,000
Fort McDowell		18,233				18,233
Gila River		191,200	120,600			311,800
TON-Chui Chu		8,000				8,000
TON-San Xavier		27,000	23,000			50,000
TON-Schuk Toak		10,800	5,200			16,000
Pasqua Yaqui		500				500
Salt River		13,300				13,300
San Carlos Apache		43,500				43,500
Tonto Apache		128				128
Yavapai Apache (Camp Verde)		1,200				1,200
Unallocated HVD		1,218				1,218

Table G-3
CAP Entitlements by Priority Prior to 2044

	Entitlement (af)					TOTAL
	CAP 1 (CR)	CAP 2 (M&I / Indian)	CAP 3 (NIA)	CAP 4 (Excess Water)	CAP 5 (Bank)	
Reserved Federal			67,300			67,300
Indian Subtotal	47,500	343,079	216,100	0	0	606,679
Apache Junction (AZ Water Co)		6,000				6,000
Avra Coop		808				808
AZ-American (Agua Fria)		11,093				11,093
AZ-American (Paradise Valley)		3,231				3,231
AZ-American (Sun City)		4,189				4,189
AZ-American (Sun City West)		2,372				2,372
AZ State Land Dept. (9,026 af is used for Agriculture)		32,076	9,026			41,102
ASARCO (Ray Mine)		21,000				21,000
Avondale		5,416				5,416
Bernell Water Co (Cave Creek)		200				200
Buckeye		25				25
Carefree Water Co		1,300				1,300
Casa Grande (AZ Water Co)		8,884				8,884
Cave Creek Water Co		2,406				2,406
CAGR D		7,746				7,746
Chandler*	4,064	8,654	3,924			16,642
Chandler Heights Citrus ID		315				315
Chaparral City Water Co		8,909				8,909
Circle City Water Co		3,932				3,932
Comm. Water Co (Green Valley)		2,858				2,858
Coolidge (AZ Water Co)		2,000				2,000
El Mirage		508				508
Eloy		2,171				2,171
Florence		2,048				2,048
Flowing Wells ID		4,354				4,354
Gilbert	6,424	7,235	1,537			15,196
Glendale	2,850	17,236	682			20,768
Goodyear		10,742				10,742
Green Valley DWID		1,900				1,900
H2O Water Co		147				147
Marana		47				47
Maricopa County Parks & Rec		665				665
Mesa*	2,622	43,503	5,551			51,677
MDWID		13,460				13,460

**Table G-3
CAP Entitlements by Priority Prior to 2044**

	Entitlement (af)					TOTAL
	CAP 1 (CR)	CAP 2 (M&I / Indian)	CAP 3 (NIA)	CAP 4 (Excess Water)	CAP 5 (Bank)	
Oro Valley		10,305				10,305
Peoria		25,236				25,236
Phelps Dodge Miami		2,906				2,906
Phoenix*	4,750	122,120	37,280			164,150
Phoenix Memorial Park		84				84
Pine Water Co		161				161
Queen Creek Water Co		348				348
Rio Verde Utilities		812				812
San Tan ID		236				236
Scottsdale*	95	52,810	3,306			56,211
Spanish Trail Water Co		3,037				3,037
Superior		285				285
Surprise		10,249				10,249
Tempe	95	4,315	23			4,433
Tonto Hills Utility Co		71				71
Tucson		144,172				144,172
Vail Water Co		1,857				1,857
Valley Utilities Water Co		250				250
Water Utilities Comm. Fac. Dist. (AJ)		2,919				2,919
Water Util. Greater Buckeye		43				43
Water Util. Greater Tonopah		64				64
White Tank Sys. (AZ Water Co.)		968				968
San Carlos (Phelps Dodge/Globe)		18,145				18,145
State Reserved			87,269			87,268
M&I Subtotal	20,900	638,823	148,598	0	0	808,321
TOTAL	68,400	981,902	364,698	Available	Balance	1,415,000

*47,303 af of M&I CAP 3 water converts to M&I CAP 2 water on January 1, 2044; 2,952 af is distributed to Chandler, 4,924 af to Mesa, 36,144 af to Phoenix, and 3,283 af to Scottsdale.

** For years in which water is available for banking by the ABWA, up to an additional 10,000 af is available for the Ak-Chin Indian Community pursuant to Section 2(b) of the Ak-Chin Indian Water Rights Settlement Act (Settlement). After the Secretary has met the water delivery obligation to the Ak-Chin Indian Community under the Ak-Chin Water Rights Settlement, any excess water is available for delivery to the San Carlos Apache Tribe. Estimated delivery losses of 4,500 af on the Santa Rosa Canal, incurred in the delivery of water to the Ak-Chin Indian Community, are charged to the Ak-Chin Indian Community's CAP Settlement.

Within the Indian portion of CAP 2 are entitlements in four sub-priorities (Table G-4).

Table G-4
CAP 2 Indian Entitlements by Sub-priority

AWSA Indian Priority Distribution	Entitlement (af)					
	Indian 1		Indian 2	Indian 3	Indian 4	Total
Ak-Chin (27,500 af) & San Carlos (maximum of 30,800 af)*	27,500	24,970	5,830	0	0	58,300
Fort McDowell	18,233		0	0	0	18,233
Gila River	147,925		0	11,305	31,970	191,200
TON-Chui Chu	7,200		0	0	800	8,000
TON-San Xavier	27,000		0	0	0	27,000
TON-Schuk Toak	10,800		0	0	0	10,800
Pasqua Yaqui	500		0	0	0	500
Salt River	11,970		1,330	0	0	13,300
San Carlos Apache	12,430		270	0	0	12,700
Tonto Apache	128		0	0	0	128
Yavapai Apache (Camp Verde)	1,200		0	0	0	1,200
Yavapai Prescott	500		0	0	0	500
Unallocated HVID	1,218		0	0	0	1,218
Total	291,574		7,430	11,305	32,770	343,079

*The Ak-Chin Indian Community is entitled to an additional 10,000 af, not shown, if excess water is available in the CAP canal. After the Secretary has met the water delivery obligation to the Ak-Chin Indian Community under the Ak-Chin Water Rights Settlement, any excess water under the Ak-Chin Indian Community's CAP water delivery contract is available for delivery to the San Carlos Apache Tribe. Estimated delivery losses of six percent or 4,500 af on the Santa Rosa Canal, incurred in the delivery of water to the Ak-Chin Indian Community, are charged to the Community's CAP water delivery contract.

G.4.9 General CAP Assumptions

- ◆ some of the Tribes or Nations lease their CAP water to cities. The Shortage Allocation Model does not address the shortage to the lessee, and assumes that it is up to the Tribe or Nation to administer the terms and conditions of its lease to determine the amount of water available to the lessee in the shortage year;
- ◆ in the projected water use schedules:
 - The original CAP projected water use schedules exceeded the available water for CAP on Arizona schedules, so the CAP projected water use schedules were reduced to keep Arizona within its 2.8 maf apportionment. The following entitlement holders were affected: the AWBA, excess agricultural water users,

and the CAP 3 (NIA) Priority (consisting of Indian, M&I, and Agricultural entitlement holders);

- CAP 3 projected water use scheduled for the Maricopa-Stanfield Irrigation and Drainage District and Central Arizona Irrigation and Drainage District were adjusted from a combined total of 12,000 af to 9,026 af for the Arizona State Land Department to reflect the desire of that entity to subcontract for 9,026 af of CAP 3 priority water for irrigation use. All other agricultural water in the CAP 3 priority has been relinquished by the original subcontractors as part of the AWSA;
- ADWR projected CAP 2 M&I water use to year 2035, at which point almost all entitlement holders were using their full entitlement. With ADWR's concurrence, Reclamation adjusted the 2035 projected water use schedule to show full entitlement use by entitlement holders and extended the 2035 projected water use schedules to later years for which a projected water use schedule had not been available;
- for the Final EIS, CAP 2 schedules for the San Carlos Apache Tribe water rights settlement were adjusted to account for losses on the Santa Rosa Canal of 6 percent or 4,500 af; and
- under the implementing documents for the Salt River Pima Maricopa Indian Community Water Rights Settlement Act of 1988, there is a formula that provides for the distribution of the 20,900 af of acquired CAP 1 priority water among all CAP 2 M&I users during a time of shortage. In non-shortage years, this water is made available only to four Phoenix area cities. Reclamation has been informed that the present formula is inoperable and that a technical correction to the formula will have to be developed and agreed to by the appropriate parties. The Shortage Allocation Model does not attempt to model this element of the Salt River Pima Maricopa Indian Community Water Rights Settlement Agreement.

G.4.10 CAP 2 Shortage Assumptions:

The Shortage Allocation Model uses the following assumptions to allocate available CAP 2 water. These assumptions are based on Reclamation staff interpretation of the CAP shortage compromise that was incorporated as part of the Arizona Water Settlements Act (AWSA).

Step I. Under the AWSA, a CAP shortage exists if:

- ◆ prior to January 1, 2044, there is not enough water available to meet the CAP 2 scheduled water use of 981,902 af (638,823 af for M&I and 343,079 af for Indian); or
- ◆ after January 1, 2044, there is not enough water available to meet the CAP 2 scheduled water use of 1,029,205 af (686,126 af for M&I and 343,079 af for Indian).

Step II. If there is a shortage based on Step I above, the available CAP water is allocated between the CAP 2 M&I and Indian entitlement holders as follows:

- ◆ if the available CAP 2 water supply is less than 981,902 af and greater than 853,079 af, then the water is allocated as follows:
 - prior to January 1, 2044, the water allocated to the Indian portion is equal to 25.4 percent of the available CAP water plus 93,303 af. The remainder is allocated to the M&I priority; and
 - after January 1, 2044, the water allocated to the Indian portion is equal to 18.59 percent of the available CAP water plus 151,691 af. The remainder is allocated to the M&I priority.
- ◆ if the available CAP water is less than 853,079 af (or the sub-priority of Indian 4 has been reduced completely), then 36.38 percent of the available CAP water supply is allocated to the remaining Indian portions of CAP 2, and the remainder is allocated to the M&I portion of CAP 2.

Step III. Distribute the available CAP water to the individual entitlement holders within the M&I and Indian Portions:

- within the M&I priority, the quantity of the available water (determined above) is allocated to each entitlement holder proportionately based on each entitlement holder's scheduled delivery relative to the total delivery schedule; and
- within the Indian portion, the available water supply satisfies Indian sub-priorities in order of highest to lowest (Indian 1 to Indian 4). Within each sub-priority, available water is distributed proportionately to users (Table G-4) based on their scheduled use. A shortage occurs when there is not enough water to satisfy all scheduled users.

G.5 Operation of the Shortage Allocation Model

G.5.1 Operation of Regional and State Shortages

The Shortage Allocation Model is designed to allocate Colorado River water under normal and shortage conditions on the mainstream of the lower Colorado River. The model is operated by entering any normal or shortage volume in the “yellow box” labeled “total reduction” as shown below. Following the yellow box is a brown list-box in which any year between 2008 and 2060 may be selected (see below).

Once the year is selected and processed, the Shortage Allocation Model will collect the projected water use schedules for each Arizona user and determine the point at which a Stage 1 and Stage 2 Shortage will occur as discussed in the assumptions section above.

If a shortage is so severe that Arizona fourth priority users are reduced to a zero acre-foot water delivery, California begins to share in the Stage 2 Shortage. In the example below reflecting a 500,000 and a 1.8 million acre-foot shortage in year 2017, the first simulated shortage is not sufficient to cause a Stage 2 Shortage, while the second is. The simulated reductions to Arizona, Nevada, and Mexico are shown in the far right hand column of Table G-5.

Table G-5
Snapshot from Regional Worksheet

Run Mode	Total Reduction	500,000	PROCESS	
Arizona	2,400,000	400,000		
Nevada	283,333	16,667		
California	4,400,000	0		
Mexico	1,416,667	83,333		

<i>500,000 af Shortage in Year 2017</i>	Shortage Distribution	Consumptive Use Entitlement (af)	Deliverable Consumptive Use (af)	Consumptive Use Reduction (af)
Stage I Shortage		1,729,907	1,229,907	500,000
Mexico	16.67 %	288,318	204,984	83,333
United States				
Arizona	80.00 %	1,383,925	983,925	400,000
Nevada	3.33 %	57,664	40,997	16,667
California	0.00 %	0	0	0
Stage II Shortage (When AZ 4th=0)		7,270,093	7,270,093	0
Mexico	16.67 %	1,211,682	1,211,682	0
United States				
Arizona	19.48 %	1,416,075	1,416,075	0
Nevada	3.33 %	242,336	242,336	0
California	60.52 %	4,400,000	4,400,000	0
Stage I & II Total		9,000,000	8,500,000	500,000

<i>1,800,000 af Shortage in Year 2017</i>	Shortage Distribution	Consumptive Use Entitlement (af)	Deliverable Consumptive Use (af)	Consumptive Use Reduction (af)
Stage I Shortage		1,729,907	0	1,729,907
Mexico	16.67 %	288,318	0	288,318
United States				
Arizona	80.00 %	1,383,925	0	1,383,925
Nevada	3.33 %	57,664	0	57,664
California	0.00 %	0	0	0

Table G-5
Snapshot from Regional Worksheet

Stage II Shortage (When AZ 4th=0)		7,270,093	7,200,000	70,093
Mexico	16.67 %	1,211,682	1,200,000	11,682
United States				
Arizona	19.48 %	1,416,075	1,402,422	13,653
Nevada	3.33 %	242,336	240,000	2,336
California	60.52 %	4,400,000	4,357,578	42,422
Stage I & II Total		9,000,000	7,200,000	1,800,000

The “consumptive use reduction” column above shows the potential Stage 1 and Stage 2 Shortages for each state and Mexico. Given a regional shortage, the following columns show the “Deliverable Consumptive Use” and the “Consumptive Use Reduction”. These values are transferred to each state worksheet. Each state worksheet provides priority and entitlement information, as well as the selected year’s schedules. As seen in Attachment A, Table Att. A-2 through A-4 of the State worksheets, the last two columns show the adjusted delivery and reduction for each entitlement holder. Arizona entitlement holders are reduced from their scheduled use for the selected year. California and Nevada entitlement holders are reduced from full entitlement use, as projected use schedules were not programmed for these States. Shortages are equally shared pro-rata by all the users within the same priority, with the exception of PPRs.

Each State page is strung with formulas to calculate the adjusted delivery and reduction to each priority. For the users within each priority, shortages are simply calculated by subtracting the adjusted delivery from the projected consumptive use schedules (in Arizona and CAP) or full entitlement (in California and Nevada). For the CAP, the formulas are highly complicated and some even require programming due to time dependent changes expressed in the AWSA.

G.5.2 Operation of Arizona and CAP Shortages

In 2017, a simulated shortage of 500,000 af to the Lower Basin States and Mexico reduces users as displayed in Attachment A, Tables Att. A-2 through A-4. Within Arizona the 400,000 af shortage first reduces deliveries to Arizona fifth priorities (which are not modeled because Reclamation did not receive fifth priority schedules). Next, Arizona fourth priority river users are reduced 23 percent and CAP is reduced 29 percent. The available fourth priority CAP water from the Arizona worksheet, minus five percent losses, is inserted into the CAP worksheet. Table G-6 shows the remaining delivery to CAP is 876,371 af (71 percent). The CAP worksheet distributes shortages to CAP entitlement holders, by satisfying the highest CAP entitlement holders first.

The share of the available CAP water from Arizona fourth priority is first allocated to CAP 2 (a detailed description of Indian tribes impacted by the assumed Indian shortage sharing scheme is provided in Section G.4.7 CAP Framework and Assumptions). Based on the process described in Section G.4.7, the following formulas were created to allocate the

proper volume of water to the Indian portion of CAP 2 under shortage conditions, where B6 is the available water for CAP:

$$= \text{IF}(B6 > 981902, 343079, \text{IF}(B6 > 853079, (0.25438 * B6 + 93303), (0.3637518 * B6)))$$

This formula is read as: If the available water supply to CAP is greater than 981,902 af, allocate to the Indian portion of CAP 2 the full entitlement of 343,079 af. If the available water supply is less than 981,902 af and greater than 853,079 af, allocate to the Indian portion 25.44 percent of the available water supply plus an additional 93,303 af. If the available water supply is less than 853,079 af, allocate to the Indian portion 36.38 percent of the available water supply to the CAP.

After 2044, the formula to calculate the CAP Indian priority adjusted entitlement is below, followed by a description:

$$= \text{IF}(B6 > 981902, 343079, \text{IF}(B6 > 853079, (0.1859354 * B6 + 151691), (0.3637518 * B6)))$$

This formula is read as: If the available water supply to CAP fourth priority is greater than 981,902 af, allocate to the Indian portion of CAP 2 the full entitlement of 343,079 af. If the available water supply is less than 343,079 af and greater than 853,079 af, allocate to the Indian portion 18.59 percent of the available water supply plus an additional 151,691 af. If the available water supply is less than 853,079 af, allocate to the Indian portion 36.38 percent of the water available to the CAP.

For example, the adjusted delivery to the M&I portion of CAP 2 is the difference between available water to CAP 2 and the delivery to the Indian portion. CAP 3 and CAP 4 receive the remaining available water, which would be “0” in this example. However, CAP 3 and CAP 4 users are entitled to unused entitlement from CAP 2. Before the unused entitlement is available to CAP 3 and CAP 4 users, M&I and Indian entitlement holders of CAP 2 are permitted to use the other portion’s unused entitlement, which is called “cross-over”.

Table G-6 shows that the M&I portion creates cross-over water, since M&I scheduled use (512,767 af) is less than the M&I entitlements (560,931 af) under the shortage condition. Therefore, 47,370 af of cross-over is available for Indian entitlement holders in the below example. The Indian priority needs to use 16,752 af of the cross-over to meet projected water schedules for 2017. The remaining 30,618 af is available to CAP 3. In this shortage scenario, CAP water is not available to CAP 4 or CAP 5.

Table G-6
2017 Shortage Allocation to CAP Priorities

Fourth Priority Water Available to CAP	876,371	2017			
scheduled use					
CAP 5: Excess for Arizona Water Banking Authority	0	0	0		
CAP 4: Excess for Agriculture Users	0	0	277,891	Non-Indian Portion	Indian Portion
CAP 3: NIA Available and Adjusted Entitlement	0	30,618	→	24,452	6,166
allowed use adj. delivery Scheduled use unused (cross over)					
CAP 2: M&I Available and Adjusted Entitlement	560,137	512,767	512,767	47,370	
CAP 2: Indian Available and Adjusted Entitlement	316,234	332,986	332,986	0	

The above 30,618 af of water allocated to CAP 3 users is distributed below in the “Adjusted Delivery” column of Table G-7. Shortages to all CAP 3 entitlement holders are shown in the last column “Shortage Allocation”.

Table G-7
2017 Shortage Allocation to CAP 3 (NIA Priority)

	Entitlement	Scheduled Use	Adjusted Delivery	Shortage Allocation
Non-Indian Portion				
Chandler	3,924	3,924	1,038	2,886
Gilbert	1,537	1,537	407	1,130
Glendale	682	682	180	502
Mesa	5,551	5,551	1,469	4,082
Phoenix	37,280	37,280	9,866	27,414
Scottsdale	3,306	3,306	875	2,431
Tempe	23	23	6	17
ASLD (Agriculture)	9,026	9,026	2,389	6,637
State Reserved	87,269	31,072	8,223	22,849
Total	148,598	92,401	24,452	67,949
Indian Portion				
Gila River	120,600	0	0	0
TON-San Xavier	23,000	8,972	2,374	6,597
TON-Schuk Toak	5,200	2,028	537	1,492
Reserved Federal	67,300	12,300	3,255	9,045
Total	216,100	23,300	6,166	17,134

The shortage distribution to the M&I portion of CAP 2 under a 500,000 af basin-wide shortage simulated for the year 2017 is shown in Table G-8.

Table G-8
2017 Shortage Allocation to CAP 2 (M&I Portion)

M&I Priority Distribution	Entitlement (af)	Scheduled Use (af)	Adjusted Delivery (af)	Shortage Allocation (af)
Apache Junction (AZ Water Co)	6,000	6,000	6,000	0
Avra Coop	808	0	0	0
AZ-American (Agua Fria)	11,093	11,093	11,093	0
AZ-American (Paradise Valley)	3,231	3,231	3,231	0
AZ-American (Sun City)	4,189	4,189	4,189	0
AZ-American (Sun City West)	2,372	2,372	2,372	0
AZ State Land Dept.	32,076	700	700	0
ASARCO (Ray Mine)	21,000	0	0	0
Avondale	5,416	4,746	4,746	0
Bernell Water Co (Cave Creek)	200	0	0	0
Buckeye	25	0	0	0
Carefree Water Co	1,300	400	400	0
Casa Grande (AZ Water Co)	8,884	2,000	2,000	0
Cave Creek Water Co	2,406	2,048	2,048	0
CAGR D	7,746	7,746	7,746	0
Chandler*	8,654	8,654	8,654	0
Chandler Heights Citrus ID	315	0	0	0
Chaparral City Water Co	8,909	5,705	5,705	0
Circle City Water Co	3,932	0	0	0
Comm. Water Co (Green Valley)	2,858	0	0	0
Coolidge (AZ Water Co)	2,000	0	0	0
El Mirage	508	0	0	0
Eloy	2,171	2,171	2,171	0
Florence	2,048	2,048	2,048	0
Flowing Wells ID	4,354	0	0	0
Gilbert	7,235	7,235	7,235	0
Glendale	17,236	14,183	14,183	0
Goodyear	10,742	10,742	10,742	0
Green Valley DWID	1,900	500	500	0
H2O Water Co	147	0	0	0
Marana	47	0	0	0
Maricopa County Parks & Rec	665	645	645	0
Mesa*	43,503	30,029	30,029	0
MDWID	13,460	10,613	10,613	0
Oro Valley	10,305	10,305	10,305	0

Table G-8
2017 Shortage Allocation to CAP 2 (M&I Portion)

M&I Priority Distribution	Entitlement (af)	Scheduled Use (af)	Adjusted Delivery (af)	Shortage Allocation (af)
Peoria	25,236	19,067	19,067	0
Phelps Dodge Miami	2,906	0	0	0
Phoenix*	122,120	134,120	134,120	0
Phoenix Memorial Park	84	0	0	0
Pine Water Co	161	0	0	0
Queen Creek Water Co	348	348	348	0
Rio Verde Utilities	812	812	812	0
San Tan ID	236	0	0	0
Scottsdale*	52,810	52,810	52,810	0
Spanish Trail Water Co	3,037	0	0	0
Superior	285	0	0	0
Surprise	10,249	10,249	10,249	0
Tempe	4,315	4,315	4,315	0
Tonto Hills Utility Co	71	0	0	0
Tucson	144,172	142,672	142,672	0
Vail Water Co	1,857	0	0	0
Valley Utilities Water Co	250	0	0	0
Water Utilities Comm. Fac. Dist. (AJ)	2,919	50	50	0
Water Util. Greater Buckeye	43	0	0	0
Water Util. Greater Tonopah	64	0	0	0
White Tank Sys. (AZ Water Co.)	968	968	968	0
Subtotal	620,678	512,767	512,767	0
San Carlos Apache Tribe Phelps Dodge/Globe	18,145	0	0	0
Total	638,823	512,767	512,767	0

*47,303 af NIA Priority water converts to M&I Priority on January 1, 2044, and 2,952 af is distributed to Chandler, 4,924 af to Mesa, 36,144 af to Phoenix, and 3,283 af to Scottsdale.

The shortage to the Indian portion of CAP 2 under a 500,000 af basin-wide shortage simulated for the year 2017 is distributed as follows:

Table G-9
2017 Shortage Allocation to CAP 2 (Indian Portion)

AWSA Indian Priority Distribution	Scheduled Use (af)				
	Indian 1	Indian 2	Indian 3	Indian 4	Total
AK-Chin (27,500 af) & San Carlos (estimated maximum of 30,800 af)*	27,500 / 24,970	5,830	0	0	58,300
Fort McDowell	8,140	0	0	0	8,140
Gila River	147,925	0	11,305	31,970	191,200
TON-Chui Chu	7,200	0	0	800	8,000
TON-San Xavier	27,000	0	0	0	27,000
TON-Schuk Toak	10,800	0	0	0	10,800
Pasqua Yaqui	500	0	0	0	500
Salt River	11,970	1,330	0	0	13,300
San Carlos Apache	12,430	270	0	0	12,700
Tonto Apache	128	0	0	0	128
Yavapai Apache (Camp Verde)	1,200	0	0	0	1,200
Yavapai Prescott	500	0	0	0	500
Unallocated HVID	1,218	0	0	0	1,218
Total	281,481	7,430	11,305	32,770	332,986

AWSA Indian Priority Distribution	Adjusted Delivery (af)				
	Indian 1	Indian 2	Indian 3	Indian 4	Total
AK-Chin (27,500 af) & San Carlos (estimated maximum of 30,800 af)*	27,500 / 24,970	5,830	0	0	58,300
Fort McDowell	8,140	0	0	0	8,140
Gila River	147,925	0	11,305	31,970	191,200
TON-Chui Chu	7,200	0	0	800	8,000
TON-San Xavier	27,000	0	0	0	27,000
TON-Schuk Toak	10,800	0	0	0	10,800
Pasqua Yaqui	500	0	0	0	500
Salt River	11,970	1,330	0	0	13,300
San Carlos Apache	12,430	270	0	0	12,700
Tonto Apache	128	0	0	0	128
Yavapai Apache (Camp Verde)	1,200	0	0	0	1,200
Yavapai Prescott	500	0	0	0	500
Unallocated HVID	1,218	0	0	0	0
Total	281,481	7,430	11,305	32,770	332,986

Table G-9
2017 Shortage Allocation to CAP 2 (Indian Portion)

AWSA Indian Priority Distribution	Shortage Allocation (af)				
	Indian 1	Indian 2	Indian 3	Indian 4	Total
AK-Chin (27,500 af) & San Carlos (estimated maximum of 30,800 af)*	0	0	0	0	0
Fort McDowell	0	0	0	0	0
Gila River	0	0	0	0	0
TON-Chui Chu	0	0	0	0	0
TON-San Xavier	0	0	0	0	0
TON-Schuk Toak	0	0	0	0	0
Pasqua Yaqui	0	0	0	0	0
Salt River	0	0	0	0	0
San Carlos Apache	0	0	0	0	0
Tonto Apache	0	0	0	0	0
Yavapai Apache (Camp Verde)	0	0	0	0	0
Yavapai Prescott	0	0	0	0	0
Unallocated HVID	0	0	0	0	0
Total	0	0	0	0	0

**The Ak-Chin Indian Community is entitled to an additional 10,000 af, not shown, if excess water is available in the CAP canal. After the Secretary has met the water delivery obligation to the Ak-Chin Indian Community under the Ak-Chin Water Rights Settlement, any excess water under the Ak-Chin Indian Community's CAP water delivery contract is available for delivery to the San Carlos Apache Tribe. Estimated delivery losses of six percent on the Santa Rosa Canal, incurred in the delivery of water to the Ak-Chin Indian Community, are charged to the Community's CAP water delivery contract.*

A summary of the above CAP shortages is displayed in Attachment A, Table Att. A-5.

G.5.3 Shortage Allocation Model Results

Attachment A provides detailed shortages at the regional, state, and CAP level for a 500,000 af shortage in year 2017. Attachment B displays Arizona and CAP diversion shortages to individual Indian agricultural entitlement holders. Attachment C displays Arizona and CAP diversion shortages to individual non-Indian agricultural entitlement holders. Attachment D displays Arizona and CAP consumptive use shortages to M&I entitlement holders. Attachment E displays a summary of consumptive use shortages to all priorities within the Lower Basin States. Attachment F displays supporting documents to the Shortage Allocation Model.

Shortages generated in Attachments B and C were aggregated by county and class of use for the analysis in Section 4.14 (Socioeconomics). Because some of Arizona's entitlements are shared between agricultural and M&I use, a ratio was developed to split the entitlement for analysis purposes. Thus, for such entitlements, the reduction in agricultural consumptive use is a proportion of the ratio of agricultural use to M&I use permitted in the entitlement

holder's contract. For unquantified contract entitlements, the specified M&I amount in the contract was subtracted from the scheduled use for the selected year.

A summary of shortages generated in Attachment E were used in Section 4.4 (Water Deliveries). All shortages displayed in the tables provided in Attachments B through E were based on the following years: 2008, 2017, 2026, 2027, 2040, and 2060.

G.6 Relationship between CRSS and the Shortage Allocation Model

The CRSS was used to model a variety of river and reservoir parameters in the Colorado River Basin, including shortage amounts, reservoir elevations, and river flows (Section 4.2 and Appendix A). The Shortage Allocation Model provides a more detailed allocation of shortages to the Lower Basin states, specifically to Arizona and the CAP. The Shortage Allocation Model distributes shortages according to the ADWR Director's Shortage Sharing Workshop Recommendation for Arizona and according to the AWSA for the CAP.

In terms of the total Stage 1 and Stage 2 Shortages, CRSS and the Shortage Allocation Model generate similar results. The distribution of Stage 1 Shortages amongst Arizona fourth priority entitlement holder's contrasts between the models as CRSS does not recognize the ADWR Director's Shortage Sharing Workshop Recommendation. When the ADWR Director's Shortage Sharing Workshop Recommendation was incorporated into the Shortage Allocation Model, ADWR requested that fourth priority schedules be adjusted to prevent them from exceeding Reclamation's estimated entitlements displayed in the Shortage Allocation Model. Also, in the Final EIS the Shortage Allocation Model incorporated Brooke Water Company's new contract for 120 af, Mohave County Water Authority's recommended contract of 3,500 af, and the City of Needle's quitclaimed PPR of 1,260 af from Atchison, Topeka, and Santa Fe Railway Company. For these reasons the results in the models differ slightly.

Furthermore, the distribution of shortages analyzed within California and Nevada are slightly different than CRSS, because CRSS uses schedules provided by California and Nevada, while the Shortage Allocation Model assumes entitlement holders in these states are using their full entitlement. This difference can only be seen at the maximum shortages analyzed and varies only slightly. Comparison of the Final EIS results between the two models is provided in Table G-10.

Table G-10
Comparison of CRSS and Shortage Allocation Model Results

Year	User	Shortage Allocation Model	CRSS	Difference (Shortage Allocation Model – CRSS)
2017 (500,000 Acre-Foot Shortage)				
	<u>Mexico</u>	83,333	83,333	0
	<u>Nevada</u>	16,667	16,667	0
	SNWA	16,667	16,667	0
	<u>California</u>	0	0	0
	MWD	0	0	0
	<u>Arizona</u>	400,000	400,000	0
	AZ 4th	400,000	400,000	0
	CAP	382,454	376,200	6,254
	River	17,546	23,800	-6,254
	AZ 2/3	0	0	0
2027 (1,921,236 Acre-Foot Shortage)				
	<u>Mexico</u>	320,206	320,206	0
	<u>Nevada</u>	64,041	64,041	0
	SNWA	64,041	64,041	0
	<u>California</u>	119,475	119,475	0
	MWD	119,475	119,475	0
	<u>Arizona</u>	1,417,514	1,417,514	0
	AZ 4th	1,378,928	1,378,928	0
	CAP	1,297,146	1,292,743	4,403
	River	81,782	86,185	-4,403
	AZ 2/3	38,587	38,587	0

One last difference between CRSS and the Shortage Allocation Model exists. In distributing the available water supply to individual users, CRSS models the quantity of water used by the individual entitlement holder in the previous year. The Shortage Allocation Model uses the quantity of water projected to be ordered in the shortage year as the basis for distributing the available water supply to individual users. In the example above, the Shortage Allocation Model results were computed based on the previous year's use to produce comparable results to CRSS.

Comparison of results generated in the Shortage Allocation Model for the Draft EIS and the Final EIS, is provided in Attachment F, Table Att. F-3. A list of all output and attachments is provided in the table of contents of this appendix.

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Attachment A

Operational Worksheets in the Shortage Allocation Model

This attachment to Appendix G contains tables produced by the Shortage Allocation Model that show the distribution of shortages at the regional and Lower Division state levels, and to the CAP water users based on a 500,000 af Lower Basin shortage for the year 2017.

Table Att. A-1
Operational Worksheet: Region

2017		U.S. & Mexico Shortage Sharing	Consumptive Use Entitlement	Deliverable Consumptive Use	Consumptive Use Reduction	
Stage I Shortage:			1,729,907	1,229,907	500,000	
Mexico		16.67 %	288,318	204,984	83,333	
Arizona		80.00 %	1,383,925	983,925	400,000	
Nevada		3.33 %	57,664	40,997	16,667	
California		0.00 %	0	0	0	
Stage II Shortage (when AZ 4th = 0):			7,270,093	7,270,093	0	
Mexico		16.67 %	1,211,682	1,211,682	0	
Arizona		19.48 %	1,416,075	1,416,075	0	
Nevada		3.33 %	242,336	242,336	0	
California		60.52 %	4,400,000	4,400,000	0	
Stage I & II Total:			9,000,000	8,500,000	500,000	
RUN MODE				TOTAL REDUCTION:	500,000	PROCESS
Arizona				2,400,000	400,000	
Nevada				283,333	16,667	
California				4,400,000	0	
Mexico				1,416,667	83,333	

Table Att. A-2
Operational Worksheet: Nevada

2017 Priority	500,000 Entitlement Holder	Contract No.	Date	Use	ENTITLEMENT		DELIVERY ¹		ADJUSTED DELIVERY		SHORTAGE ALLOCATION	
					Diversion	CU	Diversion	CU	Diversion	CU	Diversion	CU
	State Consumptive Use								300,000	283,333		-16,667
8th - Balance & Surplus	Southern Nevada Water Authority (includes banking)	2-07-30-W0266	1992	M&I	balance + surplus		116,918	70,914	89,440	54,248	-27,479	-16,667
	TOTAL						116,918	70,914	89,440	54,248	-27,479	-16,667
	PERCENT								76%			-24%
8th	Big Bend Water District	2-07-30-W0269	1992	M&I	10,000		10,000	4,251	10,000	4,251	0	0
	Robert B. Griffith Project	7-07-30-W0004	1992	M&I	304,000		304,000	172,070	304,000	172,070	0	0
	Sub. to City of Boulder City (8,918)			M&I						0		
	Sub. to City of Henderson (27,021)			M&I						0		
	Sub. to City of North Las Vegas (26,635)			M&I						0		
	Sub. to Las Vegas Valley Water District (232,426)			M&I						0		
	TOTAL					314,000	0	314,000	176,322	314,000	176,322	0
PERCENT									100%			0%
7th	Boy Scouts of America (annexed by SNWA)	9-07-30-W0011	1978	M&I	10		10	6	10	6	0	0
	Bureau of Reclamation (includes Sportsman Park)	Secretarial Res.	1998	M&I	300		300	188	300	188	0	0
	Nevada Dept. of Wildlife (formerly Nevada Dept of Fish & Game)	14-06-300-2405	1972	M&I		25	1,082	25	1,082	25	0	0
	U.S. Air Force (4,000 af) (Delivery from SNWA)				4,000		4,000	2,264	4,000	2,264	0	0
	TOTAL				310	25	1,392	218	1,392	218	0	0
PERCENT									100%		0%	
6th	Las Vegas Valley Water District	14-06-300-2130	1969	M&I	15,407		15,407	15,407	15,407	15,407	0	0
	TOTAL				15,407	0	15,407	15,407	15,407	15,407	0	0
	PERCENT									100%		0%
5th	Lakeview Company (Hacienda Casino)	14-06-300-1523	1965	M&I	0		0	0	0	0	0	0
	Pacific Coast Building Products, Inc. (PABCO)	5-07-30-W0089	1965	M&I	928		928	928	928	928	0	0
	TOTAL				928	0	928	928	928	928	0	0
PERCENT									100%		0%	
4th	Basic Management, Inc.	14-06-300-2083	1969	M&I	8,608		8,608	8,608	8,608	8,608	0	0
	City of Henderson	0-07-30-W0246	1967	M&I	15,878		15,878	14,700	15,878	14,700	0	0
	TOTAL				24,486	0	24,486	23,308	24,486	23,308	0	0
PERCENT									100%		0%	
3rd	Boulder City	14-06-300-978	1931	M&I	5,876		5,876	3,326	5,876	3,326	0	0
	TOTAL				5,876	0	5,876	3,326	5,876	3,326	0	0
PERCENT									100%		0%	
2nd	Lake Mead National Recreation Area ²	1964 Decree	1930	M&I	unlimited		679	679	679	679	0	0
	TOTAL				0	0	679	679	679	679	0	0
PERCENT									100%		0%	
1st ³	Lake Mead National Recreation Area	PPR 82/1979 Decree	1926	M&I	500	300	500	500	500	500	0	0
	Fort Mohave Indian Reservation	PPR 81	1890	Indian	12,534		12,534	8,398	12,534	8,398	0	0
	TOTAL				13,034	0	13,034	8,898	12,534	8,898	0	0
PERCENT									100%		0%	
Nevada Totals					374,041	325	492,720	300,000	464,741	283,333	-27,479	-16,667
Nevada Percent									94%			-6%

Note: CU means Consumptive Use. All units are in acre-feet per year.
 Subcontracts are displayed below the Entitlement Holder and indented five spaces.
¹2004 Decree Accounting values and Diversion/CU conversion ratios were used to estimate not specified and unquantified entitlements.
²This unlimited entitlement is estimated based on 2004 use.
³In a shortage, PPR's are delivered water in order of priority date regardless of state lines.

Appendix G

**Table Att. A-3
Operational Worksheet: California**

2017	500,000	Contract No.	Date	Use	ENTITLEMENT		DELIVERY ¹		ADJUSTED DELIVERY		SHORTAGE ALLOCATION		
					Diversion	CU	Diversion	CU	Diversion	CU	Diversion	CU	
Priority	Entitlement Holder												
4th	State Consumptive Use							4,400,000		4,400,000		0	
	Metropolitan Water District of Southern California (4)	I1r-645	1930, 1931	M&I		550,000	450,412	450,412	450,412	450,412	0	0	
	TOTAL				0		450,412	2	450,412		0	0	
	PERCENT									100%		0%	
3rd	Palo Verde Irrigation District (3b) - Lower Palo Verde Mesa Lands	PVID20733C_P5	1933	Agricultural	≤16,000 acres	Unquantified	26,909	11,460	26,909	11,460	0	0	
	Coachella Valley Water District (3a) ²	I1r-781	1934	Agricultural		330,000	336,973	327,000	336,973	327,000	0	0	
	Imperial Irrigation Districts (3a) ³	I1r-747	1932	Agricultural		572,659	577,674	561,159	577,674	561,159	0	0	
	TOTAL					902,659	941,555	899,619	941,555	899,619	0	0	
PERCENT									100%		0%		
2nd	Yuma Project, Reservation Division ⁴ (includes Bard, Indian, Island ⁵)	Water Certificates ⁵	1905	Indian/Agricultural	≤25,000 acres		13,644	7,545	13,644	7,545	0	0	
	TOTAL				0	0	13,644	7,545	13,644	7,545	0	0	
	PERCENT									100%		0%	
1st	Palo Verde Irrigation District - Valley Lands (1) ⁶	PVID20733C_P2	1933	Agricultural	≤104,500 acres	Unquantified	749,260	319,099	749,260	319,099	0	0	
	TOTAL				0	0	749,260	319,099	749,260	319,099	0	0	
	PERCENT									100%		0%	
PPR's ⁷	One Acre PPR's	PPR's 45-80	1895-1928	M&I	36	21.6	36	22	36	22	0	0	
	Sonny Gowan (Grannis)	PPR 32 & 7-07-30-W0158	1928	Agricultural	180		180	108	180	108	0	0	
	Chagnon	PPR No. 41	1925	Agricultural	120		120	72	120	72	0	0	
	Stephenson	PPR No. 30	1923	Agricultural	240		240	144	240	144	0	0	
	Colorado River Sportsmen's League	PPR No. 36	1921	Agricultural	96		96	58	96	58	0	0	
	Andrade (AKA Andrade, Andrews, Bly, Brown, Carney, Daniel, Fairbanks, Glynn, Lindeman, Leon, Schroeder, Sherman, Perrett, Wetmore, Williams)	PPR No. 38	1921	M&I/Agricultural	66		66	47	66	47	0	0	
	Milpitas	PPR No. 34	1918	Agricultural	108		108	65	108	65	0	0	
	Lawrence	PPR No. 42	1915	Agricultural	120		120	72	120	72	0	0	
	Milpitas	PPR No. 37	1914	Agricultural	69		69	41	69	41	0	0	
	Morgan	PPR No. 33	1913	Agricultural	150		150	90	150	90	0	0	
	Chemehuevi Indian Reservation	PPR No. 22	2/2/1907	Indian	11,340	or if less, irrigation for 1,900 acres	11,340	6,094	11,340	6,094	0	0	
	Cooper	PPR No. 40	1905	Agricultural	60		60	36	60	36	0	0	
	Yuma Project, Reservation Division (non-Indian portion)	PPR 28 & Water Cert.	7/8/1905	Indian/Agricultural	38,270	or if less, irrigation for 6,294 acres	38,270	17,918	38,270	17,918	0	0	
	Reynolds	PPR No. 39	1904	Agricultural	36		36	22	36	22	0	0	
	Imperial Irrigation District (includes lands in CVWD)	PPR No. 27	1901	Agricultural	2,600,000	or if less, irrigation for 424,145 acres	2,600,000	2,527,341	2,600,000	2,527,341	0	0	
	Needles (formerly Atchison, Topeka, and Santa Fe Railway Co.)	PPR No. 44	1896	M&I	1,260		273	1,260	273	1,260	273	0	0
	Picacho Development Corp and CA Department of Parks and Recreation	PPR 31 & 8-07-30-W0187	1893	Agricultural	120		120	66	120	66	0	0	
Fort Mohave Indian Reservation	PPR No. 25	9/18/1890	Indian	16,720	or if less, irrigation for 2,587 acres	16,720	8,994	16,720	8,994	0	0		
Simons	PPR No. 35	1889	Agricultural	60		60	36	60	36	0	0		
City of Needles	PPR No. 43/5-XX-30-W0445	1885	M&I	1,500		950	1,500	950	1,500	950	0	0	
Fort Yuma Indian Reservation	PPR No. 23	1/9/1884	Indian	71,616	or if less, irrigation for 10,742 acres	71,616	34,506	71,616	34,506	0	0		
Palo Verde Irrigation District	PPR No. 26	1877	Agricultural	219,780	or if less, irrigation for 33,604 acres	219,780	93,601	219,780	93,601	0	0		

**Table Att. A-3
Operational Worksheet: California**

2017 Priority	500,000 Entitlement Holder	Contract No.	Date	Use	ENTITLEMENT		DELIVERY ¹		ADJUSTED DELIVERY		SHORTAGE ALLOCATION	
					Diversion	CU	Diversion	CU	Diversion	CU	Diversion	CU
	Colorado River Indian Reservation	PPR No. 24	5/15/1876	Indian	5,860	or if less, irrigation for 879 acres	5,860	3,324	5,860	3,324	0	0
	Colorado River Indian Reservation	PPR No. 24	11/16/1874	Indian	40,241	or if less, irrigation for 6,037 acres	40,241	22,823	40,241	22,823	0	0
	Colorado River Indian Reservation	PPR No. 24	10/22/1873	Indian	10,745	or if less, irrigation for 1,612 acres	10,745	6,094	10,745	6,094	0	0
	Yuma Associates LTD and Winterhaven Water District (262.8 M&I)	PPR 29 & 4-07-30-W0053	1856	M&I/Agricultural	780		780	528	780	528	0	0
	TOTAL				3,019,573	1,245	3,019,573	2,723,325	3,019,573	2,723,325	0	0
	PERCENT									100%		0%
	CALIFORNIA TOTALS				3,019,598	2,706,926	5,174,444	4,400,000	5,174,444	4,400,000	0	0
	CALIFORNIA PERCENT								100%			0%

Note: CU means Consumptive Use; all units are in AFY (acre-feet annually).

These priorities are based on the California Seven Party Agreement, modified to include the PPR's identified by the Consolidated Decree.

Forbearances and transfers are displayed in Appendix G, Attachment 6, Table Att. 6-3

The Lower Colorado Water Supply Project exchanges non-project water for Colorado River water. During a declared shortage on the Colorado River, the Colorado Water Supply Project would not be shorted.

¹2004 Decree Accounting values and Diversion/CU conversion ratios were used to estimate not specified and unquantified entitlements. Consumptive use on Lower Palo Verde Mesa lands assumed to be equal to 2007 Palo Verde Irrigation District request. PVID's estimated entitlement is based on 2004 Decree Accounting use.

²Coachella Valley Water District's estimated entitlement shown in this table is reduced by 3,000 af to permit the Secretary of the Interior to satisfy PPR use not covered by the Seven Party Agreement.

³IID's PPR protects 2,600,000 acre-feet of its Seven Party 3rd priority diversion entitlement, which is consumptively estimated to be 2,527,341 af. IID's 3rd priority estimated entitlement shown in this table is reduced by the PPR right and 11,500 af to permit the Secretary of the Interior to satisfy PPR use not covered by the Seven Party Agreement.

⁴A portion of this Seven Party Agreement entitlement is shown below under two separate PPR entitlements, the Fort Yuma Indian Reservation (PPR 23) and the Yuma Project, Reservation Division (PPR 28).

⁵Incorporation of Yuma Island pumps' use within this priority does not represent either a final approval of this use by Reclamation or a final determination of the appropriate Decree accounting for this use; and is not an admission by any Colorado River contractor as to the legality of this use or diversion of Colorado River water. No Water Certificates have been issued for use of water on the Yuma Island in California.

⁶PVID's PPR protects 219,780 af of its Seven Party 1st priority diversion entitlement, which is consumptively estimated to be 93,601. Dependent upon call, PVID will fallow a minimum of 25,000 af for the Metropolitan Water District of Southern California.

⁷In a shortage, PPRs are delivered water in order of priority date regardless of state lines. It is assumed that each PPR holders would divert and consumptively use all of its entitlement by 2017.

Appendix G

Attachment A
Shortage Allocation
Model Documentation

Table Att. A-4
Operational Worksheet: Arizona

2017	500,000				ENTITLEMENT ¹ (estimated)		SCHEDULED USE		ADJUSTED DELIVERY		SHORTAGE ALLOCATION	
Priority	Entitlement Holder	Contract No.	Date	Use	Diversion	CU	Diversion	CU	Diversion	CU	Diversion	CU
	State Consumptive Use							2,800,000		2,400,000		400,000
	Arizona State Land Department	7-07-30-W0358	2004	M&I	1,534	997	817	531	817	531	0	0
	Arizona State Land Department	4-07-30-W0317	1999	Agricultural	6,607	4,294	6,607	4,294	4,697	3,053	-1,909	-1,241
	Arizona State Parks Board - Contact Point	(Recommendation)		M&I	20	20	13	13	13	13	0	0
	Arizona State Parks Board - Windsor Beach	7-07-30-W0364	1998	M&I	90	58	31	20	31	20	0	0
	Arizona-American Water Company	00-XX-30-W0391	2001	M&I	1,420	922	463	300	463	300	0	0
	Beattie Farms Southwest	06-XX-30-W0446	2006	Agricultural	1,110	722	1,110	722	789	513	-321	-209
	Brooke Water Company (formerly Graham)	4-07-30-W0444	1983/2007	M&I	440	294	79	53	79	53	0	0
	Bullhead City (includes subcontract w/ MCWA of 6,000)	2-07-30-W0273	1982	M&I	21,210	14,208	13,025	8,725	13,025	8,725	0	0
	Bureau of Land Management ⁴ (Estimated diversion entitlement of 6,171 af)	8-07-30-W0373	1973/81/87	M&I	6,171	4,010	1,309	851	1,309	851	0	0
	CHACHA, LLC (formerly Curtis Family Trust)	(Recommendation)		Agricultural	2,100	1,365	2,100	1,365	1,493	970	-607	-395
	B&F Investment, LLC	06-XX-30-W0453	1983	M&I	60	60	0	0	0	0	0	0
	Cibola Valley Irrigation & Drainage District (M&I: 300)	2-07-30-W0028	1983	M&I/Agricultural	12,066	8,627	10,842	7,752	8,579	6,134	-2,264	-1,619
	City of Somerton	03-XX-30-W0419	2006	M&I	750	488	751	488	533	347	-218	-141
	City of Yuma (Smucker Park)	14-06-303-2702	1969	M&I	33	22	0	0	0	0	0	0
	Cocopah Indian Reservation	1974 Decree	1974	Indian	2,026	1,989	1,362	1,337	1,362	1,337	0	0
	Crystal Beach Water Conservation District	6-07-30-W0352	1997	M&I	132	86	106	69	94	61	-12	-8
	Curtis, Armon (Curry Family LTD)	3-07-30-W0037	1983	Agricultural	300	195	300	195	213	139	-87	-56
	Desert Lawn Memorial Park Association, Inc.	14-06-300-2587	1975	M&I	360	244	22	15	22	15	0	0
	Ehrenburg Improvement District	8-07-30-W0006	1977	M&I	500	358	500	358	355	255	-144	-103
	Fisher's Landing Water and Sewer Works, LLC	6-XX-30-W0450	2007	M&I	53	34	52	34	38	24	-15	-10
	Gila Monster Farms (formerly Sturges Farms Inc.)	6-07-30-W0337	1997	Agricultural	1,435	775	1,436	775	1,020	551	-416	-224
	Gold Dome Mining Corporation	0-07-030-W0250	1990	M&I	7	5	0	0	0	0	0	0
	Gold Standard Mines Corporation	3-07-30-W0038	1983	M&I	75	49	0	0	0	0	0	0
	Golden Shores Water Conservation District	9-07-30-W0203	1989	M&I	2,000	1,339	759	508	759	508	0	0
	Hillcrest Water Company	5-07-30-W0078	1985	M&I	84	55	56	36	56	36	0	0
	Hopi Tribe	04-XX-30-W0432	1983	Indian	5,997	3,898	5,898	3,834	4,264	2,772	-1,634	-1,062
	JRS Partners LLC (formerly Jessen Family Limited)	06-XX-30-W0448	2007	Agricultural	1,080	702	1,080	702	768	499	-312	-203
	Lake Havasu City (includes subcontract w/ MCWA of 6,000 af)	3-07-30-W0039	1995	M&I	25,180	15,617	24,264	15,043	17,902	11,099	-6,361	-3,944
	Marble Canyon Company, Inc.	5-07-30-W0322	1996	M&I	70	45	24	16	24	16	0	0
	Martinez Lake Cabin Sites	(Recommendation)		M&I	23	15	23	15	16	11	-7	-4
	McAlister, Maurice L.	7-07-30-W0355	1998	M&I	40	26	6	4	6	4	0	0
	Mohave County Water Authority	04-XX-30-W0431	1983	Agricultural	5,997	3,898	5,898	3,834	4,264	2,772	-1,634	-1,062
	Mohave County Water Authority	5-07-30-W0320	1968	M&I	3,500	2,275	3,500	2,275	2,488	1,618	-1,011	-657
	Subcontracts to Arizona-American Water Co. (900 af)								0	0		
	Subcontracts to MVIDD (380 af & 600 af)								0	0		
	Mohave Valley Irrigation and Drainage District (8,000 af M&I)	14-06-W-204	1968	M&I/Agricultural	35,060	18,933	35,060	18,933	24,927	13,461	-10,133	-5,472
	Mohave Water Conservation District (includes subcontract w/ MCWA of 3,000 af)	9-07-30-W0012	1968	M&I	4,800	3,218	928	622	928	622	0	0
	North Baja LLC (formerly Jamar Produce) (72 af M&I)	5-07-30-W0066	1984	M&I/Agricultural	480	337	480	337	341	240	-138	-97
	Ogram Boys Enterprises	1-XX-30-W0402	2005	Agricultural	924	601	925	601	657	427	-268	-174
	Ogram, George	01-XX-30-W0398	2003	Agricultural	480	312	480	312	341	222	-139	-90
	Pasquinielli, Gary and Barbara (formerly Ansel Hall)	5-07-30-W0065	1986	Agricultural	486	316	486	316	346	225	-141	-91
	Peach, John	(Recommendation)		Agricultural	456	296	455	296	324	211	-131	-85
	Phillips, Milton and Jean	(Recommendation)		Agricultural	18	12	18	12	13	8	-6	-4
	Rayner Ranches	5-07-30-W0064	1984	Agricultural	4,500	2,924	4,500	2,924	3,199	2,079	-1,300	-845
	Reserved Secretary Water for Indian Settlements				3,500	2,275	0	0	0	0	0	0
	Roy, Edward P. & Anna R.	6-07-30-W0124	1986	M&I	1	1	2	1	1	0	-1	-1
	Shepard Water Company	(Recommendation)		M&I	50	33	50	33	36	23	-14	-9

4th (River Users)

**Attachment A
Shortage Allocation
Model Documentation**

Appendix G

**Table Att. A-4
Operational Worksheet: Arizona**

2017	500,000				ENTITLEMENT ¹ (estimated)		SCHEDULED USE		ADJUSTED DELIVERY		SHORTAGE ALLOCATION	
Priority	Entitlement Holder	Contract No.	Date	Use	Diversion	CU	Diversion	CU	Diversion	CU	Diversion	CU
	City of Parker	2-07-30-W0025	1998	M&I	1,030	390	1,030	390	732	277	-298	-113
	Town of Quartzsite	7-07-30-W0353	1999	M&I	1,070	1,070	409	409	409	409	0	0
	Verizon (formerly Continental Telephone)	14-06-300-2506	1974	M&I	1	7	2	1	1	0	-1	-1
	Unallocated Priority 4 Water			M&I	9,326	6,062	0	0	0	0	0	0
	TOTAL River Users				164,652	104,464	127,256	79,350	97,734	61,429	-29,522	-17,921
	PERCENT								77%	77%	-23%	-23%
4th (CAP)	Central Arizona Water Conservation District (CAP) ³	14-06-W-245	1972	M&I/Agricul tural/Indian	AZ Balance	AZ Balance	1,304,575	1,304,575	922,496	922,496	-382,079	-382,079
	TOTAL CAP						1,304,575	1,304,575	922,496	922,496	-382,079	-382,079
	PERCENT								71%	71%	-29%	-29%
4th	TOTAL 4th Priority						1,431,832	1,383,925	1,020,231	983,925	-411,601	-400,000
	PERCENT								71%	71%	-29%	-29%
	Cibola National Wildlife Refuge (2nd Priority)	Secretarial Res.	8/21/1964	M&I	34,500	or if less, 16,793	13,692	8,505	13,692	8,505	0	0
	Yuma Irrigation District (5,000 af M&I) (2nd Priority)	14-06-300-1270	1962	M&I/Agricul tural		67,278	72,177	32,860	72,177	32,860	0	0
	National Park Service (2nd Priority)	1964 Decree	1961	M&I	unquantified		738	738	738	738	0	0
	Yuma Union High School (3rd Priority)	14-06-303-179	1960	M&I	200		157	117	157	117	0	0
	Union Pacific Railroad (formerly Southern Pacific Co.) (3rd Priority)	14-06-303-1524	12/21/1959	M&I	48		59	29	59	29	0	0
	Kaman, Inc. (3rd Priority)	14-06-303-1555	12/2/1959	M&I	2		0	0	0	0	0	0
	City of Yuma (3rd Priority)	14-06-W-106	11/12/1959	M&I		48,522	43,445	28,852	43,445	28,852	0	0
	Department of Navy MCAS (2nd Priority)	14-06-300-937	1/1/1959	M&I	3,000		2,129	2,129	2,129	2,129	0	0
	Yuma County Water Users' Association (14,701 af M&I) (2nd Priority)	14-06-300-621 & Certificates	1957	M&I/Agricul tural	unquantified		0		0	0	0	0
	Yuma Area Office (489.95 af M&I Conversion)					490			0	0	0	0
	City of Yuma (cemetery) (3rd Priority)	14-06-303-1078	11/12/1956	M&I	60		0	0	0	0	0	0
	Yuma Mesa Fruit Growers (3rd Priority)	14-06-303-1196	10/1/1956	Agricultural	15		12	12	12	12	0	0
	Yuma Mesa Irrigation & Drainage District (10,000 af M&I) (2nd Priority)	14-06-W102	5/26/1956	M&I/Agricul tural		141,519	307,476	159,354	307,476	159,354	0	0
	Desert Lawn Memorial Park (3rd Priority)	14-06-300-1079	5/1/1956	M&I	200		207	140	207	140	0	0
	Ak-Chin Indian Community ³ (2nd Priority)	AK-CHIN121180A	1/1/1956	Indian	50,000		50,000	50,000	50,000	50,000	0	0
	University of Arizona (3rd Priority)	14-06-300-144	1954	Agricultural	1,088		840	840	840	840	0	0
	Yuma Mesa Grapefruit Company (Camille Allec Jr.) (3rd Priority)	14-06-303-528	12/23/1953	Agricultural	120		84	60	84	60	0	0
	North Gila Valley Irrigation District (2,500 af M&I) (2nd Priority)	14-06-W-54	5/12/1953	M&I/Agricul tural		41,203	0		0	0	0	0
	Yuma Auxiliary Project (Unit B) (2nd Priority)	14-06-300-44	12/22/1962	Agricultural	unquantified		21,499	12,973	21,499	12,973	0	0
	Wellton-Mohawk Irrigation and Drainage District (5,000 af M&I) (2nd Priority)	1-07-30-W0021	3/4/1952	M&I/Agricul tural		278,000	441,740	277,997	441,740	277,997	0	0
	Chandler (Salt River Pima-Maricopa Exchange) ³ (2nd Priority)	Salt River Settlement	3/4/1952	M&I	4,278		4,278	4,278	4,278	4,278	0	0
	Gilbert (Salt River Pima-Maricopa Exchange) ³ (2nd Priority)	Salt River Settlement	3/4/1952	M&I	6,762		6,762	6,762	6,762	6,762	0	0
	Glendale (Salt River Pima-Maricopa Exchange) ³ (2nd Priority)	Salt River Settlement	3/4/1952	M&I	3,000		3,000	3,000	3,000	3,000	0	0
	Mesa (Salt River Pima-Maricopa Exchange) ³ (2nd Priority)	Salt River Settlement	3/4/1952	M&I	2,760		2,760	2,760	2,760	2,760	0	0
	Phoenix (Salt River Pima-Maricopa Exchange) ³ (2nd Priority)	Salt River Settlement	3/4/1952	M&I	5,000		5,000	5,000	5,000	5,000	0	0
	Scottsdale (Salt River Pima-Maricopa Exchange) ³ (2nd Priority)	Salt River Settlement	3/4/1952	M&I	100		100	100	100	100	0	0
	Tempe (Salt River Pima-Maricopa Exchange) ³ (2nd Priority)	Salt River Settlement	3/4/1952	M&I	100		100	100	100	100	0	0
	Gila Monster Farms (formerly Sturges) (3rd Priority)	6-07-30-W0337	1/1/1952	Agricultural	6,285		6,670	3,600	6,670	3,600	0	0
	Sturges, Harold (2nd Priority)	I76R-733	1/1/1952	Agricultural	0		0		0	0	0	0
	Sturges, Irma (2nd Priority)	I76R-735	1/1/1952	Agricultural	0		0		0	0	0	0
	Department of Army - Yuma Proving Ground (2nd Priority)	I76-696	1951	M&I	1,129		760	760	760	760	0	0
	Bureau of Reclamation - Davis Dam (2nd Priority)	Secretarial Res.	4/26/1941	M&I	100		1	1	1	1	0	0
	Imperial National Wildlife Refuge (2nd Priority)	1964 Decree	2/14/1941	M&I	28,000	or if less, 23,000	5,831	3,618	5,831	3,618	0	0
	Havasu Lake National Wildlife Refuge (2nd Priority)	1964 Decree	1/22/1941	M&I	41,839	or if less, 37,399	42,279	4,841	42,279	4,841	0	0
	TOTAL				189,076	576,522	1,031,796	609,426	1,031,796	609,426	0	0

2nd & 3rd (co-equal)

**Attachment A
Shortage Allocation
Model Documentation**

Appendix G

Table Att. A-4
Operational Worksheet: Arizona

2017 Priority	500,000 Entitlement Holder	Contract No.	Date	Use	ENTITLEMENT ¹ (estimated)		SCHEDULED USE		ADJUSTED DELIVERY		SHORTAGE ALLOCATION		
					Diversion	CU	Diversion	CU	Diversion	CU	Diversion	CU	
	PERCENT									100%		0%	
1st (PPR's) ²	Molina	PPR No. 15	1928	Agricultural	318		0	0	0	0	0	0	
	Gila Monster Farms (formerly Sturges)	PPR No. 16	1925	Agricultural	780		1,445	780	1,445	780	0	0	
	Cocopah Indian Reservation	PPR No. 1	9/27/1917	Indian	7,681		6,950	6,792	6,950	6,792	0	0	
	Cocopah Indian Reservation	PPR No. 8	1915	Indian	1,140		1,031	1,008	1,031	1,008	0	0	
	Powers (Power, R.E. & P.)	PPR No. 7	1915	Agricultural	960		960	624	960	624	0	0	
	Zozaya (in MVIDD)	PPR No. 17	1912	Agricultural	720		720	389	720	389	0	0	
	Fort Mohave Indian Reservation	PPR No. 3	2/2/1911	Indian	75,566		98,653	53,280	98,653	53,280	0	0	
	Brooke Water Company (formerly Graham)	PPR No. 9	1910	M&I	360		361	241	361	241	0	0	
	North Gila Valley Irrigation District	PPR No. 6	7/8/1905	Agricultural	24,500		85,059	19,761	85,059	19,761	0	0	
	Yuma Auxiliary Project (Unit B)	PPR No. 5 & Certificates	7/8/1905	Agricultural	6,800		11,269	6,800	11,269	6,800	0	0	
	City of Parker	PPR No. 20	1905	M&I	630	or if less, 400	1,057	400	1,057	400	0	0	
	Hulet (in MVIDD)	PPR No. 10	1902	Agricultural	1,080		1,080	583	1,080	583	0	0	
	Hoover (in MVIDD/formerly Hopal)	4-07-30-W0052/PPR 11	1902	Agricultural	1,050		1,050	567	1,050	567	0	0	
	Miller (in MVIDD)	PPR No. 12	1902	M&I	240		240	130	240	130	0	0	
	McKellips and Granite Reef Farms (in MVIDD)	PPR No. 13	1902	Agricultural	810		810	437	810	437	0	0	
	Shenil & Lafollette (in MVIDD)	PPR No. 14	1902	Agricultural	1,080		1,080	583	1,080	583	0	0	
	Swan (in MVIDD)	PPR No 18	1902	M&I	960		960	518	960	518	0	0	
	Yuma County Water Users' Association	PPR No. 4 & Certificates	1901	Agricultural	254,200		357,227	228,368	357,227	228,368	0	0	
	Phillips, Milton and Jean	PPR No. 19	1900	Agricultural	42		0	0	0	0	0	0	
	City of Yuma	PPR No. 21	1893	M&I	2,333	or if less, 1,478	2,350	1,489	2,350	1,489	0	0	
	Fort Mohave Indian Reservation	PPR No. 3	9/18/1890	Indian	27,969		36,514	19,720	36,514	19,720	0	0	
	Fort Yuma Indian Reservation (new entitlement)	PPR No. 3a	1/9/1884	Indian	6,350		1,812	1,178	1,812	1,178	0	0	
	Colorado River Indian Reservation	PPR No. 2	11/16/1874	Indian	51,986		64,947	36,337	64,947	36,337	0	0	
	Colorado River Indian Reservation	PPR No. 2	11/22/1873	Indian	252,016		314,848	176,152	314,848	176,152	0	0	
	Colorado River Indian Reservation	PPR No. 2	3/3/1865	Indian	358,400		447,755	250,511	447,755	250,511	0	0	
	TOTAL					11,077,971		1,438,179	806,649	1,438,179	806,649	0	0
		PERCENT									100%		0%
		ARIZONA TOTALS						3,901,806	2,800,000	2,490,205	2,400,000	-411,601	-400,000
		ARIZONA TOTAL PERCENT									86%		-14%

Note: CU means Consumptive Use; all units are in AFY (acre-feet annually).
Subcontracts are displayed below the Entitlement Holder and indented five spaces.
¹2004 Decree Accounting values and Diversion/CU ratios were used to estimate not specified and unquantified entitlements.
²In a shortage, PPR's are delivered water in order of priority date regardless of state lines.
³These CAP users are subject to CAP conveyance losses which are assumed to be 5 percent.
⁴BLM Diversion entitlement is estimated from Consumptive Use Entitlement based on 2004 Decree Accounting.

Table Att. A-5
Operational Worksheet: CAP

Year: 2017																								
Lower Basin Shortage: 500,000																								
	Entitlement					Scheduled Use					Adjusted Delivery					Shortage Allocation								
	CAP 1 (CR)	CAP 2 (M&I / Indian)	CAP 3 (NIA)	CAP 4 (Excess Agricultural)	CAP 5 (AWBA)	TOTAL	CAP 1 (CR)	CAP 2 (M&I / Indian)	CAP 3 (NIA)	CAP 4 (Excess Agricultural)	CAP 5 (AWBA)	TOTAL	CAP 1 (CR)	CAP 2 (M&I / Indian)	CAP 3 (NIA)	CAP 4 (Excess Agricultural)	CAP 5 (AWBA)	TOTAL	CAP 1 (CR)	CAP 2 (M&I / Indian)	CAP 3 (NIA)	CAP 4 (Excess Agricultural)	CAP 5 (AWBA)	TOTAL
Excess Water for ABWA					Balance					0							0						0	
Excess Water for Agriculture				Available	0				277,891			277,891				0						277,891		277,891
Ak-Chin Indian Community**	47,500	27,500			75,000	47,500	27,500					75,000	47,500	27,500				75,000	0	0				0
Fort McDowell		18,233			18,233		8,140					8,140		8,140				8,140						0
Gila River		191,200	120,600		311,800		191,200	0				191,200		191,200	0			191,200		0				0
TON-Chui Chu		8,000			8,000		8,000					8,000		8,000				8,000						0
TON-San Xavier		27,000	23,000		50,000		27,000	8,972				35,972		27,000	2,374			29,374		0	6,597			6,597
TON-Schuk Toak		10,800	5,200		16,000		10,800	2,028				12,828		10,800	537			11,337		0	1,492			1,492
Pasqua Yaqui		500			500		500					500		500				500						0
Salt River		13,300			13,300		13,300					13,300		13,300				13,300						0
San Carlos Apache**		39,000			39,000		39,000					39,000		39,000				39,000						0
Tonto Apache		128			128		128					128		128				128						0
Yavapai Apache (Camp Verde)		1,200			1,200		1,200					1,200		1,200				1,200						0
Yavapai Prescott		500			500		500					500		500				500						0
Unallocated HVID		1,218			1,218		1,218					1,218		1,218				1,218						0
Reserved Federal			67,300		67,300			12,300				12,300			3,255			3,255				9,045		9,045
Indian Subtotal:	47,500	338,579	216,100	0	602,179	47,500	328,486	23,300	0		399,286	47,500	328,486	6,166	0			382,152	0	0	17,134	0		17,134
Apache Junction (AZ Water Co)		6,000			6,000		6,000					6,000		6,000				6,000						0
Avra Coop		808			808		0					0		0				0						0
AZ-American (Agua Fria)		11,093			11,093		11,093					11,093		11,093				11,093						0
AZ-American (Paradise Valley)		3,231			3,231		3,231					3,231		3,231				3,231						0
AZ-American (Sun City)		4,189			4,189		4,189					4,189		4,189				4,189						0
AZ-American (Sun City West)		2,372			2,372		2,372					2,372		2,372				2,372						0
AZ State Land Dept. (9,026 is Agricultural)		32,076	9,026		41,102		700	9,026				9,726		700	2,389			3,089		0	6,637			6,637
ASARCO (Ray Mine)		21,000			21,000		0					0		0				0						0
Avondale		5,416			5,416		4,746					4,746		4,746				4,746						0
Berneil Water Co (Cave Creek)		200			200		0					0		0				0						0
Buckeye		25			25		0					0		0				0						0
Carefree Water Co		1,300			1,300		400					400		400				400						0
Casa Grande (AZ Water Co)		8,884			8,884		2,000					2,000		2,000				2,000						0
Cave Creek Water Co		2,406			2,406		2,048					2,048		2,048				2,048						0
CAGR D		7,746			7,746		7,746					7,746		7,746				7,746						0
Chandler*	4,064	8,654	3,924		16,642	4,064	8,654	3,924				16,642	4,064	8,654	1,038			13,757	0	0	2,886			2,886
Chandler Heights Citrus ID		315			315		0					0		0				0						0
Chaparral City Water Co		8,909			8,909		5,705					5,705		5,705				5,705						0
Circle City Water Co		3,932			3,932		0					0		0				0						0
Comm. Water Co (Green Valley)		2,858			2,858		0					0		0				0						0
Coolidge (AZ Water Co)		2,000			2,000		0					0		0				0						0
El Mirage		508			508		0					0		0				0						0
Eloy		2,171			2,171		2,171					2,171		2,171				2,171						0
Florence		2,048			2,048		2,048					2,048		2,048				2,048						0
Flowing Wells ID		4,354			4,354		0					0		0				0						0
Gilbert	6,424	7,235	1,537		15,196	6,424	7,235	1,537				15,196	6,424	7,235	407			14,066	0	0	1,130			1,130

Appendix G

Attachment A
Shortage Allocation
Model Documentation

Table Att. A-5
Operational Worksheet: CAP

Year: 2017																								
Lower Basin Shortage: 500,000	Entitlement					Scheduled Use					Adjusted Delivery					Shortage Allocation								
	CAP 1 (CR)	CAP 2 (M&I / Indian)	CAP 3 (NIA)	CAP 4 (Excess Agricultural)	CAP 5 (AWBA)	TOTAL	CAP 1 (CR)	CAP 2 (M&I / Indian)	CAP 3 (NIA)	CAP 4 (Excess Agricultural)	CAP 5 (AWBA)	TOTAL	CAP 1 (CR)	CAP 2 (M&I / Indian)	CAP 3 (NIA)	CAP 4 (Excess Agricultural)	CAP 5 (AWBA)	TOTAL	CAP 1 (CR)	CAP 2 (M&I / Indian)	CAP 3 (NIA)	CAP 4 (Excess Agricultural)	CAP 5 (AWBA)	TOTAL
Glendale	2,850	17,236	682			20,768	2,850	14,183	682			17,715	2,850	14,183	180			17,213	0	0	502			502
Goodyear		10,742				10,742		10,742				10,742		10,742				10,742	0	0				0
Green Valley DWID		1,900				1,900		500				500		500				500	0	0				0
H2O Water Co		147				147		0				0		0				0	0	0				0
Marana		47				47		0				0		0				0	0	0				0
Maricopa County Parks & Rec		665				665		645				645		645				645	0	0				0
Mesa*	2,622	43,503	5,551			51,676	2,622	30,029	5,551			38,202	2,622	30,029	1,469			34,120	0	0	4,082			4,082
MDWID		13,460				13,460		10,613				10,613		10,613				10,613	0	0				0
Oro Valley		10,305				10,305		10,305				10,305		10,305				10,305	0	0				0
Peoria		25,236				25,236		19,067				19,067		19,067				19,067	0	0				0
Phelps Dodge Miami		2,906				2,906		0				0		0				0	0	0				0
Phoenix*	4,750	122,120	37,280			164,150	4,750	134,120	37,280			176,150	4,750	134,120	9,866			148,736	0	0	27,414			27,414
Phoenix Memorial Park		84				84		0				0		0				0	0	0				0
Pine Water Co		161				161		0				0		0				0	0	0				0
Queen Creek Water Co		348				348		348				348		348				348	0	0				0
Rio Verde Utilities		812				812		812				812		812				812	0	0				0
San Tan ID		236				236		0				0		0				0	0	0				0
Scottsdale*	95	52,810	3,306			56,211	95	52,810	3,306			56,211	95	52,810	875			53,780	0	0	2,431			2,431
Spanish Trail Water Co		3,037				3,037		0				0		0				0	0	0				0
Superior		285				285		0				0		0				0	0	0				0
Surprise		10,249				10,249		10,249				10,249		10,249				10,249	0	0				0
Tempe	95	4,315	23			4,433	95	4,315	23			4,433	95	4,315	6			4,416	0	0	17			17
Tonto Hills Utility Co		71				71		0				0		0				0	0	0				0
Tucson		144,172				144,172		142,672				142,672		142,672				142,672	0	0				0
Vail Water Co		1,857				1,857		0				0		0				0	0	0				0
Valley Utilities Water Co		250				250		0				0		0				0	0	0				0
Water Util. Comm. Fac. Dist. (AJ)		2,919				2,919		50				50		50				50	0	0				0
Water Util. Greater Buckeye		43				43		0				0		0				0	0	0				0
Water Util. Greater Tonopah		64				64		0				0		0				0	0	0				0
White Tank Sys. (AZ Water Co.)		968				968		968				968		968				968	0	0				0
San Carlos (Phelps Dodge/Globe)		18,145				18,145		0				0		0				0	0	0				0
State Reserved			87,269			87,269			31,072			31,072			8,223			8,223			22,849			22,849
M&I Subtotal	20,900	638,823	148,598	0		808,321	20,900	512,767	92,401	0		626,068	20,900	512,767	24,452	0		558,119	0	0	67,949	0		67,949
TOTAL	68,400	977,402	364,698	Available		1,410,500	68,400	841,253	115,701	277,891	0	1,303,245	68,400	841,253	30,618	0	0	940,271	0	0	85,083	277,891	0	362,974
PERCENT												92%	100%	100%	26%	0%	0%	72%	0%	0%	74%	100%	0%	28%

*47,303 af NIA Priority water converts to M&I Priority on January 1, 2044 and 2,952 af is distributed to Chandler, 4,924 af to Mesa, 36,144 af to Phoenix, and 3,283 af to Scottsdale.

**After the Secretary has met the water delivery obligation to the Ak-Chin Indian Community under the Ak-Chin Water Rights Settlement, any excess water under the Ak-Chin Indian Community's CAP water delivery contract is available for delivery to the San Carlos Apache Tribe. Estimated delivery losses of 6 percent on the Santa Rosa Canal, incurred in the delivery of water to the Ak-Chin Indian Community, are charged to the Community's CAP water delivery contract.

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Attachment B

Indian Agricultural Distribution of Shortages (2008-2060)

This attachment to Appendix G contains tables produced by the Shortage Allocation Model that show the distribution of shortages to Indian agricultural tribes within Arizona. The shortages shown on these tables are based on the diversion volumes of the affected entities. The tables show the distribution of shortages to both tribes within the CAP and to other Arizona Indian tribes, for the years 2008, 2017, 2026, 2027, 2040, and 2060.

Table Att. B-1
2008 Indian Agricultural Shortages (Based on Diversions)

CAP	County	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
Ak-Chin Indian Community	Pinal County	0	0	0	0	0	0	0	25,453	37,357
Fort McDowell	Maricopa County	0	0	0	0	0	0	0	0	0
Gila River	Maricopa and Pinal County	0	0	0	0	0	0	0	53,626	56,605
TON-Chui Chu	Pinal County	0	0	0	0	0	0	0	1,895	2,000
TON-San Xavier	Pima County	0	0	0	0	0	17	1,631	12,052	12,631
TON-Schuk Toak	Pima County	0	0	0	0	0	4	369	10,600	11,169
Pasqua Yaqui	Pima County	0	0	0	0	0	0	0	474	500
Salt River	Maricopa County	0	0	0	0	0	0	0	12,670	13,300
San Carlos Apache	Gila County	0	0	0	0	0	0	0	9,750	9,750
Tonto Apache	Gila County	0	0	0	0	0	0	0	121	128
Yavapai Apache (Camp Verde)	Gila County	0	0	0	0	0	0	0	0	0
Yavapai Prescott	Yavapai, 500 AF was re-assigned to Scottsdale (1994 Act, PL 103-434)	0	0	0	0	0	0	0	474	500
Unallocated HVID	Maricopa County	0	0	0	0	0	0	0	0	0
Reserved Federal	---	0	0	0	0	0	0	0	0	0
CAP Tribal Total:		0	0	0	0	0	21	2,000	127,115	143,940.2
Arizona										
Cocopah Indian Reservation	Yuma County	0	0	0	1	223	445	667	1,332	1,362
Hopi Tribe (new entitlement)	La Paz County	557	1,213	1,541	1,870	2,526	3,182	3,838	5,807	5,898
Fort Mohave Indian Reservation	Mohave County	0	0	0	0	0	0	0	0	0
Fort Yuma Indian Reservation (new entitlement)	Yuma County	0	0	0	0	0	0	0	0	0
Colorado River Indian Reservation	La Paz County	0	0	0	0	0	0	0	0	0
Arizona Tribal Total:		557	1,213	1,541	1,871	2,749	3,627	4,505	7,139	7,259.887
Tribal Summary by County										
Gila County	3	0	0	0	0	0	0	0	9,871	9,878
La Paz County	2	557	1,213	1,541	1,870	2,526	3,182	3,838	5,807	5,898
Maricopa County	3	0	0	0	0	0	0	0	28,758	30,282
Mohave County	1	0	0	0	0	0	0	0	0	0
Pima County	3	0	0	0	0	0	21	2,000	23,126	24,300
Pinal County	2	0	0	0	0	0	0	0	64,886	78,981
Yavapai, 500 AF was re-assigned to Scottsdale (1994 Act, PL 103-434)	1	0	0	0	0	0	0	0	474	500
Yuma County	2	0	0	0	1	223	445	667	1,332	1,362
---	1	0	0	0	0	0	0	0	0	0
Total Tribal Shortages:	18	557	1,213	1,541	1,871	2,749	3,648	6,505	134,254	151,200

Table Att. B-2
2017 Indian Agricultural Shortages (Based on Diversions)

CAP	County	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
Ak-Chin Indian Community	Pinal County	0	0	0	0	0	0	2,032	28,564	39,191
Fort McDowell	Maricopa County	0	0	0	0	1,189	2,690	4,189	8,140	8,140
Gila River	Maricopa and Pinal County	0	0	0	39,688	64,884	92,161	119,401	191,200	191,200
TON-Chui Chu	Pinal County	0	0	0	800	1,852	3,179	4,505	8,000	8,000
TON-San Xavier	Pima County	0	992	6,597	8,972	12,916	17,895	22,867	35,972	35,972
TON-Schuk Toak	Pima County	0	224	1,492	2,028	3,606	5,598	7,586	12,828	12,828
Pasqua Yaqui	Pima County	0	0	0	0	73	165	257	500	500
Salt River	Maricopa County	0	0	0	0	3,079	5,286	7,490	13,300	13,300
San Carlos Apache	Gila County	0	0	0	0	15,580	27,548	37,467	39,000	39,000
Tonto Apache	Gila County	0	0	0	0	19	42	66	128	128
Yavapai Apache (Camp Verde)	Gila County	0	0	0	0	175	397	618	1,200	1,200
Yavapai Prescott	Yavapai, 500 AF was re-assigned to Scottsdale (1994 Act, PL 103-434)	0	0	0	0	73	165	257	500	500
Unallocated HVID	Maricopa County	0	0	0	0	178	403	627	1,218	1,218
Reserved Federal	---	0	1,360	9,045	12,300	12,300	12,300	12,300	12,300	12,300
CAP Tribal Total:		0	2,576	17,134	63,788	115,923	167,829	219,663	352,850	363,477.5
Arizona										
Cocopah Indian Reservation	Yuma County	0	0	0	39	273	507	742	1,362	1,362
Hopi Tribe (new entitlement)	La Paz County	594	1,287	1,634	1,981	2,674	3,367	4,061	5,898	5,898
Fort Mohave Indian Reservation	Mohave County	0	0	0	0	0	0	0	0	0
Fort Yuma Indian Reservation (new entitlement)	Yuma County	0	0	0	0	0	0	0	0	0
Colorado River Indian Reservation	La Paz County	0	0	0	0	0	0	0	0	0
Arizona Tribal Total:		594	1,287	1,634	2,020	2,947	3,875	4,802	7,260	7259.887
Tribal Summary by County										
Gila County	3	0	0	0	0	15,774	27,987	38,150	40,328	40,328
La Paz County	2	594	1,287	1,634	1,981	2,674	3,367	4,061	5,898	5,898
Maricopa County	3	0	0	0	11,906	23,911	36,027	48,126	80,018	80,018
Mohave County	1	0	0	0	0	0	0	0	0	0
Pima County	3	0	1,216	8,089	11,000	16,595	23,657	30,710	49,300	49,300
Pinal County	2	0	0	0	28,582	47,270	67,692	90,119	170,404	181,031
Yavapai, 500 AF was re-assigned to Scottsdale (1994 Act, PL 103-434)	1	0	0	0	0	73	165	257	500	500
Yuma County	2	0	0	0	39	273	507	742	1,362	1,362
---	1	0	1,360	9,045	12,300	12,300	12,300	12,300	12,300	12,300
Total Tribal Shortages:	18	594	3,863	18,768	65,807	118,870	171,703	224,465	360,110	370,737

Appendix G

Table Att. B-3
2026 Indian Agricultural Shortages (Based on Diversions)

CAP	County	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
Alk-Chin Indian Community	Pinal County	0	0	0	0	0	0	3,034	28,637	39,146
Fort McDowell	Maricopa County	0	0	0	0	2,885	5,821	8,752	16,398	16,398
Gila River	Maricopa and Pinal County	14,401	42,744	74,087	91,515	117,537	144,023	170,464	239,440	239,440
TON-Chui Chu	Pinal County	0	0	647	800	2,067	3,356	4,643	8,000	8,000
TON-San Xavier	Pima County	4,870	14,454	16,312	16,312	21,062	25,896	30,722	43,312	43,312
TON-Schuk Toak	Pima County	1,101	3,268	3,688	3,688	5,588	7,522	9,452	14,488	14,488
Pasqua Yaqui	Pima County	0	0	0	0	88	177	267	500	500
Salt River	Maricopa County	0	0	0	1,165	3,436	5,579	7,718	13,300	13,300
San Carlos Apache	Gila County	0	0	0	5,342	17,517	29,137	37,704	39,000	39,000
Tonto Apache	Gila County	0	0	0	0	23	45	68	128	128
Yavapai Apache (Camp Verde)	Gila County	0	0	0	0	211	426	640	1,200	1,200
Yavapai Prescott	Yavapai, 500 AF was re-assigned to Scottsdale (1994 Act, PL 103-434)	0	0	0	0	88	177	267	500	500
Unallocated HVID	Maricopa County	0	0	0	0	214	432	650	1,218	1,218
Reserved Federal	---	17,106	50,772	57,300	57,300	57,300	57,300	57,300	57,300	57,300
CAP Tribal Total:		37,477	111,238	152,034	176,122	228,014	279,892	331,681	463,421	473,929.7
Arizona										
Cocopah Indian Reservation	Yuma County	0	0	0	41	276	511	746	1,362	1,362
Hopi Tribe (new entitlement)	La Paz County	596	1,292	1,640	1,987	2,683	3,379	4,074	5,898	5,898
Fort Mohave Indian Reservation	Mohave County	0	0	0	0	0	0	0	0	0
Fort Yuma Indian Reservation (new entitlement)	Yuma County	0	0	0	0	0	0	0	0	0
Colorado River Indian Reservation	La Paz County	0	0	0	0	0	0	0	0	0
Arizona Tribal Total:		596	1,292	1,640	2,029	2,959	3,890	4,820	7,260	7,259.887
Tribal Summary by County										
	Tribes per County									
Gila County	3	0	0	0	5,342	17,750	29,609	38,413	40,328	40,328
La Paz County	2	596	1,292	1,640	1,987	2,683	3,379	4,074	5,898	5,898
Maricopa County	3	4,320	12,823	22,226	28,619	41,796	55,039	68,259	102,748	102,748
Mohave County	1	0	0	0	0	0	0	0	0	0
Pima County	3	5,971	17,721	20,000	20,000	26,738	33,595	40,441	58,300	58,300
Pinal County	2	10,081	29,921	52,508	64,861	84,343	104,172	127,001	204,245	214,754
Yavapai, 500 AF was re-assigned to Scottsdale (1994 Act, PL 103-434)	1	0	0	0	0	88	177	267	500	500
Yuma County	2	0	0	0	41	276	511	746	1,362	1,362
---	1	17,106	50,772	57,300	57,300	57,300	57,300	57,300	57,300	57,300
Total Tribal Shortages:	18	38,073	112,529	153,673	178,150	230,974	283,782	336,501	470,681	481,190

Table Att. B-4
2027 Indian Agricultural Shortages (Based on Diversions)

CAP	County	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
Ak-Chin Indian Community	Pinal County	0	0	0	0	0	0	3,141	28,644	39,137
Fort McDowell	Maricopa County	0	0	0	10	3,101	6,192	9,277	17,315	17,315
Gila River	Maricopa and Pinal County	29,442	67,319	99,234	115,720	142,129	168,530	194,886	263,560	263,560
TON-Chui Chu	Pinal County	0	0	672	804	2,090	3,375	4,657	8,000	8,000
TON-San Xavier	Pima County	6,969	15,934	17,128	17,143	21,964	26,782	31,593	44,128	44,128
TON-Schuk Toak	Pima County	1,576	3,603	3,872	3,879	5,807	7,734	9,658	14,672	14,672
Pasqua Yaqui	Pima County	0	0	0	0	90	179	268	500	500
Salt River	Maricopa County	0	0	0	1,337	3,474	5,610	7,743	13,300	13,300
San Carlos Apache	Gila County	0	0	0	6,137	17,724	29,307	37,729	39,000	39,000
Tonto Apache	Gila County	0	0	0	0	23	46	69	128	128
Yavapai Apache (Camp Verde)	Gila County	0	0	0	1	215	429	643	1,200	1,200
Yavapai Prescott	Yavapai, 500 AF was re-assigned to Scottsdale (1994 Act, PL 103-434)	0	0	0	0	90	179	268	500	500
Unallocated HVID	Maricopa County	0	0	0	1	218	436	653	1,218	1,218
Reserved Federal	---	25,348	57,959	62,300	62,300	62,300	62,300	62,300	62,300	62,300
CAP Tribal Total:		63,334	144,815	183,206	207,332	259,224	311,098	362,884	494,466	504,958.2
Arizona										
Cocopah Indian Reservation	Yuma County	0	0	0	41	277	512	747	1,362	1,362
Hopi Tribe (new entitlement)	La Paz County	597	1,292	1,640	1,988	2,684	3,380	4,076	5,898	5,898
Fort Mohave Indian Reservation	Mohave County	0	0	0	0	0	0	0	0	0
Fort Yuma Indian Reservation (new entitlement)	Yuma County	0	0	0	0	0	0	0	0	0
Colorado River Indian Reservation	La Paz County	0	0	0	0	0	0	0	0	0
Arizona Tribal Total:		597	1,292	1,640	2,030	2,961	3,892	4,822	7,260	7,259.887
Tribal Summary by County										
	Tribes per County									
Gila County	3	0	0	0	6,138	17,962	29,782	38,441	40,328	40,328
La Paz County	2	597	1,292	1,640	1,988	2,684	3,380	4,076	5,898	5,898
Maricopa County	3	8,832	20,196	29,770	36,064	49,432	62,796	76,138	110,901	110,901
Mohave County	1	0	0	0	0	0	0	0	0	0
Pima County	3	8,544	19,537	21,000	21,022	27,860	34,695	41,519	59,300	59,300
Pinal County	2	20,609	47,123	70,136	81,808	101,580	121,346	144,218	221,136	231,629
Yavapai, 500 AF was re-assigned to Scottsdale (1994 Act, PL 103-434)	1	0	0	0	0	90	179	268	500	500
Yuma County	2	0	0	0	41	277	512	747	1,362	1,362
---	1	25,348	57,959	62,300	62,300	62,300	62,300	62,300	62,300	62,300
Total Tribal Shortages:	18	63,931	146,107	184,847	209,362	262,184	314,989	367,706	501,726	512,218

Table Att. B-5
2040 Indian Agricultural Shortages (Based on Diversions)

CAP	County	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
Ak-Chin Indian Community	Pinal County	0	0	0	0	0	0	3,780	28,770	39,147
Fort McDowell	Maricopa County	0	0	0	282	3,526	6,767	9,990	18,233	18,233
Gila River	Maricopa and Pinal County	48,107	91,719	109,442	124,889	151,205	177,499	203,652	270,525	270,525
TON-Chui Chu	Pinal County	0	310	754	911	2,192	3,472	4,745	8,000	8,000
TON-San Xavier	Pima County	9,175	15,128	15,128	15,546	20,350	25,149	29,922	42,128	42,128
TON-Schuk Toak	Pima County	2,074	3,420	3,420	3,587	5,509	7,429	9,338	14,220	14,220
Pasqua Yaqui	Pima County	0	0	0	8	97	186	274	500	500
Salt River	Maricopa County	0	0	0	1,515	3,645	5,772	7,889	13,300	13,300
San Carlos Apache	Gila County	0	0	0	7,104	18,650	30,186	37,881	39,000	39,000
Tonto Apache	Gila County	0	0	0	2	25	48	70	128	128
Yavapai Apache (Camp Verde)	Gila County	0	0	0	19	232	445	658	1,200	1,200
Yavapai Prescott	Yavapai, 500 AF was re-assigned to Scottsdale (1994 Act, PL 103-434)	0	0	0	8	97	186	274	500	500
Unallocated HVID	Maricopa County	0	0	0	19	236	452	667	1,218	1,218
Reserved Federal	---	26,846	44,267	44,267	44,267	44,267	44,267	44,267	44,267	44,267
CAP Tribal Total:		86,201	154,845	173,011	198,156	250,029	301,857	353,406	481,988	492,365.6
Arizona										
Cocopah Indian Reservation	Yuma County	0	0	0	45	282	518	754	1,362	1,362
Hopi Tribe (new entitlement)	La Paz County	600	1,300	1,650	2,000	2,699	3,399	4,098	5,898	5,898
Fort Mohave Indian Reservation	Mohave County	0	0	0	0	0	0	0	0	0
Fort Yuma Indian Reservation (new entitlement)	Yuma County	0	0	0	0	0	0	0	0	0
Colorado River Indian Reservation	La Paz County	0	0	0	0	0	0	0	0	0
Arizona Tribal Total:		600	1,300	1,650	2,045	2,981	3,917	4,853	7,260	7,259.887
Tribal Summary by County										
	Tribes per County									
Gila County	3	0	0	0	7,125	18,907	30,679	38,608	40,328	40,328
La Paz County	2	600	1,300	1,650	2,000	2,699	3,399	4,098	5,898	5,898
Maricopa County	3	14,432	27,516	32,833	39,283	52,768	66,241	79,642	113,908	113,908
Mohave County	1	0	0	0	0	0	0	0	0	0
Pima County	3	11,249	18,549	18,549	19,141	25,955	32,763	39,534	56,849	56,849
Pinal County	2	33,675	64,514	77,363	88,333	108,036	127,721	151,081	226,137	236,514
Yavapai, 500 AF was re-assigned to Scottsdale (1994 Act, PL 103-434)	1	0	0	0	8	97	186	274	500	500
Yuma County	2	0	0	0	45	282	518	754	1,362	1,362
---	1	26,846	44,267	44,267	44,267	44,267	44,267	44,267	44,267	44,267
Total Tribal Shortages:	18	86,802	156,144	174,661	200,201	253,010	305,773	358,259	489,248	499,625

Table Att. B-6
2060 Indian Agricultural Shortages (Based on Diversions)

CAP	County	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
Ak-Chin Indian Community	Pinal County	0	0	0	0	0	0	3,783	28,770	39,147
Fort McDowell	Maricopa County	0	0	0	318	3,546	6,770	9,991	18,233	18,233
Gila River	Maricopa and Pinal County	55,082	89,684	102,575	117,465	143,654	169,811	195,943	262,808	262,808
TON-Chui Chu	Pinal County	0	452	775	926	2,200	3,474	4,745	8,000	8,000
TON-San Xavier	Pima County	10,505	13,657	13,657	14,128	18,908	23,682	28,452	40,657	40,657
TON-Schuk Toak	Pima County	2,375	3,088	3,088	3,276	5,188	7,098	9,006	13,888	13,888
Pasqua Yaqui	Pima County	0	0	0	9	97	186	274	500	500
Salt River	Maricopa County	0	0	0	1,539	3,658	5,775	7,889	13,300	13,300
San Carlos Apache	Gila County	0	0	0	7,233	18,723	30,199	37,881	39,000	39,000
Tonto Apache	Gila County	0	0	0	2	25	48	70	128	128
Yavapai Apache (Camp Verde)	Gila County	0	0	0	21	233	446	658	1,200	1,200
Yavapai Prescott	Yavapai, 500 AF was re-assigned to Scottsdale (1994 Act, PL 103-434)	0	0	0	9	97	186	274	500	500
Unallocated HVID	Maricopa County	0	0	0	21	237	452	667	1,218	1,218
Reserved Federal	---	30,738	39,960	39,960	39,960	39,960	39,960	39,960	39,960	39,960
CAP Tribal Total:		98,701	146,840	160,054	184,906	236,527	288,087	339,595	468,161	478,538.2
Arizona										
Cocopah Indian Reservation	Yuma County	0	0	0	45	282	518	754	1,362	1,362
Hopi Tribe (new entitlement)	La Paz County	600	1,300	1,650	2,000	2,699	3,399	4,098	5,898	5,898
Fort Mohave Indian Reservation	Mohave County	0	0	0	0	0	0	0	0	0
Fort Yuma Indian Reservation (new entitlement)	Yuma County	0	0	0	0	0	0	0	0	0
Colorado River Indian Reservation	La Paz County	0	0	0	0	0	0	0	0	0
Arizona Tribal Total:		600	1,300	1,650	2,045	2,981	3,917	4,853	7,260	7,259.887
Tribal Summary by County										
	Tribes per County									
Gila County	3	0	0	0	7,256	18,981	30,692	38,609	40,328	40,328
La Paz County	2	600	1,300	1,650	2,000	2,699	3,399	4,098	5,898	5,898
Maricopa County	3	16,525	26,905	30,773	37,118	50,537	63,941	77,331	111,593	111,593
Mohave County	1	0	0	0	0	0	0	0	0	0
Pima County	3	12,880	16,744	16,744	17,413	24,193	30,966	37,732	55,044	55,044
Pinal County	2	38,558	63,231	72,578	83,151	102,758	122,342	145,688	220,735	231,113
Yavapai, 500 AF was re-assigned to Scottsdale (1994 Act, PL 103-434)	1	0	0	0	9	97	186	274	500	500
Yuma County	2	0	0	0	45	282	518	754	1,362	1,362
---	1	30,738	39,960	39,960	39,960	39,960	39,960	39,960	39,960	39,960
Total Tribal Shortages:	18	99,301	148,140	161,704	186,951	239,508	292,003	344,447	475,421	485,798

Attachment C

Non-Indian Agricultural Distribution of Shortages (2008-2060)

This attachment to Appendix G contains tables produced by the Shortage Allocation Model that show the distribution of shortages to non-Indian agricultural entitlement holders within Arizona. The shortages shown on these tables are based on the diversion volumes of the affected entities. The tables show the distribution of shortages to non-Indian agricultural entitlement holders within Arizona, for the years 2008, 2017, 2026, 2027, 2040, and 2060.

Table Att. C-1
2008 Non-Indian Agricultural Shortages (Based on Diversions)

Arizona Agriculture	County	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
CAP Agricultural Relinquished Water Contracts under AWSA	Maricopa/Pinal/Pima	0	0	38,611	111,222	256,233	400,000	400,000	400,000	400,000
CAP Arizona State Land Department	Pinal County	0	0	0	0	0	94	9,026	9,026	9,026
Arizona State Land Department	Yuma County	723	1,446	1,807	2,169	2,892	3,615	4,338	6,507	6606.702
Beattie Farms Southwest (new contract) (2004 over use of 263 af)	Yuma County	121	243	304	364	486	607	729	1,093	1110
ChaCha (Curtis Family Trust) (Auza Farm and West Farm)	Yuma County	230	460	575	690	919	1,149	1,379	2,069	2100.174
Cibola Resources	La Paz County	0	0	0	0	0	0	0	0	0
Cibola Valley Irrigation & Drainage District (M&I: 300 af)	La Paz County	93	1,362	1,997	2,632	3,901	5,170	6,440	10,248	10422.68
Curtis, Armon (Curry Family LTD)	Yuma County	33	66	82	99	131	164	197	296	300.0249
Gila Monster Farms (formerly Sturges Farms Inc.)	Yuma County	158	315	393	472	629	786	943	1,414	1435.828
JRS Partners LLC (formerly Jessen Family Limited) (new contract) (2004 over use of 4,984 af)	Yuma County	118	236	296	355	473	591	709	1,064	1080.09
Mohave County Water Authority (new entitlement)	La Paz County	557	1,213	1,541	1,870	2,526	3,182	3,838	5,807	5897.677
Mohave Valley Irrigation and Drainage District (5,000 af M&I)	Mohave County	2,824	5,647	7,059	8,471	11,294	14,118	16,941	25,412	25800.99
North Baja LLC (formerly Jamar Produce) (72 af M&I)	La Paz County	41	82	103	124	165	206	248	372	377.2242
Ogram Boys Enterprises (new contract)	Yuma County	102	203	253	304	405	506	607	911	924.6154
Ogram, George	Yuma County	53	105	131	158	210	263	315	473	480
Pasquinelli, Gary and Barbara (formerly Ansel Hall)	Yuma County	53	107	133	160	213	266	319	479	486.1942
Peach, John (2004 over use of 45 af)	Yuma County	49	99	124	149	199	249	299	449	455.3846
Phillips, Milton and Jean	Yuma County	2	4	5	6	8	10	12	18	18.46154
Rayner Ranches	Yuma County	492	985	1,231	1,477	1,970	2,462	2,955	4,432	4499.816
Yuma Irrigation District (5,000 af M&I)	Yuma County	0	0	0	0	0	0	0	0	12602.29
Yuma County Water Users' Association (14,701 af M&I)	Yuma County	0	0	0	0	0	0	0	0	0
Yuma Area Office (489.95 af M&I Conversion)	Yuma County	0	0	0	0	0	0	0	0	0
Yuma Mesa Fruit Growers	Yuma County	0	0	0	0	0	0	0	0	2.490203
Yuma Mesa Irrigation & Drainage District (10,000 af M&I)	Yuma County	0	0	0	0	0	0	0	0	59987.14
University of Arizona	Yuma County	0	0	0	0	0	0	0	0	174.3142
Yuma Mesa Grapefruit Company (Camille Allec Jr.)	Yuma County	0	0	0	0	0	0	0	0	17.41851
North Gila Valley Irrigation District (2,500 af M&I)	Yuma County	0	0	0	0	0	0	0	0	0
Yuma Auxiliary Project (Unit B)	Yuma County	0	0	0	0	0	0	0	0	4536.032
Welton-Mohawk Irrigation and Drainage District (5,000 af M&I)	Yuma County	0	0	0	0	0	0	0	0	90019.89
Gila Monster Farms (formerly Sturges)	Yuma County	0	0	0	0	0	0	0	0	1384.181
Sturges, Harold (not taking water)	Yuma County	0	0	0	0	0	0	0	0	0
Sturges, Irma (not taking water)	Yuma County	0	0	0	0	0	0	0	0	0
Molina (Water Use Not Reported)	Yuma County	0	0	0	0	0	0	0	0	0
Gila Monster Farms (formerly Sturges)	Yuma County	0	0	0	0	0	0	0	0	0
Powers (Power, R.E. & P.) (2004 use 384 af over entitlement)	Yuma County	0	0	0	0	0	0	0	0	0
Zozaya (in MVIDD) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
North Gila Valley Irrigation District****	Yuma County	0	0	0	0	0	0	0	0	0
Yuma Axiliary Project (Unit B)	Yuma County	0	0	0	0	0	0	0	0	0
Hulet (in MVIDD) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
Holpal (in MVIDD/formerly Hurschler) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
McKellips and Granite Reef Farms (in MVIDD) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
Sherill & Lafollette (in MVIDD) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
Yuma County Water Users' Association	Yuma County	0	0	0	0	0	0	0	0	0
Phillips, Milton and Jean (Water Use Not Reported)	Yuma County	0	0	0	0	0	0	0	0	0
Arizona Total		5,649	12,573	54,647	130,719	282,654	433,440	449,296	470,068	639745.6

Table Att. C-1
2008 Non-Indian Agricultural Shortages (Based on Diversions)

Arizona Agriculture	County	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
<u>Agriculture Summary by County</u>										
	<u>Agriculture per County</u>									
	Coconino County	0	0	0	0	0	0	0	0	0
	La Paz County	4	691	2,658	3,641	4,625	6,592	8,559	10,526	16,427
	Maricopa County	0	0	0	8,881	25,581	58,934	92,000	92,000	92,000
	Mohave County	6	2,824	5,647	7,059	8,471	11,294	14,118	16,941	25,412
	Pinal County	1	0	0	29,731	85,641	197,299	308,094	317,026	317,026
	Yuma County	32	2,135	4,268	5,335	6,402	8,536	10,669	12,803	19,203
	Total Arizona Agriculture	43	5,649	12,573	54,647	130,719	282,654	433,440	449,296	470,068
										639,746

Table Att. C-2
2017 Non-Indian Agricultural Shortages (Based on Diversions)

Arizona Agriculture	County	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
CAP Agricultural Relinquished Water Contracts under AWSA	Maricopa/Pinal/Pima	146,088	277,891	277,891	277,891	277,891	277,891	277,891	277,891	277,891
CAP Arizona State Land Department	Pinal County	0	998	6,637	9,026	9,026	9,026	9,026	9,026	9,026
Arizona State Land Department	Yuma County	764	1,527	1,909	2,291	3,055	3,819	4,583	6,607	6606.702
Beattie Farms Southwest (new contract) (2004 over use of 263 af)	Yuma County	128	257	321	385	513	642	770	1,110	1110
ChaCha (Curtis Family Trust) (Auza Farm and West Farm) (over 13 af)	Yuma County	243	486	607	729	971	1,214	1,457	2,100	2100.174
Cibola Resources	La Paz County	0	0	0	0	0	0	0	0	0
Cibola Valley Irrigation & Drainage District (M&I: 300 af)	La Paz County	165	1,506	2,176	2,847	4,188	5,529	6,870	10,423	10422.68
Curtis, Armon (Curry Family LTD)	Yuma County	35	69	87	104	139	173	208	300	300.0249
Gila Monster Farms (formerly Sturges Farms Inc.)	Yuma County	167	333	416	499	664	830	996	1,436	1435.828
JRS Partners LLC (formerly Jessen Family Limited) (new contract) (2004 over use of 4,984 af)	Yuma County	125	250	312	375	500	624	749	1,080	1080.09
Mohave County Water Authority (new entitlement)	La Paz County	594	1,287	1,634	1,981	2,674	3,367	4,061	5,898	5897.677
Mohave Valley Irrigation and Drainage District (5,000 af M&I)	Mohave County	2,983	5,966	7,457	8,949	11,932	14,915	17,898	25,801	25800.99
North Baja LLC (formerly Jamar Produce) (72 af M&I)	La Paz County	43	87	109	131	174	218	262	377	377.2242
Ogram Boys Enterprises (new contract)	Yuma County	107	214	268	321	428	535	642	925	924.6154
Ogram, George	Yuma County	55	111	139	166	222	277	333	480	480
Pasquinelli, Gary and Barbara (formerly Ansel Hall)	Yuma County	56	113	141	169	225	281	337	486	486.1942
Peach, John (2004 over use of 45 af)	Yuma County	52	105	131	158	210	263	316	455	455.3846
Phillips, Milton and Jean	Yuma County	3	5	6	7	9	11	13	18	18.46154
Rayner Ranches	Yuma County	520	1,040	1,300	1,561	2,081	2,601	3,121	4,500	4499.816
Yuma Irrigation District (5,000 af M&I)	Yuma County	0	0	0	0	0	0	0	1,371	15061.97
Yuma County Water Users' Association (14,701 af M&I)	Yuma County	0	0	0	0	0	0	0	0	0
Yuma Area Office (489.95 af M&I Conversion)	Yuma County	0	0	0	0	0	0	0	0	0
Yuma Mesa Fruit Growers	Yuma County	0	0	0	0	0	0	0	0	2.953587
Yuma Mesa Irrigation & Drainage District (10,000 af M&I)	Yuma County	0	0	0	0	0	0	0	6,456	70930.67
University of Arizona	Yuma County	0	0	0	0	0	0	0	19	206.7511
Yuma Mesa Grapefruit Company (Camille Allec Jr.)	Yuma County	0	0	0	0	0	0	0	2	20.65979
North Gila Valley Irrigation District (2,500 af M&I)	Yuma County	0	0	0	0	0	0	0	0	0
Yuma Axillary Project (Unit B)	Yuma County	0	0	0	0	0	0	0	482	5291.596
Welton-Mohawk Irrigation and Drainage District (5,000 af M&I)	Yuma County	0	0	0	0	0	0	0	9,718	106771
Gila Monster Farms (formerly Sturges)	Yuma County	0	0	0	0	0	0	0	149	1641.753
Sturges, Harold (not taking water)	Yuma County	0	0	0	0	0	0	0	0	0
Sturges, Irma (not taking water)	Yuma County	0	0	0	0	0	0	0	0	0
Molina (Water Use Not Reported)	Yuma County	0	0	0	0	0	0	0	0	0
Gila Monster Farms (formerly Sturges)	Yuma County	0	0	0	0	0	0	0	0	0
Powers (Power, R.E. & P.) (2004 use 384 af over entitlement)	Yuma County	0	0	0	0	0	0	0	0	0
Zozaya (in MVIDD) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
North Gila Valley Irrigation District****	Yuma County	0	0	0	0	0	0	0	0	0
Yuma Axillary Project (Unit B)	Yuma County	0	0	0	0	0	0	0	0	0
Hulet (in MVIDD) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
Holpal (in MVIDD/formerly Hurschler) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
McKellips and Granite Reef Farms (in MVIDD) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
Sherill & Lafollette (in MVIDD) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
Yuma County Water Users' Association	Yuma County	0	0	0	0	0	0	0	0	0
Phillips, Milton and Jean (Water Use Not Reported)	Yuma County	0	0	0	0	0	0	0	0	0
Arizona Total		152,128	292,244	301,541	307,587	314,902	322,217	329,532	367,110	548,840.6
Agriculture Summary by County	Agriculture per County									
Coconino County		0	0	0	0	0	0	0	0	0
La Paz County	4	802	2,880	3,919	4,958	7,036	9,114	11,192	16,698	16697.58
Maricopa County	0	33,600	63,915	63,915	63,915	63,915	63,915	63,915	63,915	63915.01
Mohave County	6	2,983	5,966	7,457	8,949	11,932	14,915	17,898	25,801	25800.99
Pinal County	1	112,488	214,974	220,614	223,002	223,002	223,002	223,002	223,002	223002.3
Yuma County	32	2,255	4,509	5,636	6,763	9,017	11,271	13,525	37,695	219424.7
Total Arizona Agriculture	43	152,128	292,244	301,541	307,587	314,902	322,217	329,532	367,110	548,841

Table Att. C-3
2026 Non-Indian Agricultural Shortages (Based on Diversions)

Arizona Agriculture	County	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
CAP Agricultural Relinquished Water Contracts under AWSA	Maricopa/Pinal/Pima	72,075	72,075	72,075	72,075	72,075	72,075	72,075	72,075	72,075
CAP Arizona State Land Department	Pinal County	2,694	7,998	9,026	9,026	9,026	9,026	9,026	9,026	9,026
Arizona State Land Department	Yuma County	766	1,532	1,916	2,299	3,065	3,831	4,598	6,607	6606.702
Beattie Farms Southwest (new contract) (2004 over use of 263 af)	Yuma County	129	257	322	386	515	644	772	1,110	1110
ChaCha (Curtis Family Trust) (Auza Farm and West Farm) (over 13 af)	Yuma County	244	487	609	731	974	1,218	1,462	2,100	2100.174
Cibola Resources	La Paz County	0	0	0	0	0	0	0	0	0
Cibola Valley Irrigation & Drainage District (M&I: 300 af)	La Paz County	169	1,514	2,187	2,860	4,205	5,551	6,896	10,423	10422.68
Curtis, Armon (Curry Family LTD)	Yuma County	35	70	87	104	139	174	209	300	300.0249
Gila Monster Farms (formerly Sturges Farms Inc.)	Yuma County	167	334	417	500	667	833	1,000	1,436	1435.828
JRS Partners LLC (formerly Jessen Family Limited) (new contract) (2004 over use of 4,984 af)	Yuma County	125	251	313	376	501	626	752	1,080	1080.09
Mohave County Water Authority (new entitlement)	La Paz County	596	1,292	1,640	1,987	2,683	3,379	4,074	5,898	5897.677
Mohave Valley Irrigation and Drainage District (5,000 af M&I)	Mohave County	2,993	5,985	7,482	8,978	11,971	14,963	17,956	25,801	25800.99
North Baja LLC (formerly Jamar Produce) (72 af M&I)	La Paz County	44	87	109	131	175	219	262	377	377.2242
Ogram Boys Enterprises (new contract)	Yuma County	108	215	269	322	429	536	644	925	924.6154
Ogram, George	Yuma County	56	111	139	167	223	278	334	480	480
Pasquinelli, Gary and Barbara (formerly Ansel Hall)	Yuma County	57	113	141	169	226	282	338	486	486.1942
Peach, John (2004 over use of 45 af)	Yuma County	52	105	132	158	211	264	317	455	455.3846
Phillips, Milton and Jean	Yuma County	3	5	6	7	9	11	13	18	18.46154
Rayner Ranches	Yuma County	522	1,044	1,305	1,566	2,088	2,610	3,132	4,500	4499.816
Yuma Irrigation District (5,000 af M&I)	Yuma County	0	0	0	0	0	0	0	1,498	15345.82
Yuma County Water Users' Association (14,701 af M&I)	Yuma County	0	0	0	0	0	0	0	0	0
Yuma Area Office (489.95 af M&I Conversion)	Yuma County	0	0	0	0	0	0	0	0	0
Yuma Mesa Fruit Growers	Yuma County	0	0	0	0	0	0	0	0	2.942086
Yuma Mesa Irrigation & Drainage District (10,000 af M&I)	Yuma County	0	0	0	0	0	0	0	6,812	69781.95
University of Arizona	Yuma County	0	0	0	0	0	0	0	20	205.946
Yuma Mesa Grapefruit Company (Camille Allec Jr.)	Yuma County	0	0	0	0	0	0	0	2	20.57935
North Gila Valley Irrigation District (2,500 af M&I)	Yuma County	0	0	0	0	0	0	0	0	0
Yuma Axillary Project (Unit B)	Yuma County	0	0	0	0	0	0	0	494	5059.144
Welton-Mohawk Irrigation and Drainage District (5,000 af M&I)	Yuma County	0	0	0	0	0	0	0	10,382	106355.3
Gila Monster Farms (formerly Sturges)	Yuma County	0	0	0	0	0	0	0	160	1635.36
Sturges, Harold (not taking water)	Yuma County	0	0	0	0	0	0	0	0	0
Sturges, Irma (not taking water)	Yuma County	0	0	0	0	0	0	0	0	0
Molina (Water Use Not Reported)	Yuma County	0	0	0	0	0	0	0	0	0
Gila Monster Farms (formerly Sturges)	Yuma County	0	0	0	0	0	0	0	0	0
Powers (Power, R.E. & P.) (2004 use 384 af over entitlement)	Yuma County	0	0	0	0	0	0	0	0	0
Zozaya (in MVIDD) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
North Gila Valley Irrigation District****	Yuma County	0	0	0	0	0	0	0	0	0
Yuma Axillary Project (Unit B)	Yuma County	0	0	0	0	0	0	0	0	0
Hulet (in MVIDD) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
Holpal (in MVIDD/formerly Hurschler) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
McKellips and Granite Reef Farms (in MVIDD) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
Sherill & Lafollette (in MVIDD) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
Yuma County Water Users' Association	Yuma County	0	0	0	0	0	0	0	0	0
Phillips, Milton and Jean (Water Use Not Reported)	Yuma County	0	0	0	0	0	0	0	0	0
Arizona Total		80,833	93,475	98,173	101,842	109,181	116,520	123,859	162,465	341,503.6
Agriculture Summary by County	Agriculture per County									
Coconino County		0	0	0	0	0	0	0	0	0
La Paz County	4	809	2,894	3,936	4,978	7,063	9,148	11,233	16,698	16697.58
Maricopa County	0	16,577	16,577	16,577	16,577	16,577	16,577	16,577	16,577	16577.18
Mohave County	6	2,993	5,985	7,482	8,978	11,971	14,963	17,956	25,801	25800.99
Pinal County	1	58,192	63,495	64,524	64,524	64,524	64,524	64,524	64,524	64523.5
Yuma County	32	2,263	4,524	5,655	6,785	9,047	11,308	13,569	38,866	217904.3
Total Arizona Agriculture	43	80,833	93,475	98,173	101,842	109,181	116,520	123,859	162,465	341,504

Table Att. C-4
2027 Non-Indian Agricultural Shortages (Based on Diversions)

Arizona Agriculture	County	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
CAP Agricultural Relinquished Water Contracts under AWSA	Maricopa/Pinal/Pima	33,158	33,158	33,158	33,158	33,158	33,158	33,158	33,158	33,158
CAP Arizona State Land Department	Pinal County	3,672	8,397	9,026	9,026	9,026	9,026	9,026	9,026	9,026
Arizona State Land Department	Yuma County	766	1,533	1,916	2,300	3,066	3,833	4,599	6,607	6606.702
Beattie Farms Southwest (new contract) (2004 over use of 263 af)	Yuma County	129	258	322	386	515	644	773	1,110	1110
ChaCha (Curtis Family Trust) (Auza Farm and West Farm) (over 13 af)	Yuma County	244	488	609	731	975	1,219	1,462	2,100	2100.174
Cibola Resources	La Paz County	0	0	0	0	0	0	0	0	0
Cibola Valley Irrigation & Drainage District (M&I: 300 af)	La Paz County	169	1,515	2,188	2,861	4,207	5,553	6,899	10,423	10422.68
Curtis, Armon (Curry Family LTD)	Yuma County	35	70	87	104	139	174	209	300	300.0249
Gila Monster Farms (formerly Sturges Farms Inc.)	Yuma County	167	334	417	500	667	833	1,000	1,436	1435.828
JRS Partners LLC (formerly Jessen Family Limited) (new contract) (2004 over use of 4,984)	Yuma County	125	251	313	376	501	627	752	1,080	1080.09
Mohave County Water Authority (new entitlement)	La Paz County	597	1,292	1,640	1,988	2,684	3,380	4,076	5,898	5897.677
Mohave Valley Irrigation and Drainage District (5,000 af M&I)	Mohave County	2,994	5,987	7,484	8,981	11,975	14,969	17,962	25,801	25800.99
North Baja LLC (formerly Jamar Produce) (72 af M&I)	La Paz County	44	87	109	131	175	219	263	377	377.2242
Ogram Boys Enterprises (new contract)	Yuma County	108	215	269	322	429	537	644	925	924.6154
Ogram, George	Yuma County	56	111	139	167	223	278	334	480	480
Pasquinelli, Gary and Barbara (formerly Ansel Hall)	Yuma County	57	113	141	169	226	282	339	486	486.1942
Peach, John (2004 over use of 45 af)	Yuma County	52	105	132	158	211	264	317	455	455.3846
Phillips, Milton and Jean	Yuma County	3	5	6	7	9	11	13	18	18.46154
Rayner Ranches	Yuma County	522	1,044	1,305	1,566	2,088	2,611	3,133	4,500	4499.816
Yuma Irrigation District (5,000 af M&I)	Yuma County	0	0	0	0	0	0	0	1,513	15390.97
Yuma County Water Users' Association (14,701 af M&I)	Yuma County	0	0	0	0	0	0	0	0	0
Yuma Area Office (489.95 af M&I Conversion)	Yuma County	0	0	0	0	0	0	0	0	0
Yuma Mesa Fruit Growers	Yuma County	0	0	0	0	0	0	0	0	2.939806
Yuma Mesa Irrigation & Drainage District (10,000 af M&I)	Yuma County	0	0	0	0	0	0	0	6,842	69582.55
University of Arizona	Yuma County	0	0	0	0	0	0	0	20	205.7864
Yuma Mesa Grapefruit Company (Camille Allec Jr.)	Yuma County	0	0	0	0	0	0	0	2	20.5634
North Gila Valley Irrigation District (2,500 af M&I)	Yuma County	0	0	0	0	0	0	0	0	0
Yuma Axillary Project (Unit B)	Yuma County	0	0	0	0	0	0	0	494	5019.942
Welton-Mohawk Irrigation and Drainage District (5,000 af M&I)	Yuma County	0	0	0	0	0	0	0	10,450	106272.8
Gila Monster Farms (formerly Sturges)	Yuma County	0	0	0	0	0	0	0	161	1634.093
Sturges, Harold (not taking water)	Yuma County	0	0	0	0	0	0	0	0	0
Sturges, Irma (not taking water)	Yuma County	0	0	0	0	0	0	0	0	0
Molina (Water Use Not Reported)	Yuma County	0	0	0	0	0	0	0	0	0
Gila Monster Farms (formerly Sturges)	Yuma County	0	0	0	0	0	0	0	0	0
Powers (Power, R.E. & P.) (2004 use 384 af over entitlement)	Yuma County	0	0	0	0	0	0	0	0	0
Zozaya (in MVIDD) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
North Gila Valley Irrigation District****	Yuma County	0	0	0	0	0	0	0	0	0
Yuma Axillary Project (Unit B)	Yuma County	0	0	0	0	0	0	0	0	0
Hulet (in MVIDD) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
Holpal (in MVIDD/formerly Hurschler) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
McKellips and Granite Reef Farms (in MVIDD) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
Sherill & Lafollette (in MVIDD) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
Yuma County Water Users' Association	Yuma County	0	0	0	0	0	0	0	0	0
Phillips, Milton and Jean (Water Use Not Reported)	Yuma County	0	0	0	0	0	0	0	0	0
Arizona Total		42,897	54,964	59,263	62,934	70,275	77,617	84,958	123,663	302,309.8
Agriculture Summary by County	Agriculture per County									
Cocconino County		0	0	0	0	0	0	0	0	0
La Paz County	4	810	2,895	3,938	4,981	7,066	9,152	11,237	16,698	16697.58
Maricopa County	0	7,626	7,626	7,626	7,626	7,626	7,626	7,626	7,626	7626.392
Mohave County	6	2,994	5,987	7,484	8,981	11,975	14,969	17,962	25,801	25800.99
Pinal County	1	29,204	33,929	34,558	34,558	34,558	34,558	34,558	34,558	34557.83
Yuma County	32	2,263	4,526	5,657	6,788	9,050	11,312	13,574	38,980	217627
Total Arizona Agriculture	43	42,897	54,964	59,263	62,934	70,275	77,617	84,958	123,663	302,310

Table Att. C-5
2040 Non-Indian Agricultural Shortages (Based on Diversions)

Arizona Agriculture	County	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
CAP Agricultural Relinquished Water Contracts under AWSA	Maricopa/Pinal/Pima	0	0	0	0	0	0	0	0	0
CAP Arizona State Land Department	Pinal County	3,600	5,937	5,937	5,937	5,937	5,937	5,937	5,937	5,937
Arizona State Land Department	Yuma County	770	1,541	1,927	2,312	3,083	3,854	4,624	6,607	6,607
Beattie Farms Southwest (new contract) (2004 over use of 263 af)	Yuma County	129	259	324	388	518	647	777	1,110	1,110
ChaCha (Curtis Family Trust) (Auza Farm and West Farm) (over 13 af)	Yuma County	245	490	613	735	980	1,225	1,470	2,100	2,100
Cibola Resources	La Paz County	0	0	0	0	0	0	0	0	0
Cibola Valley Irrigation & Drainage District (M&I: 300 af)	La Paz County	177	1,530	2,207	2,883	4,236	5,589	6,943	10,423	10,422
Curtis, Armon (Curry Family LTD)	Yuma County	35	70	88	105	140	175	210	300	300
Gila Monster Farms (formerly Sturges Farms Inc.)	Yuma County	168	336	419	503	670	838	1,005	1,436	1,435
JRS Partners LLC (formerly Jessen Family Limited) (new contract) (2004 over use of 4,984 af)	Yuma County	126	252	315	378	504	630	756	1,080	1,080
Mohave County Water Authority (new entitlement)	La Paz County	600	1,300	1,650	2,000	2,699	3,399	4,098	5,898	5,897
Mohave Valley Irrigation and Drainage District (5,000 af M&I)	Mohave County	3,010	6,020	7,525	9,030	12,040	15,050	18,060	25,801	25,800
North Baja LLC (formerly Jamar Produce) (72 af M&I)	La Paz County	44	88	110	132	176	220	264	377	377
Ogram Boys Enterprises (new contract)	Yuma County	108	216	270	324	432	540	647	925	924
Ogram, George	Yuma County	56	112	140	168	224	280	336	480	480
Pasquinelli, Gary and Barbara (formerly Ansel Hall)	Yuma County	57	114	142	170	227	284	340	486	486
Peach, John (2004 over use of 45 af)	Yuma County	53	106	132	159	212	265	319	455	455
Phillips, Milton and Jean	Yuma County	3	5	6	7	9	11	13	18	18
Rayner Ranches	Yuma County	525	1,050	1,312	1,575	2,100	2,625	3,150	4,500	4,499
Yuma Irrigation District (5,000 af M&I)	Yuma County	0	0	0	0	0	0	0	1,698	1,557
Yuma County Water Users' Association (14,701 af M&I)	Yuma County	0	0	0	0	0	0	0	0	0
Yuma Area Office (489.95 af M&I Conversion)	Yuma County	0	0	0	0	0	0	0	0	0
Yuma Mesa Fruit Growers	Yuma County	0	0	0	0	0	0	0	0	2,942
Yuma Mesa Irrigation & Drainage District (10,000 af M&I)	Yuma County	0	0	0	0	0	0	0	7,544	6,920
University of Arizona	Yuma County	0	0	0	0	0	0	0	22	205
Yuma Mesa Grapefruit Company (Camille Allec Jr.)	Yuma County	0	0	0	0	0	0	0	2	20
North Gila Valley Irrigation District (2,500 af M&I)	Yuma County	0	0	0	0	0	0	0	0	0
Yuma Axillary Project (Unit B)	Yuma County	0	0	0	0	0	0	0	536	491
Welton-Mohawk Irrigation and Drainage District (5,000 af M&I)	Yuma County	0	0	0	0	0	0	0	11,594	10,636
Gila Monster Farms (formerly Sturges)	Yuma County	0	0	0	0	0	0	0	178	1,635
Sturges, Harold (not taking water)	Yuma County	0	0	0	0	0	0	0	0	0
Sturges, Irma (not taking water)	Yuma County	0	0	0	0	0	0	0	0	0
Molina (Water Use Not Reported)	Yuma County	0	0	0	0	0	0	0	0	0
Gila Monster Farms (formerly Sturges)	Yuma County	0	0	0	0	0	0	0	0	0
Powers (Power, R.E. & P.) (2004 use 384 af over entitlement)	Yuma County	0	0	0	0	0	0	0	0	0
Zozaya (in MVIDD) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
North Gila Valley Irrigation District****	Yuma County	0	0	0	0	0	0	0	0	0
Yuma Axillary Project (Unit B)	Yuma County	0	0	0	0	0	0	0	0	0
Hulet (in MVIDD) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
Holpal (in MVIDD/formerly Hurschler) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
McKellips and Granite Reef Farms (in MVIDD) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
Sherill & Lafollette (in MVIDD) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
Yuma County Water Users' Association	Yuma County	0	0	0	0	0	0	0	0	0
Phillips, Milton and Jean (Water Use Not Reported)	Yuma County	0	0	0	0	0	0	0	0	0
Arizona Total		9,707	19,425	23,115	26,806	34,187	41,568	48,950	89,508	265,861
Agriculture Summary by County	Agriculture per County									
Coconino County		0	0	0	0	0	0	0	0	0
La Paz County	4	821	2,918	3,966	5,015	7,111	9,208	11,305	16,698	16,697
Maricopa County	0	0	0	0	0	0	0	0	0	0
Mohave County	6	3,010	6,020	7,525	9,030	12,040	15,050	18,060	25,801	25,800
Pinal County	1	3,600	5,937	5,937	5,937	5,937	5,937	5,937	5,937	5,936
Yuma County	32	2,276	4,550	5,687	6,825	9,099	11,373	13,648	41,072	217,426
Total Arizona Agriculture	43	9,707	19,425	23,115	26,806	34,187	41,568	48,950	89,508	265,862

Table Att. C-6
2060 Non-Indian Agricultural Shortages (Based on Diversions)

Arizona Agriculture	County	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
CAP Agricultural Relinquished Water Contracts under AWSA	Maricopa/Pinal/Pima	0	0	0	0	0	0	0	0	0
CAP Arizona State Land Department	Pinal County	4,123	5,359	5,359	5,359	5,359	5,359	5,359	5,359	5,359.3
Arizona State Land Department	Yuma County	770	1,541	1,927	2,312	3,083	3,854	4,624	6,607	6606.7
Beattie Farms Southwest (new contract) (2004 over use of 263 af)	Yuma County	129	259	324	388	518	647	777	1,110	1110
ChaCha (Curtis Family Trust) (Auza Farm and West Farm) (over 13 af)	Yuma County	245	490	613	735	980	1,225	1,470	2,100	2100.17
Cibola Resources	La Paz County	0	0	0	0	0	0	0	0	0
Cibola Valley Irrigation & Drainage District (M&I: 300 af)	La Paz County	177	1,530	2,207	2,883	4,236	5,589	6,943	10,423	10422.7
Curtis, Armon (Curry Family LTD)	Yuma County	35	70	88	105	140	175	210	300	300.025
Gila Monster Farms (formerly Sturges Farms Inc.)	Yuma County	168	336	419	503	670	838	1,005	1,436	1435.83
JRS Partners LLC (formerly essen Family Limite) (new contract) (2004 over use of 4,984 af)	Yuma County	126	252	315	378	504	630	756	1,080	1080.09
Mohave County Water Authority (new entitlement)	La Paz County	600	1,300	1,650	2,000	2,699	3,399	4,098	5,898	5897.68
Mohave Valley Irrigation and Drainage District (5,000 af M&I)	Mohave County	3,010	6,020	7,525	9,030	12,040	15,050	18,060	25,801	25801
North Baja LLC (formerly Jamar Produce) (72 af M&I)	La Paz County	44	88	110	132	176	220	264	377	377.224
Ogram Boys Enterprises (new contract)	Yuma County	108	216	270	324	432	540	647	925	924.615
Ogram, George	Yuma County	56	112	140	168	224	280	336	480	480
Pasquinelli, Gary and Barbara (formerly Ansel Hall)	Yuma County	57	114	142	170	227	284	340	486	486.194
Peach, John (2004 over use of 45 af)	Yuma County	53	106	132	159	212	265	319	455	455.385
Phillips, Milton and Jean	Yuma County	3	5	6	7	9	11	13	18	18.4615
Rayner Ranches	Yuma County	525	1,050	1,312	1,575	2,100	2,625	3,150	4,500	4499.82
Yuma Irrigation District (5,000 af M&I)	Yuma County	0	0	0	0	0	0	0	1,698	15576
Yuma County Water Users' Association (14,701 af M&I)	Yuma County	0	0	0	0	0	0	0	0	0
Yuma Area Office (489.95 af M&I Conversion)	Yuma County	0	0	0	0	0	0	0	0	0
Yuma Mesa Fruit Growers	Yuma County	0	0	0	0	0	0	0	0	2,94243
Yuma Mesa Irrigation & Drainage District (10,000 af M&I)	Yuma County	0	0	0	0	0	0	0	7,544	69208.3
University of Arizona	Yuma County	0	0	0	0	0	0	0	22	205.97
Yuma Mesa Grapefruit Company (Camille Allec Jr.)	Yuma County	0	0	0	0	0	0	0	2	20.5817
North Gila Valley Irrigation District (2,500 af M&I)	Yuma County	0	0	0	0	0	0	0	0	0
Yuma Axillary Project (Unit B)	Yuma County	0	0	0	0	0	0	0	536	4918.48
Wellton-Mohawk Irrigation and Drainage District (5,000 af M&I)	Yuma County	0	0	0	0	0	0	0	11,595	106368
Gila Monster Farms (formerly Sturges)	Yuma County	0	0	0	0	0	0	0	178	1635.55
Sturges, Harold (not taking water)	Yuma County	0	0	0	0	0	0	0	0	0
Sturges, Irma (not taking water)	Yuma County	0	0	0	0	0	0	0	0	0
Molina (Water Use Not Reported)	Yuma County	0	0	0	0	0	0	0	0	0
Gila Monster Farms (formerly Sturges)	Yuma County	0	0	0	0	0	0	0	0	0
Powers (Power, R.E. & P.) (2004 use 384 af over entitlement)	Yuma County	0	0	0	0	0	0	0	0	0
Zozaya (in MVIDD) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
North Gila Valley Irrigation District****	Yuma County	0	0	0	0	0	0	0	0	0
Yuma Axillary Project (Unit B)	Yuma County	0	0	0	0	0	0	0	0	0
Hulet (in MVIDD) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
Holpal (in MVIDD/formerly Hurschler) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
McKellips and Granite Reef Farms (in MVIDD) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
Sherill & Lafollette (in MVIDD) (Water Use Not Reported)	Mohave County	0	0	0	0	0	0	0	0	0
Yuma County Water Users' Association	Yuma County	0	0	0	0	0	0	0	0	0
Phillips, Milton and Jean (Water Use Not Reported)	Yuma County	0	0	0	0	0	0	0	0	0
Arizona Total		10,229	18,847	22,538	26,228	33,610	40,991	48,372	88,931	265,291
Agriculture Summary by County	Agriculture per County									
Coconino County	0	0	0	0	0	0	0	0	0	0
La Paz County	4	821	2,918	3,966	5,015	7,111	9,208	11,305	16,698	16697.58
Maricopa County	0	0	0	0	0	0	0	0	0	0
Mohave County	6	3,010	6,020	7,525	9,030	12,040	15,050	18,060	25,801	25800.99
Pinal County	1	4,123	5,359	5,359	5,359	5,359	5,359	5,359	5,359	5359.303
Yuma County	32	2,276	4,550	5,687	6,825	9,099	11,373	13,648	41,073	217432.7
Total Arizona Agriculture	43	10,229	18,847	22,538	26,228	33,610	40,991	48,372	88,931	265,291

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Attachment D

M&I Water Users Distribution of Shortages (2008-2060)

This attachment to Appendix G contains tables produced by the Shortage Allocation Model that show the distribution of shortages to Municipal and Industrial (M&I) entitlement holders within Arizona. The shortages shown on these tables are based on the consumptive use volumes of the affected entities. The tables show the distribution of shortages to both M&I entitlement holders within the CAP and other Arizona M&I entitlement holders, for the years 2008, 2017, 2026, 2027, 2040, and 2060.

Table Att. D-1
2008 M&I Shortages (Based on Consumptive Use)

CAP M&I	County	Split C	Ratio	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
Apache Junction (AZ Water Co)	Pinal County			0	0	0	0	0	0	1,202	5,808	6,000
Avra Coop	Pima County			0	0	0	0	0	0	0	0	0
AZ-American (Agua Fria)	Maricopa County			0	0	0	0	0	0	2,184	10,551	10,900
AZ-American (Paradise Valley)	Maricopa County			0	0	0	0	0	0	647	3,128	3,231
AZ-American (Sun City)	Maricopa County			0	0	0	0	0	0	839	4,055	4,189
AZ-American (Sun City West)	Maricopa County			0	0	0	0	0	0	475	2,296	2,372
AZ State Land Dept.	Maricopa County			0	0	0	0	0	0	140	678	700
ASARCO (Ray Mine)	Pima County			0	0	0	0	0	0	0	0	0
Avondale	Maricopa County			0	0	0	0	0	0	951	4,594	4,746
B&F Investment, LLC	La Paz County			0	0	0	0	0	0	0	0	0
Berneil Water Co (Cave Creek)	Maricopa County			0	0	0	0	0	0	0	0	0
Buckeye	Maricopa County			0	0	0	0	0	0	0	0	0
Carefree Water Co	Maricopa County			0	0	0	0	0	0	80	387	400
Casa Grande (AZ Water Co)	Pinal County			0	0	0	0	0	0	401	1,936	2,000
Cave Creek Water Co	Maricopa County			0	0	0	0	0	0	320	1,547	1,598
CAGR D	Maricopa County			0	0	0	0	0	0	1,552	7,498	7,746
Chandler*	Maricopa County			0	0	0	0	0	41	4,987	9,059	10,072
Chandler Heights Citrus ID	Maricopa County			0	0	0	0	0	0	0	0	0
Chaparral City Water Co	Maricopa County			0	0	0	0	0	0	954	4,609	4,761
Circle City Water Co	Maricopa County			0	0	0	0	0	0	0	0	0
Comm. Water Co (Green Valley)	Pima County			0	0	0	0	0	0	0	0	0
Coolidge (AZ Water Co)	Pinal County			0	0	0	0	0	0	0	0	0
El Mirage	Maricopa County			0	0	0	0	0	0	0	0	0
Eloy	Pinal County			0	0	0	0	0	0	435	2,101	2,171
Florence	Pinal County			0	0	0	0	0	0	410	1,982	2,048
Flowing Wells ID	Pima County			0	0	0	0	0	0	0	0	0
Gilbert	Maricopa County			0	0	0	0	0	16	2,987	8,540	10,105
Glendale	Maricopa County			0	0	0	0	0	7	3,524	14,411	15,456
Goodyear	Maricopa County			0	0	0	0	0	0	2,152	10,398	10,742
Green Valley DWID	Pima County			0	0	0	0	0	0	100	484	500
H2O Water Co	Maricopa County			0	0	0	0	0	0	0	0	0
Marana	Pima County			0	0	0	0	0	0	0	0	0
Maricopa County Parks & Rec	Maricopa County			0	0	0	0	0	0	126	610	630
Mesa*	Maricopa County			0	0	0	0	0	58	9,733	25,755	26,967
MDWID	Pima County			0	0	0	0	0	0	2,024	9,777	10,101
Oro Valley	Pima County			0	0	0	0	0	0	0	0	0
Peoria	Maricopa County			0	0	0	0	0	0	1,483	7,164	7,401
Phelps Dodge Miami	Gila County			0	0	0	0	0	0	0	0	0
Phoenix*	Maricopa County			0	0	0	0	0	390	60,867	151,226	155,981
Phoenix Memorial Park	Maricopa County			0	0	0	0	0	0	0	0	0
Pine Water Co	Gila County			0	0	0	0	0	0	0	0	0
Queen Creek Water Co	Maricopa County			0	0	0	0	0	0	70	337	348
Rio Verde Utilities	Maricopa County			0	0	0	0	0	0	163	786	812
San Tan ID	Maricopa County			0	0	0	0	0	0	0	0	0
Scottsdale*	Maricopa County			0	0	0	0	0	35	12,616	48,279	49,786
Spanish Trail Water Co	Pima County			0	0	0	0	0	0	0	0	0
Superior	Pinal County			0	0	0	0	0	0	0	0	0
Surprise	Maricopa County			0	0	0	0	0	0	923	4,459	4,606
Tempe	Maricopa County			0	0	0	0	0	0	888	4,200	4,358
Tonto Hills Utility Co	Maricopa County			0	0	0	0	0	0	0	0	0
Tucson	Pima County			0	0	0	0	0	0	16,782	81,068	83,750
Vail Water Co	Pima County			0	0	0	0	0	0	0	0	0

Table Att. D-1
2008 M&I Shortages (Based on Consumptive Use)

	County	Split C	Ratio	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
Valley Utilities Water Co	Maricopa County			0	0	0	0	0	0	0	0	0
Water Util. Comm. Fac. Dist. (AJ)	Pinal County			0	0	0	0	0	0	10	48	50
Water Util. Greater Buckeye	Maricopa County			0	0	0	0	0	0	0	0	0
Water Util. Greater Tonopah	Maricopa County			0	0	0	0	0	0	0	0	0
White Tank Sys. (AZ Water Co.)	Maricopa County			0	0	0	0	0	0	194	937	968
San Carlos (Phelps Dodge/Globe)	Gila County			0	0	0	0	0	0	0	0	0
State Reserved	All Counties in CAP			0	0	0	0	0	31	2,974	2,974	2,974
CAP M&I Subtotal				0	0	0	0	0	578	133,195	431,681	448,468.8
Arizona M&I												
Arizona State Land Department	Yuma County			0	0	0	0	0	0	0	275	290
Arizona State Parks Board - Contact Point	Mohave County			0	0	0	0	2	4	6	13	13
Arizona State Parks Board - Windsor Beach	Mohave County			0	0	0	0	0	0	0	19	20
Arizona-American Water Company	Mohave County			0	0	0	0	0	0	0	275	289
Brooke Water Company (formerly Graham)	La Paz County			0	0	0	0	0	0	0	48	53
Bullhead City (includes 6,000 af subcontract)	Mohave County			0	0	0	0	0	579	2,133	6,798	7,012
Bureau of Land Management	La Paz County			0	0	0	0	0	0	0	790	851
Cibola Valley Irrigation & Drainage District***** (M&I: 300 af)	La Paz County	M&I/Ag	0.039	3	39	57	76	112	149	185	295	300
City of Somerton (new contract)	Yuma County			54	107	134	161	214	267	321	481	488
City of Yuma (Smucker Park)	Yuma County			0	0	0	0	0	0	0	0	0
Crystal Beach Water Conservation District	Mohave County			0	0	0	2	12	21	31	59	60
Desert Lawn Memorial Park Association, Inc.	Yuma County			0	0	0	0	0	0	0	11	15
Ehrenburg Improvement District	La Paz County			39	78	98	117	157	196	235	353	358
Fisher's Landing Water and Sewer Works, LLC	Yuma County			3	7	9	11	15	18	22	33	34
Gold Dome Mining Corporation	Yuma County			0	0	0	0	0	0	0	0	0
Gold Standard Mines Corporation	Mohave County			0	0	0	0	0	0	0	0	0
Golden Shores Water Conservation District	Mohave County			0	0	0	0	0	0	0	409	429
Hillcrest Water Company	La Paz County			0	0	0	0	0	0	6	24	25
Lake Havasu City (includes 6,000 af subcontract)	Mohave County			0	128	982	1,836	3,545	5,253	6,962	12,087	12,322
Marble Canyon Company, Inc.	Coconino County			0	0	0	0	0	0	0	15	16
Martinez Lake Cabin Sites (recommended)	Yuma County			2	3	4	5	7	8	10	15	15
McAlister, Maurice L.	Mohave County			0	0	0	0	0	0	0	4	4
Mohave County Water Authority (recommended 3,500 af)	Mohave County			0	0	0	0	0	0	0	200	235
Mohave Valley Irrigation and Drainage District (5,000 af M&I)	Mohave County	M&I/Ag	0.264	547	1,094	1,368	1,642	2,189	2,736	3,283	4,925	5,000
Mohave Water Conservation District (includes 3,000 af subcontract)	Mohave County			0	0	0	0	0	0	0	451	500
North Baja LLC (formerly Jamar Produce) (72 af M&I)	La Paz County	M&I/Ag	0.214	8	16	20	24	31	39	47	71	72
Roy, Edward P. & Anna R.	Yuma County			0	0	1	1	1	1	1	1	1
Shepard Water Company	Yuma County			4	7	9	11	14	18	21	32	33
City of Parker	La Paz County			0	0	1	23	65	108	151	279	284
Town of Quartzsite	La Paz County			0	0	0	0	0	0	0	271	288
Verizon (formerly Continental Telephone)	La Paz County			0	0	1	1	1	1	1	1	1
Cibola National Wildlife Refuge	La Paz County			0	0	0	0	0	0	0	0	1,588
Yuma Irrigation District (5,000 af M&I)	Yuma County	M&I/Ag	0.152	0	0	0	0	0	0	0	0	1,038
National Park Service	Mohave County			0	0	0	0	0	0	0	0	153
Yuma Union High School	Yuma County			0	0	0	0	0	0	0	0	24
Union Pacific Railroad (formerly Southern Pacific Co.)	Yuma County			0	0	0	0	0	0	0	0	6
Kaman, Inc.	Yuma County			0	0	0	0	0	0	0	0	0
City of Yuma	Yuma County			0	0	0	0	0	0	0	0	5,039
Department of Navy MCAS	Yuma County			0	0	0	0	0	0	0	0	442
Yuma County Water Users' Association (14,701 af M&I)	Yuma County	M&I/Ag	0.000	0	0	0	0	0	0	0	0	0
Yuma Area Office (489.95 af M&I Conversion)	Yuma County			0	0	0	0	0	0	0	0	0
City of Yuma (cemetery)	Yuma County			0	0	0	0	0	0	0	0	0
Yuma Mesa Irrigation & Drainage District (10,000 af M&I)	Yuma County	M&I/Ag	0.063	0	0	0	0	0	0	0	0	2,075
Desert Lawn Memorial Park	Yuma County			0	0	0	0	0	0	0	0	29
North Gila Valley Irrigation District (2,500 af M&I)	Yuma County	M&I/Ag	0.000	0	0	0	0	0	0	0	0	0

Table Att. D-1
2008 M&I Shortages (Based on Consumptive Use)

	County	Split C M&I/Ag	Ratio	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
Wellton-Mohawk Irrigation and Drainage District (5,000 af M&I)	Yuma County		0.018	0	0	0	0	0	0	0	0	1,038
Chandler (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	0	888
Gilbert (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	0	1,403
Glendale (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	0	623
Mesa (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	0	573
Phoenix (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	0	1,038
Scottsdale (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	0	21
Tempe (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	0	21
Department of Army - Yuma Proving Ground	Yuma County			0	0	0	0	0	0	0	0	158
Bureau of Reclamation - Davis Dam	Mohave County			0	0	0	0	0	0	0	0	0
Imperial National Wildlife Refuge	La Paz County			0	0	0	0	0	0	0	0	751
Havasas Lake National Wildlife Refuge (2004 over use of 7,777 af)	Mohave County			0	0	0	0	0	0	0	0	1,005
Brooke Water Company (formerly Graham)	La Paz County			0	0	0	0	0	0	0	0	0
City of Parker	La Paz County			0	0	0	0	0	0	0	0	0
Miller (in MVIDD)	Mohave County			0	0	0	0	0	0	0	0	0
Swan (in MVIDD)	Mohave County			0	0	0	0	0	0	0	0	0
City of Yuma	Yuma County			0	0	0	0	0	0	0	0	0
Arizona M&I Subtotal:				660	1,481	2,683	3,908	6,363	9,398	13,415	28,234	46,917.2
M&I Summary by County	M&I per County											
Coconino County	1			0	0	0	0	0	0	0	15	16
Gila County	3			0	0	0	0	0	0	0	0	0
La Paz County	14			50	134	177	240	366	493	625	2,132	4,571
Maricopa County	36			0	0	0	0	0	547	108,856	325,501	338,875
Mohave County	20			547	1,222	2,350	3,480	5,747	8,593	12,415	25,239	27,042
Pima County	11			0	0	0	0	0	0	18,906	91,330	94,351
Pinal County	7			0	0	0	0	0	0	2,458	11,876	12,269
Yuma County	24			63	125	156	188	250	312	375	848	10,723
All Counties in CAP	1			0	0	0	0	0	31	2,974	2,974	2,974
(blank)	0			0	0	0	0	0	0	0	0	0
Total Arizona M&I:	117			660	1,481	2,683	3,908	6,363	9,976	146,610	459,916	490,821

Table Att. D-2
2017 M&I Shortages (Based on Consumptive Use)

CAP M&I	County	Split C	Ratio	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
Apache Junction (AZ Water Co)	Pinal County			0	0	0	13	1,081	2,143	3,204	6,000	6,000
Avra Coop	Pima County			0	0	0	0	0	0	0	0	0
AZ-American (Agua Fria)	Maricopa County			0	0	0	25	1,998	3,962	5,923	11,093	11,093
AZ-American (Paradise Valley)	Maricopa County			0	0	0	7	582	1,154	1,725	3,231	3,231
AZ-American (Sun City)	Maricopa County			0	0	0	9	754	1,496	2,237	4,189	4,189
AZ-American (Sun City West)	Maricopa County			0	0	0	5	427	847	1,267	2,372	2,372
AZ State Land Dept.	Maricopa County			0	0	0	2	126	250	374	700	700
ASARCO (Ray Mine)	Pima County			0	0	0	0	0	0	0	0	0
Avondale	Maricopa County			0	0	0	11	855	1,695	2,534	4,746	4,746
B&F Investment, LLC	La Paz County			0	0	0	0	0	0	0	0	0
Berneil Water Co (Cave Creek)	Maricopa County			0	0	0	0	0	0	0	0	0
Buckeye	Maricopa County			0	0	0	0	0	0	0	0	0
Carefree Water Co	Maricopa County			0	0	0	1	72	143	214	400	400
Casa Grande (AZ Water Co)	Pinal County			0	0	0	4	360	714	1,068	2,000	2,000
Cave Creek Water Co	Maricopa County			0	0	0	5	369	731	1,094	2,048	2,048
CAGR D	Maricopa County			0	0	0	17	1,395	2,766	4,136	7,746	7,746
Chandler*	Maricopa County			0	434	2,886	3,943	5,482	7,015	8,545	12,669	13,578
Chandler Heights Citrus ID	Maricopa County			0	0	0	0	0	0	0	0	0
Chaparral City Water Co	Maricopa County			0	0	0	13	1,027	2,038	3,046	5,705	5,705
Circle City Water Co	Maricopa County			0	0	0	0	0	0	0	0	0
Comm. Water Co (Green Valley)	Pima County			0	0	0	0	0	0	0	0	0
Coolidge (AZ Water Co)	Pinal County			0	0	0	0	0	0	0	0	0
El Mirage	Maricopa County			0	0	0	0	0	0	0	0	0
Eloy	Pinal County			0	0	0	5	391	775	1,159	2,171	2,171
Florence	Pinal County			0	0	0	5	369	731	1,094	2,048	2,048
Flowing Wells ID	Pima County			0	0	0	0	0	0	0	0	0
Gilbert	Maricopa County			0	170	1,130	1,553	2,840	4,121	5,400	8,916	10,353
Glendale	Maricopa County			0	75	502	714	3,236	5,747	8,255	14,929	15,566
Goodyear	Maricopa County			0	0	0	24	1,934	3,836	5,736	10,742	10,742
Green Valley DWID	Pima County			0	0	0	1	90	179	267	500	500
H2O Water Co	Maricopa County			0	0	0	0	0	0	0	0	0
Marana	Pima County			0	0	0	0	0	0	0	0	0
Maricopa County Parks & Rec	Maricopa County			0	0	0	1	116	230	344	645	645
Mesa*	Maricopa County			0	614	4,082	5,618	10,959	16,276	21,585	35,639	36,226
MDWID	Pima County			0	0	0	24	1,911	3,790	5,667	10,613	10,613
Oro Valley	Pima County			0	0	0	23	1,856	3,680	5,502	10,305	10,305
Peoria	Maricopa County			0	0	0	43	3,434	6,810	10,181	19,067	19,067
Phelps Dodge Miami	Gila County			0	0	0	0	0	0	0	0	0
Phoenix*	Maricopa County			0	4,121	27,414	37,581	61,433	85,180	108,894	171,506	172,569
Phoenix Memorial Park	Maricopa County			0	0	0	0	0	0	0	0	0
Pine Water Co	Gila County			0	0	0	0	0	0	0	0	0
Queen Creek Water Co	Maricopa County			0	0	0	1	63	124	186	348	348
Rio Verde Utilities	Maricopa County			0	0	0	2	146	290	434	812	812
San Tan ID	Maricopa County			0	0	0	0	0	0	0	0	0
Scottsdale*	Maricopa County			0	365	2,431	3,424	12,816	22,167	31,504	56,118	56,139
Spanish Trail Water Co	Pima County			0	0	0	0	0	0	0	0	0
Superior	Pinal County			0	0	0	0	0	0	0	0	0
Surprise	Maricopa County			0	0	0	23	1,846	3,660	5,473	10,249	10,249
Tempe	Maricopa County			0	3	17	33	800	1,564	2,327	4,340	4,361
Tonto Hills Utility Co	Maricopa County			0	0	0	0	0	0	0	0	0
Tucson	Pima County			0	0	0	320	25,693	50,954	76,181	142,672	142,672
Vail Water Co	Pima County			0	0	0	0	0	0	0	0	0

Table Att. D-2
2017 M&I Shortages (Based on Consumptive Use)

	County	Split C	Ratio	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
Valley Utilities Water Co	Maricopa County			0	0	0	0	0	0	0	0	0
Water Util. Comm. Fac. Dist. (AJ)	Pinal County			0	0	0	0	9	18	27	50	50
Water Util. Greater Buckeye	Maricopa County			0	0	0	0	0	0	0	0	0
Water Util. Greater Tonopah	Maricopa County			0	0	0	0	0	0	0	0	0
White Tank Sys. (AZ Water Co.)	Maricopa County			0	0	0	2	174	346	517	968	968
San Carlos (Phelps Dodge/Globe)	Gila County			0	0	0	0	0	0	0	0	0
State Reserved	All Counties in CAP			0	3,435	22,849	31,072	31,072	31,072	31,072	31,072	31,072
CAP M&I Subtotal				0	9,216	61,311	84,525	175,716	266,505	357,170	596,610	601,286.1
Arizona M&I												
Arizona State Land Department	Yuma County			0	0	0	0	0	110	226	531	531
Arizona State Parks Board - Contact Point	Mohave County			0	0	0	0	2	5	7	13	13
Arizona State Parks Board - Windsor Beach	Mohave County			0	0	0	0	0	0	2	20	20
Arizona-American Water Company	Mohave County			0	0	0	0	0	0	18	300	300
Brooke Water Company (formerly Graham)	La Paz County			0	0	0	0	0	0	0	53	53
Bullhead City (includes 6,000 af subcontract)	Mohave County			0	0	0	0	1,088	2,730	4,373	8,725	8,725
Bureau of Land Management	La Paz County			0	0	0	0	0	0	0	851	851
Cibola Valley Irrigation & Drainage District***** (M&I: 300 af)	La Paz County	M&I/Ag	0.039	5	43	63	82	121	159	198	300	300
City of Somerton (new contract)	Yuma County			57	113	141	170	226	282	339	488	488
City of Yuma (Smucker Park)	Yuma County			0	0	0	0	0	0	0	0	0
Crystal Beach Water Conservation District	Mohave County			0	3	8	13	23	33	43	69	69
Desert Lawn Memorial Park Association, Inc.	Yuma County			0	0	0	0	0	0	0	15	15
Ehrenburg Improvement District	La Paz County			41	83	103	124	165	207	248	358	358
Fisher's Landing Water and Sewer Works, LLC	Yuma County			4	8	10	11	15	19	23	34	34
Gold Dome Mining Corporation	Yuma County			0	0	0	0	0	0	0	0	0
Gold Standard Mines Corporation	Mohave County			0	0	0	0	0	0	0	0	0
Golden Shores Water Conservation District	Mohave County			0	0	0	0	0	0	98	508	508
Hillcrest Water Company	La Paz County			0	0	0	1	7	13	20	36	36
Lake Havasu City (includes 6,000 af subcontract)	Mohave County			1,237	3,042	3,944	4,846	6,651	8,456	10,261	15,043	15,043
Marble Canyon Company, Inc.	Coconino County			0	0	0	0	0	0	2	16	16
Martinez Lake Cabin Sites (recommended)	Yuma County			2	3	4	5	7	9	10	15	15
McAlister, Maurice L.	Mohave County			0	0	0	0	0	0	0	4	4
Mohave County Water Authority (recommended 3,500 af)	Mohave County			263	526	657	789	1,052	1,315	1,578	2,275	2,275
Mohave Valley Irrigation and Drainage District (5,000af M&I)	Mohave County	M&I/Ag	0.264	578	1,156	1,445	1,734	2,312	2,890	3,468	5,000	5,000
Mohave Water Conservation District (includes 3,000 af subcontract)	Mohave County			0	0	0	0	0	0	0	622	622
North Baja LLC (formerly Jamar Produce) (72af M&I)	La Paz County	M&I/Ag	0.214	8	17	21	25	33	42	50	72	72
Roy, Edward P. & Anna R.	Yuma County			0	1	1	1	1	1	1	1	1
Shepard Water Company	Yuma County			4	8	9	11	15	19	23	33	33
City of Parker	La Paz County			45	90	113	135	180	225	271	390	390
Town of Quartzsite	La Paz County			0	0	0	0	0	0	81	409	409
Verizon (formerly Continental Telephone)	La Paz County			0	1	1	1	1	1	1	1	1
Cibola National Wildlife Refuge	La Paz County			0	0	0	0	0	0	0	191	2,093
Yuma Irrigation District (5,000af M&I)	Yuma County	M&I/Ag	0.152	0	0	0	0	0	0	0	112	1,231
National Park Service	Mohave County			0	0	0	0	0	0	0	17	182
Yuma Union High School	Yuma County			0	0	0	0	0	0	0	3	29
Union Pacific Railroad (formerly Southern Pacific Co.)	Yuma County			0	0	0	0	0	0	0	1	7
Kaman, Inc.	Yuma County			0	0	0	0	0	0	0	0	0
City of Yuma	Yuma County			0	0	0	0	0	0	0	646	7,101
Department of Navy MCAS	Yuma County			0	0	0	0	0	0	0	48	524
Yuma County Water Users' Association (14,701af M&I)	Yuma County	M&I/Ag	0.000	0	0	0	0	0	0	0	0	0
Yuma Area Office (489.95af M&I Conversion)	Yuma County			0	0	0	0	0	0	0	0	0
City of Yuma (cemetery)	Yuma County			0	0	0	0	0	0	0	0	0
Yuma Mesa Irrigation & Drainage District (10,000af M&I)	Yuma County	M&I/Ag	0.063	0	0	0	0	0	0	0	224	2,461
Desert Lawn Memorial Park	Yuma County			0	0	0	0	0	0	0	3	34
North Gila Valley Irrigation District (2,500af M&I)	Yuma County	M&I/Ag	0.000	0	0	0	0	0	0	0	0	0

Table Att. D-2
2017 M&I Shortages (Based on Consumptive Use)

	County	Split C	Ratio	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
Wellton-Mohawk Irrigation and Drainage District (5,000af M&I)	Yuma County	M&I/Ag	0.018	0	0	0	0	0	0	0	112	1,231
Chandler (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	96	1,053
Gilbert (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	151	1,664
Glendale (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	67	738
Mesa (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	62	679
Phoenix (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	112	1,231
Scottsdale (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	2	25
Tempe (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	2	25
Department of Army - Yuma Proving Ground	Yuma County			0	0	0	0	0	0	0	17	187
Bureau of Reclamation - Davis Dam	Mohave County			0	0	0	0	0	0	0	0	0
Imperial National Wildlife Refuge	La Paz County			0	0	0	0	0	0	0	81	891
Havasas Lake National Wildlife Refuge (2004 over use of 7,777af)	Mohave County			0	0	0	0	0	0	0	108	1,192
Brooke Water Company (formerly Graham)	La Paz County			0	0	0	0	0	0	0	0	0
City of Parker	La Paz County			0	0	0	0	0	0	0	0	0
Miller (in MVIDD)	Mohave County			0	0	0	0	0	0	0	0	0
Swan (in MVIDD)	Mohave County			0	0	0	0	0	0	0	0	0
City of Yuma	Yuma County			0	0	0	0	0	0	0	0	0
Arizona M&I Subtotal:				2,244	5,092	6,520	7,948	11,900	16,517	21,340	38,236	58,759.14
M&I Summary by County	M&I per County											
Coconino County	1			0	0	0	0	0	0	2	16	16
Gila County	3			0	0	0	0	0	0	0	0	0
La Paz County	14			100	233	300	368	507	647	868	2,742	5,454
Maricopa County	36			0	5,782	38,462	53,058	112,885	172,448	231,930	389,179	393,855
Mohave County	20			2,078	4,727	6,054	7,382	11,128	15,429	19,848	32,705	33,953
Pima County	11			0	0	0	368	29,550	58,603	87,617	164,090	164,090
Pinal County	7			0	0	0	28	2,209	4,382	6,551	12,269	12,269
Yuma County	24			66	132	165	198	264	440	621	2,282	13,922
All Counties in CAP	1			0	3,435	22,849	31,072	31,072	31,072	31,072	31,072	31,072
(blank)	0			0	0	0	0	0	0	0	0	0
Total Arizona M&I:	117			2,244	14,308	67,831	92,473	187,616	283,022	378,510	634,354	654,630

Table Att. D-3
2026 M&I Shortages (Based on Consumptive Use)

CAP M&I	County	Split C	Ratio	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
Apache Junction (AZ Water Co)	Pinal County			0	0	186	681	1,631	2,580	3,528	6,000	6,000
Avra Coop	Pima County			0	0	11	40	96	152	208	354	354
AZ-American (Agua Fria)	Maricopa County			0	0	343	1,260	3,015	4,770	6,522	11,093	11,093
AZ-American (Paradise Valley)	Maricopa County			0	0	100	367	878	1,389	1,900	3,231	3,231
AZ-American (Sun City)	Maricopa County			0	0	130	476	1,139	1,801	2,463	4,189	4,189
AZ-American (Sun City West)	Maricopa County			0	0	73	269	645	1,020	1,395	2,372	2,372
AZ State Land Dept.	Maricopa County			0	0	284	1,042	2,495	3,946	5,396	9,177	9,177
ASARCO (Ray Mine)	Pima County			0	0	284	1,043	2,497	3,951	5,402	9,188	9,188
Avondale	Maricopa County			0	0	156	572	1,370	2,167	2,963	5,039	5,039
B&F Investment, LLC	La Paz County			0	0	0	0	0	0	0	0	0
Berneil Water Co (Cave Creek)	Maricopa County			0	0	3	10	24	38	51	88	88
Buckeye	Maricopa County			0	0	0	1	3	5	6	11	11
Carefree Water Co	Maricopa County			0	0	25	90	216	341	467	794	794
Casa Grande (AZ Water Co)	Pinal County			0	0	155	569	1,362	2,155	2,947	5,012	5,012
Cave Creek Water Co	Maricopa County			0	0	74	273	654	1,035	1,415	2,406	2,406
CAGR D	Maricopa County			0	0	240	880	2,106	3,331	4,554	7,746	7,746
Chandler*	Maricopa County			1,171	3,477	4,192	4,907	6,276	7,646	9,012	12,675	13,574
Chandler Heights Citrus ID	Maricopa County			0	0	4	16	37	59	81	138	138
Chaparral City Water Co	Maricopa County			0	0	224	822	1,967	3,111	4,254	7,235	7,235
Circle City Water Co	Maricopa County			0	0	53	195	468	740	1,011	1,720	1,720
Comm. Water Co (Green Valley)	Pima County			0	0	39	142	340	538	735	1,250	1,250
Coolidge (AZ Water Co)	Pinal County			0	0	27	99	238	376	514	875	875
El Mirage	Maricopa County			0	0	7	25	60	96	131	222	222
Eloy	Pinal County			0	0	67	247	590	934	1,276	2,171	2,171
Florence	Pinal County			0	0	63	233	557	881	1,204	2,048	2,048
Flowing Wells ID	Pima County			0	0	59	216	518	819	1,120	1,905	1,905
Gilbert	Maricopa County			459	1,362	1,761	2,359	3,504	4,648	5,791	8,926	10,347
Glendale	Maricopa County			204	604	1,162	2,444	4,900	7,356	9,807	16,269	16,899
Goodyear	Maricopa County			0	0	333	1,220	2,920	4,619	6,316	10,742	10,742
Green Valley DWID	Pima County			0	0	34	126	302	478	654	1,113	1,113
H2O Water Co	Maricopa County			0	0	2	7	17	28	38	64	64
Marana	Pima County			0	0	1	2	6	9	12	21	21
Maricopa County Parks & Rec	Maricopa County			0	0	20	75	179	284	388	660	660
Mesa*	Maricopa County			1,657	4,919	6,717	9,830	15,793	21,754	27,705	43,292	43,872
MDWID	Pima County			0	0	369	1,354	3,241	5,128	7,011	11,924	11,924
Oro Valley	Pima County			0	0	319	1,170	2,801	4,432	6,059	10,305	10,305
Peoria	Maricopa County			0	0	781	2,866	6,860	10,852	14,838	25,236	25,236
Phelps Dodge Miami	Gila County			0	0	39	144	346	547	748	1,271	1,271
Phoenix*	Maricopa County			11,129	33,033	41,432	52,512	73,737	94,956	116,139	171,514	172,565
Phoenix Memorial Park	Maricopa County			0	0	1	4	10	16	22	37	37
Pine Water Co	Gila County			0	0	2	8	19	30	41	70	70
Queen Creek Water Co	Maricopa County			0	0	11	40	95	150	205	348	348
Rio Verde Utilities	Maricopa County			0	0	25	92	221	349	477	812	812
San Tan ID	Maricopa County			0	0	3	12	28	44	61	103	103
Scottsdale*	Maricopa County			987	2,929	4,941	9,304	17,661	26,016	34,357	56,118	56,139
Spanish Trail Water Co	Pima County			0	0	41	151	361	571	781	1,329	1,329
Superior	Pinal County			0	0	4	14	34	54	73	125	125
Surprise	Maricopa County			0	0	317	1,164	2,786	4,407	6,026	10,249	10,249
Tempe	Maricopa County			7	20	157	513	1,196	1,879	2,560	4,340	4,361
Tonto Hills Utility Co	Maricopa County			0	0	1	4	8	13	18	31	31
Tucson	Pima County			0	0	4,437	16,277	38,960	61,636	84,274	143,328	143,328
Vail Water Co	Pima County			0	0	25	92	221	349	478	812	812

Table Att. D-3
2026 M&I Shortages (Based on Consumptive Use)

	County	Split C	Ratio	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
Valley Utilities Water Co	Maricopa County			0	0	3	12	30	47	64	109	109
Water Util. Comm. Fac. Dist. (AJ)	Pinal County			0	0	40	148	355	561	767	1,305	1,305
Water Util. Greater Buckeye	Maricopa County			0	0	1	2	5	8	11	19	19
Water Util. Greater Tonopah	Maricopa County			0	0	1	3	8	12	16	28	28
White Tank Sys. (AZ Water Co.)	Maricopa County			0	0	30	110	263	416	569	968	968
San Carlos (Phelps Dodge/Globe)	Gila County			0	0	246	902	2,158	3,414	4,668	7,938	7,938
State Reserved	All Counties in CAP			17,664	52,430	59,171	59,171	59,171	59,171	59,171	59,171	59,171
CAP M&I Subtotal				33,278	98,774	129,228	176,610	267,377	358,118	448,703	685,516	690,139.5
Arizona M&I												
Arizona State Land Department	Yuma County			0	0	0	34	150	265	381	684	684
Arizona State Parks Board - Contact Point	Mohave County			0	0	0	0	2	5	7	13	13
Arizona State Parks Board - Windsor Beach	Mohave County			0	0	0	0	0	0	2	20	20
Arizona-American Water Company	Mohave County			0	0	0	0	0	0	28	308	308
Brooke Water Company (formerly Graham)	La Paz County			0	0	0	0	0	0	0	53	53
Bullhead City (includes 6,000 af subcontract)	Mohave County			0	0	0	776	2,424	4,072	5,720	10,040	10,040
Bureau of Land Management	La Paz County			0	0	0	0	0	0	0	851	851
Cibola Valley Irrigation & Drainage District***** (M&I: 300af)	La Paz County	M&I/Ag	0.039	5	44	63	82	121	160	198	300	300
City of Somerton (new contract)	Yuma County			57	114	142	170	227	283	340	488	488
City of Yuma (Smucker Park)	Yuma County			0	0	0	0	0	0	0	0	0
Crystal Beach Water Conservation District	Mohave County			0	10	15	20	30	40	50	76	76
Desert Lawn Memorial Park Association, Inc.	Yuma County			0	0	0	0	0	0	0	15	15
Ehrenburg Improvement District	La Paz County			41	83	104	124	166	208	249	358	358
Fisher's Landing Water and Sewer Works, LLC	Yuma County			4	8	10	12	16	20	24	34	34
Gold Dome Mining Corporation	Yuma County			0	0	0	0	0	0	0	0	0
Gold Standard Mines Corporation	Mohave County			0	0	0	0	0	0	0	0	0
Golden Shores Water Conservation District	Mohave County			0	0	0	0	0	0	144	551	551
Hillcrest Water Company	La Paz County			0	3	6	9	15	22	28	44	44
Lake Havasu City (includes 6,000 af subcontract)	Mohave County			1,811	3,621	4,527	5,432	7,243	9,054	10,864	15,611	15,611
Marble Canyon Company, Inc.	Coconino County			0	0	0	0	0	0	2	16	16
Martinez Lake Cabin Sites (recommended)	Yuma County			2	3	4	5	7	9	10	15	15
McAlister, Maurice L.	Mohave County			0	0	0	0	0	0	0	4	4
Mohave County Water Authority (recommended 3,500af)	Mohave County			264	528	659	791	1,055	1,319	1,583	2,275	2,275
Mohave Valley Irrigation and Drainage District (5,000af M&I)	Mohave County	M&I/Ag	0.264	580	1,160	1,450	1,740	2,320	2,900	3,480	5,000	5,000
Mohave Water Conservation District (includes 6,000 af subcontract)	Mohave County			0	0	0	0	0	0	0	716	716
North Baja LLC (formerly Jamar Produce) (72af M&I)	La Paz County	M&I/Ag	0.214	8	17	21	25	33	42	50	72	72
Roy, Edward P. & Anna R.	Yuma County			0	1	1	1	1	1	1	1	1
Shepard Water Company	Yuma County			4	8	9	11	15	19	23	33	33
City of Parker	La Paz County			45	91	113	136	181	226	271	390	390
Town of Quartzsite	La Paz County			0	0	0	0	0	43	167	492	492
Verizon (formerly Continental Telephone)	La Paz County			0	1	1	1	1	1	1	1	1
Cibola National Wildlife Refuge	La Paz County			0	0	0	0	0	0	0	326	3,336
Yuma Irrigation District (5,000af M&I)	Yuma County	M&I/Ag	0.152	0	0	0	0	0	0	0	120	1,226
National Park Service	Mohave County			0	0	0	0	0	0	0	18	181
Yuma Union High School	Yuma County			0	0	0	0	0	0	0	3	29
Union Pacific Railroad (formerly Southern Pacific Co.)	Yuma County			0	0	0	0	0	0	0	1	7
Kaman, Inc.	Yuma County			0	0	0	0	0	0	0	0	0
City of Yuma	Yuma County			0	0	0	0	0	0	0	809	8,291
Department of Navy MCAS	Yuma County			0	0	0	0	0	0	0	51	522
Yuma County Water Users' Association (14,701af M&I)	Yuma County	M&I/Ag	0.000	0	0	0	0	0	0	0	0	0
Yuma Area Office (489,95af M&I Conversion)	Yuma County			0	0	0	0	0	0	0	0	0
City of Yuma (cemetery)	Yuma County			0	0	0	0	0	0	0	0	0
Yuma Mesa Irrigation & Drainage District (10,000af M&I)	Yuma County	M&I/Ag	0.063	0	0	0	0	0	0	0	239	2,452
Desert Lawn Memorial Park	Yuma County			0	0	0	0	0	0	0	3	34
North Gila Valley Irrigation District (2,500af M&I)	Yuma County	M&I/Ag	0.000	0	0	0	0	0	0	0	0	0

Table Att. D-3
2026 M&I Shortages (Based on Consumptive Use)

	County	Split C	Ratio	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
Wellton-Mohawk Irrigation and Drainage District (5,000af M&I)	Yuma County	M&I/Ag	0.018	0	0	0	0	0	0	0	120	1,226
Chandler (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	102	1,049
Gilbert (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	162	1,658
Glendale (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	72	736
Mesa (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	66	677
Phoenix (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	120	1,226
Scottsdale (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	2	25
Tempe (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	2	25
Department of Army - Yuma Proving Ground	Yuma County			0	0	0	0	0	0	0	18	186
Bureau of Reclamation - Davis Dam	Mohave County			0	0	0	0	0	0	0	0	0
Imperial National Wildlife Refuge	La Paz County			0	0	0	0	0	0	0	87	887
Havas Lake National Wildlife Refuge (2004 over use of 7,777af)	Mohave County			0	0	0	0	0	0	0	116	1,187
Brooke Water Company (formerly Graham)	La Paz County			0	0	0	0	0	0	0	0	0
City of Parker	La Paz County			0	0	0	0	0	0	0	0	0
Miller (in MVIDD)	Mohave County			0	0	0	0	0	0	0	0	0
Swan (in MVIDD)	Mohave County			0	0	0	0	0	0	0	0	0
City of Yuma	Yuma County			0	0	0	0	0	0	0	0	0
Arizona M&I Subtotal:				2,821	5,688	7,123	9,369	14,006	18,686	23,623	40,897	63,418.86
M&I Summary by County	M&I per County											
Coconino County	1			0	0	0	0	0	0	2	16	16
Gila County	3			0	0	287	1,054	2,523	3,991	5,457	9,280	9,280
La Paz County	14			100	237	307	377	517	700	965	2,974	6,785
Maricopa County	36			15,614	46,344	63,608	93,778	151,573	209,351	267,031	418,001	422,625
Mohave County	20			2,654	5,318	6,651	8,759	13,074	17,389	21,878	34,748	35,982
Pima County	11			0	0	5,619	20,616	49,344	78,064	106,734	181,528	181,528
Pinal County	7			0	0	543	1,991	4,767	7,541	10,311	17,536	17,536
Yuma County	24			67	133	166	233	415	596	778	2,633	15,242
All Counties in CAP	1			17,664	52,430	59,171	59,171	59,171	59,171	59,171	59,171	59,171
(blank)	0			0	0	0	0	0	0	0	0	0
Total Arizona M&I:	117			36,099	104,462	136,351	185,979	281,383	376,803	472,326	725,886	748,165

Table Att. D-4
2027 M&I Shortages (Based on Consumptive Use)

CAP M&I	County	Split C	Ratio	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
Apache Junction (AZ Water Co)	Pinal County			0	0	263	751	1,689	2,626	3,562	6,000	6,000
Avra Coop	Pima County			0	0	18	51	114	177	240	404	404
AZ-American (Agua Fria)	Maricopa County			0	0	485	1,389	3,122	4,855	6,585	11,093	11,093
AZ-American (Paradise Valley)	Maricopa County			0	0	141	404	909	1,414	1,918	3,231	3,231
AZ-American (Sun City)	Maricopa County			0	0	183	524	1,179	1,833	2,487	4,189	4,189
AZ-American (Sun City West)	Maricopa County			0	0	104	297	668	1,038	1,408	2,372	2,372
AZ State Land Dept.	Maricopa County			0	0	455	1,300	2,924	4,547	6,167	10,388	10,388
ASARCO (Ray Mine)	Pima County			0	0	459	1,314	2,955	4,596	6,233	10,500	10,500
Avondale	Maricopa County			0	0	222	636	1,430	2,224	3,016	5,081	5,081
B&F Investment, LLC	La Paz County			0	0	0	0	0	0	0	0	0
Berneil Water Co (Cave Creek)	Maricopa County			0	0	4	13	28	44	59	100	100
Buckeye	Maricopa County			0	0	1	2	4	5	7	13	13
Carefree Water Co	Maricopa County			0	0	37	106	239	372	505	850	850
Casa Grande (AZ Water Co)	Pinal County			0	0	238	681	1,532	2,382	3,231	5,442	5,442
Cave Creek Water Co	Maricopa County			0	0	105	301	677	1,053	1,428	2,406	2,406
CAGR D	Maricopa County			0	0	339	970	2,180	3,390	4,598	7,746	7,746
Chandler*	Maricopa County			1,597	3,651	4,303	5,007	6,360	7,712	9,061	12,676	13,574
Chandler Heights Citrus ID	Maricopa County			0	0	7	20	44	69	93	158	158
Chaparral City Water Co	Maricopa County			0	0	325	929	2,089	3,248	4,405	7,421	7,421
Circle City Water Co	Maricopa County			0	0	86	246	553	860	1,167	1,966	1,966
Comm. Water Co (Green Valley)	Pima County			0	0	63	179	402	625	848	1,429	1,429
Coolidge (AZ Water Co)	Pinal County			0	0	44	125	281	438	594	1,000	1,000
El Mirage	Maricopa County			0	0	11	32	71	111	151	254	254
Eloy	Pinal County			0	0	95	272	611	950	1,289	2,171	2,171
Florence	Pinal County			0	0	90	256	576	896	1,216	2,048	2,048
Flowing Wells ID	Pima County			0	0	95	273	613	953	1,292	2,177	2,177
Gilbert	Maricopa County			625	1,430	1,854	2,443	3,573	4,704	5,832	8,927	10,346
Glendale	Maricopa County			277	634	1,369	2,649	5,103	7,558	10,008	16,460	17,090
Goodyear	Maricopa County			0	0	470	1,345	3,023	4,701	6,377	10,742	10,742
Green Valley DWID	Pima County			0	0	53	150	338	525	712	1,200	1,200
H2O Water Co	Maricopa County			0	0	3	9	21	32	44	74	74
Marana	Pima County			0	0	1	3	7	10	14	24	24
Maricopa County Parks & Rec	Maricopa County			0	0	29	83	186	289	392	660	660
Mesa*	Maricopa County			2,259	5,164	7,229	10,350	16,341	22,331	28,310	43,953	44,532
MDWID	Pima County			0	0	529	1,514	3,404	5,294	7,180	12,095	12,095
Oro Valley	Pima County			0	0	451	1,290	2,900	4,510	6,117	10,305	10,305
Peoria	Maricopa County			0	0	1,104	3,159	7,103	11,045	14,981	25,236	25,236
Phelps Dodge Miami	Gila County			0	0	64	182	409	636	863	1,453	1,453
Phoenix*	Maricopa County			15,168	34,683	43,149	54,069	75,028	95,981	116,898	171,514	172,564
Phoenix Memorial Park	Maricopa County			0	0	2	5	12	18	25	42	42
Pine Water Co	Gila County			0	0	4	10	23	35	48	81	81
Queen Creek Water Co	Maricopa County			0	0	15	44	98	152	207	348	348
Rio Verde Utilities	Maricopa County			0	0	36	102	229	355	482	812	812
San Tan ID	Maricopa County			0	0	5	15	33	52	70	118	118
Scottsdale*	Maricopa County			1,345	3,076	5,617	9,917	18,170	26,420	34,656	56,118	56,139
Spanish Trail Water Co	Pima County			0	0	66	190	427	665	901	1,519	1,519
Superior	Pinal County			0	0	6	18	40	62	85	143	143
Surprise	Maricopa County			0	0	449	1,283	2,885	4,486	6,084	10,249	10,249
Tempe	Maricopa County			9	21	212	563	1,237	1,912	2,585	4,340	4,361
Tonto Hills Utility Co	Maricopa County			0	0	2	4	10	16	21	36	36
Tucson	Pima County			0	0	6,276	17,953	40,366	62,772	85,140	143,422	143,422
Vail Water Co	Pima County			0	0	41	116	261	406	551	929	929

Table Att. D-4
2027 M&I Shortages (Based on Consumptive Use)

	County	Split C	Ratio	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
Valley Utilities Water Co	Maricopa County			0	0	5	16	35	55	74	125	125
Water Util. Comm. Fac. Dist. (AJ)	Pinal County			0	0	65	186	418	650	881	1,485	1,485
Water Util. Greater Buckeye	Maricopa County			0	0	1	3	6	9	13	22	22
Water Util. Greater Tonopah	Maricopa County			0	0	1	4	9	14	19	32	32
White Tank Sys. (AZ Water Co.)	Maricopa County			0	0	42	121	272	424	575	968	968
San Carlos (Phelps Dodge/Globe)	Gila County			0	0	397	1,136	2,553	3,971	5,386	9,073	9,073
State Reserved	All Counties in CAP			24,075	55,048	59,171	59,171	59,171	59,171	59,171	59,171	59,171
CAP M&I Subtotal				45,356	103,707	136,891	184,179	274,944	365,678	456,259	692,785	697,401.8
Arizona M&I												
Arizona State Land Department	Yuma County			0	0	0	43	159	275	390	693	693
Arizona State Parks Board - Contact Point	Mohave County			0	0	0	0	2	5	7	13	13
Arizona State Parks Board - Windsor Beach	Mohave County			0	0	0	0	0	0	2	20	20
Arizona-American Water Company	Mohave County			0	0	0	0	0	0	29	309	309
Brooke Water Company (formerly Graham)	La Paz County			0	0	0	0	0	0	0	53	53
Bullhead City (includes 6,000 af subcontract)	Mohave County			0	0	77	901	2,550	4,198	5,847	10,163	10,163
Bureau of Land Management	La Paz County			0	0	0	0	0	0	0	851	851
Cibola Valley Irrigation & Drainage District***** (M&I: 300af)	La Paz County	M&I/Ag	0.039	5	44	63	82	121	160	199	300	300
City of Somerton (new contract)	Yuma County			57	114	142	170	227	283	340	488	488
City of Yuma (Smucker Park)	Yuma County			0	0	0	0	0	0	0	0	0
Crystal Beach Water Conservation District	Mohave County			0	10	15	20	30	40	50	76	76
Desert Lawn Memorial Park Association, Inc.	Yuma County			0	0	0	0	0	0	0	15	15
Ehrenburg Improvement District	La Paz County			41	83	104	124	166	208	249	358	358
Fisher's Landing Water and Sewer Works, LLC	Yuma County			4	8	10	12	16	20	24	34	34
Gold Dome Mining Corporation	Yuma County			0	0	0	0	0	0	0	0	0
Gold Standard Mines Corporation	Mohave County			0	0	0	0	0	0	0	0	0
Golden Shores Water Conservation District	Mohave County			0	0	0	0	0	0	148	554	554
Hillcrest Water Company	La Paz County			0	3	6	10	16	22	29	45	45
Lake Havasu City (includes 6,000 af subcontract)	Mohave County			1,811	3,623	4,528	5,434	7,245	9,057	10,868	15,611	15,611
Marble Canyon Company, Inc.	Coconino County			0	0	0	0	0	0	2	16	16
Martinez Lake Cabin Sites (recommended)	Yuma County			2	3	4	5	7	9	10	15	15
McAlister, Maurice L.	Mohave County			0	0	0	0	0	0	0	4	4
Mohave County Water Authority (recommended 3,500af)	Mohave County			264	528	660	792	1,056	1,320	1,584	2,275	2,275
Mohave Valley Irrigation and Drainage District (5,000af M&I)	Mohave County	M&I/Ag	0.264	580	1,160	1,450	1,740	2,321	2,901	3,481	5,000	5,000
Mohave Water Conservation District (includes 3,000 af subcontract)	Mohave County			0	0	0	0	0	0	0	724	724
North Baja LLC (formerly Jamar Produce) (72af M&I)	La Paz County	M&I/Ag	0.214	8	17	21	25	33	42	50	72	72
Roy, Edward P. & Anna R.	Yuma County			0	1	1	1	1	1	1	1	1
Shepard Water Company	Yuma County			4	8	9	11	15	19	23	33	33
City of Parker	La Paz County			45	91	113	136	181	226	272	390	390
Town of Quartzsite	La Paz County			0	0	0	0	0	50	174	499	499
Verizon (formerly Continental Telephone)	La Paz County			0	1	1	1	1	1	1	1	1
Cibola National Wildlife Refuge	La Paz County			0	0	0	0	0	0	0	348	3,542
Yuma Irrigation District (5,000af M&I)	Yuma County	M&I/Ag	0.152	0	0	0	0	0	0	0	120	1,225
National Park Service	Mohave County			0	0	0	0	0	0	0	18	181
Yuma Union High School	Yuma County			0	0	0	0	0	0	0	3	29
Union Pacific Railroad (formerly Southern Pacific Co.)	Yuma County			0	0	0	0	0	0	0	1	7
Kaman, Inc.	Yuma County			0	0	0	0	0	0	0	0	0
City of Yuma	Yuma County			0	0	0	0	0	0	0	828	8,424
Department of Navy MCAS	Yuma County			0	0	0	0	0	0	0	51	522
Yuma County Water Users' Association (14,701af M&I)	Yuma County	M&I/Ag	0.000	0	0	0	0	0	0	0	0	0
Yuma Area Office (489,95af M&I Conversion)	Yuma County			0	0	0	0	0	0	0	0	0
City of Yuma (cemetery)	Yuma County			0	0	0	0	0	0	0	0	0
Yuma Mesa Irrigation & Drainage District (10,000af M&I)	Yuma County	M&I/Ag	0.063	0	0	0	0	0	0	0	241	2,450
Desert Lawn Memorial Park	Yuma County			0	0	0	0	0	0	0	3	34
North Gila Valley Irrigation District (2,500af M&I)	Yuma County	M&I/Ag	0.000	0	0	0	0	0	0	0	0	0

Table Att. D-4
2027 M&I Shortages (Based on Consumptive Use)

	County	Split C	Ratio	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
Wellton-Mohawk Irrigation and Drainage District (5,000af M&I)	Yuma County	M&I/Ag	0.018	0	0	0	0	0	0	0	120	1,225
Chandler (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	103	1,048
Gilbert (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	163	1,657
Glendale (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	72	735
Mesa (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	66	676
Phoenix (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	120	1,225
Scottsdale (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	2	24
Tempe (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	2	24
Department of Army - Yuma Proving Ground	Yuma County			0	0	0	0	0	0	0	18	186
Bureau of Reclamation - Davis Dam	Mohave County			0	0	0	0	0	0	0	0	0
Imperial National Wildlife Refuge	La Paz County			0	0	0	0	0	0	0	87	886
Havas Lake National Wildlife Refuge (2004 over use of 7,777af)	Mohave County			0	0	0	0	0	0	0	117	1,186
Brooke Water Company (formerly Graham)	La Paz County			0	0	0	0	0	0	0	0	0
City of Parker	La Paz County			0	0	0	0	0	0	0	0	0
Miller (in MVIDD)	Mohave County			0	0	0	0	0	0	0	0	0
Swan (in MVIDD)	Mohave County			0	0	0	0	0	0	0	0	0
City of Yuma	Yuma County			0	0	0	0	0	0	0	0	0
Arizona M&I Subtotal:				2,822	5,691	7,204	9,508	14,146	18,835	23,778	41,100	63,900.08
M&I Summary by County	M&I per County											
Coconino County	1			0	0	0	0	0	0	2	16	16
Gila County	3			0	0	464	1,328	2,985	4,642	6,296	10,606	10,606
La Paz County	14			100	237	308	378	518	708	973	3,005	6,998
Maricopa County	36			21,281	48,659	68,403	98,358	155,853	213,328	270,706	420,718	425,335
Mohave County	20			2,655	5,321	6,731	8,888	13,204	17,521	22,016	34,885	36,117
Pima County	11			0	0	8,052	23,033	51,788	80,533	109,229	184,002	184,002
Pinal County	7			0	0	800	2,289	5,147	8,004	10,856	18,288	18,288
Yuma County	24			67	133	166	242	424	606	787	2,665	15,380
All Counties in CAP	1			24,075	55,048	59,171	59,171	59,171	59,171	59,171	59,171	59,171
(blank)	0			0	0	0	0	0	0	0	0	0
Total Arizona M&I:	117			48,178	109,399	144,095	193,686	289,090	384,513	480,037	733,355	755,912

Table Att. D-5
2040 M&I Shortages (Based on Consumptive Use)

CAP M&I	County	Split C	Ratio	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
Apache Junction (AZ Water Co)	Pinal County			0	350	850	1,284	2,136	2,988	3,835	6,000	6,000
Avra Coop	Pima County			0	47	114	173	288	402	516	808	808
AZ-American (Agua Fria)	Maricopa County			0	647	1,571	2,374	3,950	5,524	7,089	11,093	11,093
AZ-American (Paradise Valley)	Maricopa County			0	188	458	691	1,150	1,609	2,065	3,231	3,231
AZ-American (Sun City)	Maricopa County			0	244	593	896	1,491	2,086	2,677	4,189	4,189
AZ-American (Sun City West)	Maricopa County			0	138	336	508	845	1,181	1,516	2,372	2,372
AZ State Land Dept.	Maricopa County			0	1,170	2,844	4,296	7,148	9,997	12,830	20,076	20,076
ASARCO (Ray Mine)	Pima County			0	1,224	2,975	4,494	7,477	10,457	13,421	21,000	21,000
Avondale	Maricopa County			0	316	767	1,159	1,928	2,697	3,461	5,416	5,416
B&F Investment, LLC	La Paz County			0	0	0	0	0	0	0	0	0
Berneil Water Co (Cave Creek)	Maricopa County			0	12	28	43	71	100	128	200	200
Buckeye	Maricopa County			0	1	4	5	9	12	16	25	25
Carefree Water Co	Maricopa County			0	76	184	278	463	647	831	1,300	1,300
Casa Grande (AZ Water Co)	Pinal County			0	518	1,258	1,901	3,163	4,424	5,678	8,884	8,884
Cave Creek Water Co	Maricopa County			0	140	341	515	857	1,198	1,538	2,406	2,406
CAGRD	Maricopa County			0	452	1,097	1,658	2,758	3,857	4,950	7,746	7,746
Chandler*	Maricopa County			1,565	3,085	3,807	4,433	5,662	6,890	8,112	11,344	12,232
Chandler Heights Citrus ID	Maricopa County			0	18	45	67	112	157	201	315	315
Chaparral City Water Co	Maricopa County			0	519	1,262	1,907	3,172	4,436	5,694	8,909	8,909
Circle City Water Co	Maricopa County			0	229	557	841	1,400	1,958	2,513	3,932	3,932
Comm. Water Co (Green Valley)	Pima County			0	167	405	612	1,018	1,423	1,827	2,858	2,858
Coolidge (AZ Water Co)	Pinal County			0	117	283	428	712	996	1,278	2,000	2,000
El Mirage	Maricopa County			0	30	72	109	181	253	325	508	508
Eloy	Pinal County			0	127	308	465	773	1,081	1,387	2,171	2,171
Florence	Pinal County			0	119	290	438	729	1,020	1,309	2,048	2,048
Flowing Wells ID	Pima County			0	254	617	932	1,550	2,168	2,783	4,354	4,354
Gilbert	Maricopa County			613	1,433	2,036	2,559	3,587	4,614	5,635	8,418	9,821
Glendale	Maricopa County			272	1,453	2,890	4,137	6,585	9,031	11,464	17,761	18,383
Goodyear	Maricopa County			0	626	1,522	2,299	3,825	5,349	6,865	10,742	10,742
Green Valley DWID	Pima County			0	111	269	407	676	946	1,214	1,900	1,900
H2O Water Co	Maricopa County			0	9	21	31	52	73	94	147	147
Marana	Pima County			0	3	7	10	17	23	30	47	47
Maricopa County Parks & Rec	Maricopa County			0	39	94	142	237	331	425	665	665
Mesa*	Maricopa County			2,215	6,188	9,814	12,962	19,141	25,314	31,454	47,225	47,798
MDWID	Pima County			0	785	1,907	2,880	4,792	6,702	8,602	13,460	13,460
Oro Valley	Pima County			0	601	1,460	2,205	3,669	5,131	6,586	10,305	10,305
Peoria	Maricopa County			0	1,471	3,575	5,401	8,985	12,566	16,128	25,236	25,236
Phelps Dodge Miami	Gila County			0	169	412	622	1,035	1,447	1,857	2,906	2,906
Phoenix*	Maricopa County			14,871	32,339	43,519	53,224	72,273	91,305	110,236	158,768	159,806
Phoenix Memorial Park	Maricopa County			0	5	12	18	30	42	54	84	84
Pine Water Co	Gila County			0	9	23	34	57	80	103	161	161
Queen Creek Water Co	Maricopa County			0	20	49	74	124	173	222	348	348
Rio Verde Utilities	Maricopa County			0	47	115	174	289	404	519	812	812
San Tan ID	Maricopa County			0	14	33	51	84	118	151	236	236
Scottsdale*	Maricopa County			1,319	5,253	9,655	13,476	20,977	28,471	35,925	54,987	55,008
Spanish Trail Water Co	Pima County			0	177	430	650	1,081	1,512	1,941	3,037	3,037
Superior	Pinal County			0	17	40	61	101	142	182	285	285
Surprise	Maricopa County			0	597	1,452	2,193	3,649	5,103	6,550	10,249	10,249
Tempe	Maricopa County			9	267	626	939	1,551	2,164	2,773	4,333	4,353
Tonto Hills Utility Co	Maricopa County			0	4	10	15	25	35	45	71	71
Tucson	Pima County			0	8,404	20,422	30,854	51,331	71,790	92,139	144,172	144,172
Vail Water Co	Pima County			0	108	263	397	661	925	1,187	1,857	1,857

Table Att. D-5
2040 M&I Shortages (Based on Consumptive Use)

	County	Split C	Ratio	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
Valley Utilities Water Co	Maricopa County			0	15	35	54	89	124	160	250	250
Water Util. Comm. Fac. Dist. (AJ)	Pinal County			0	170	413	625	1,039	1,454	1,866	2,919	2,919
Water Util. Greater Buckeye	Maricopa County			0	3	6	9	15	21	27	43	43
Water Util. Greater Tonopah	Maricopa County			0	4	9	14	23	32	41	64	64
White Tank Sys. (AZ Water Co.)	Maricopa County			0	56	137	207	345	482	619	968	968
San Carlos (Phelps Dodge/Globe)	Gila County			0	1,058	2,570	3,883	6,460	9,035	11,596	18,145	18,145
State Reserved	All Counties in CAP			34,811	57,401	57,401	57,401	57,401	57,401	57,401	57,401	57,401
CAP M&I Subtotal				55,675	129,044	182,292	228,518	319,251	409,903	500,070	731,186	735,751.7
Arizona M&I												
Arizona State Land Department	Yuma County			0	16	74	132	248	365	481	780	780
Arizona State Parks Board - Contact Point	Mohave County			0	0	0	0	2	5	7	13	13
Arizona State Parks Board - Windsor Beach	Mohave County			0	0	0	0	0	0	3	20	20
Arizona-American Water Company	Mohave County			0	0	0	0	0	0	36	313	313
Brooke Water Company (formerly Graham)	La Paz County			0	0	0	0	0	0	0	53	53
Bullhead City (includes 6,000 af subcontract)	Mohave County			0	158	987	1,816	3,473	5,131	6,788	11,051	11,051
Bureau of Land Management	La Paz County			0	0	0	0	0	0	0	851	851
Cibola Valley Irrigation & Drainage District***** (M&I: 300af)	La Paz County	M&I/Ag	0.039	5	44	64	83	122	161	200	300	300
City of Somerton (new contract)	Yuma County			57	114	143	171	228	285	342	488	488
City of Yuma (Smucker Park)	Yuma County			0	0	0	0	0	0	0	0	0
Crystal Beach Water Conservation District	Mohave County			5	15	20	25	35	45	55	81	81
Desert Lawn Memorial Park Association, Inc.	Yuma County			0	0	0	0	0	0	0	15	15
Ehrenburg Improvement District	La Paz County			42	83	104	125	167	209	251	358	358
Fisher's Landing Water and Sewer Works, LLC	Yuma County			4	8	10	12	16	20	24	34	34
Gold Dome Mining Corporation	Yuma County			0	0	0	0	0	0	0	0	0
Gold Standard Mines Corporation	Mohave County			0	0	0	0	0	0	0	0	0
Golden Shores Water Conservation District	Mohave County			0	0	0	0	0	34	190	592	592
Hillcrest Water Company	La Paz County			0	6	9	12	19	25	31	48	48
Lake Havasu City (includes 6,000 af subcontract)	Mohave County			1,821	3,642	4,553	5,463	7,285	9,106	10,927	15,611	15,611
Marble Canyon Company, Inc.	Coconino County			0	0	0	0	0	0	2	16	16
Martinez Lake Cabin Sites (recommended)	Yuma County			2	3	4	5	7	9	10	15	15
McAlister, Maurice L.	Mohave County			0	0	0	0	0	0	0	4	4
Mohave County Water Authority (recommended 3,500af)	Mohave County			265	531	663	796	1,061	1,327	1,592	2,275	2,275
Mohave Valley Irrigation and Drainage District (5,000af M&I)	Mohave County	M&I/Ag	0.264	583	1,167	1,458	1,750	2,333	2,917	3,500	5,000	5,000
Mohave Water Conservation District (includes 3,000 af subcontract)	Mohave County			0	0	0	0	0	0	0	788	788
North Baja LLC (formerly Jamar Produce) (72af M&I)	La Paz County	M&I/Ag	0.214	8	17	21	25	34	42	50	72	72
Roy, Edward P. & Anna R.	Yuma County			0	1	1	1	1	1	1	1	1
Shepard Water Company	Yuma County			4	8	9	11	15	19	23	33	33
City of Parker	La Paz County			46	91	114	137	182	228	273	390	390
Town of Quartzsite	La Paz County			0	0	0	0	0	98	223	544	544
Verizon (formerly Continental Telephone)	La Paz County			0	1	1	1	1	1	1	1	1
Cibola National Wildlife Refuge	La Paz County			0	0	0	0	0	0	0	455	4,171
Yuma Irrigation District (5,000af M&I)	Yuma County	M&I/Ag	0.152	0	0	0	0	0	0	0	134	1,226
National Park Service	Mohave County			0	0	0	0	0	0	0	20	181
Yuma Union High School	Yuma County			0	0	0	0	0	0	0	3	29
Union Pacific Railroad (formerly Southern Pacific Co.)	Yuma County			0	0	0	0	0	0	0	1	7
Kaman, Inc.	Yuma County			0	0	0	0	0	0	0	0	0
City of Yuma	Yuma County			0	0	0	0	0	0	0	1,124	10,309
Department of Navy MCAS	Yuma County			0	0	0	0	0	0	0	57	522
Yuma County Water Users' Association (14,701af M&I)	Yuma County	M&I/Ag	0.000	0	0	0	0	0	0	0	0	0
Yuma Area Office (489,95af M&I Conversion)	Yuma County			0	0	0	0	0	0	0	0	0
City of Yuma (cemetery)	Yuma County			0	0	0	0	0	0	0	0	0
Yuma Mesa Irrigation & Drainage District (10,000af M&I)	Yuma County	M&I/Ag	0.063	0	0	0	0	0	0	0	267	2,452
Desert Lawn Memorial Park	Yuma County			0	0	0	0	0	0	0	4	34
North Gila Valley Irrigation District (2,500af M&I)	Yuma County	M&I/Ag	0.000	0	0	0	0	0	0	0	0	0

Table Att. D-5
2040 M&I Shortages (Based on Consumptive Use)

	County	Split C	Ratio	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
Wellton-Mohawk Irrigation and Drainage District (5,000af M&I)	Yuma County	M&I/Ag	0.018	0	0	0	0	0	0	0	134	1,226
Chandler (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	114	1,049
Gilbert (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	181	1,658
Glendale (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	80	736
Mesa (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	74	677
Phoenix (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	134	1,226
Scottsdale (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	3	25
Tempe (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	3	25
Department of Army - Yuma Proving Ground	Yuma County			0	0	0	0	0	0	0	20	186
Bureau of Reclamation - Davis Dam	Mohave County			0	0	0	0	0	0	0	0	0
Imperial National Wildlife Refuge	La Paz County			0	0	0	0	0	0	0	97	887
Havas Lake National Wildlife Refuge (2004 over use of 7,777af)	Mohave County			0	0	0	0	0	0	0	129	1,187
Brooke Water Company (formerly Graham)	La Paz County			0	0	0	0	0	0	0	0	0
City of Parker	La Paz County			0	0	0	0	0	0	0	0	0
Miller (in MVIDD)	Mohave County			0	0	0	0	0	0	0	0	0
Swan (in MVIDD)	Mohave County			0	0	0	0	0	0	0	0	0
City of Yuma	Yuma County			0	0	0	0	0	0	0	0	0
Arizona M&I Subtotal:				2,843	5,904	8,234	10,565	15,229	20,025	25,010	42,777	67,557.28
M&I Summary by County	M&I per County											
Coconino County	1			0	0	0	0	0	0	2	16	16
Gila County	3			0	1,237	3,005	4,540	7,552	10,562	13,556	21,212	21,212
La Paz County	14			101	242	312	383	524	763	1,029	3,168	7,674
Maricopa County	36			20,864	57,109	89,576	117,761	173,083	228,356	283,333	424,468	429,034
Mohave County	20			2,675	5,513	7,682	9,850	14,190	18,564	23,099	35,897	37,116
Pima County	11			0	11,880	28,867	43,615	72,560	101,480	130,245	203,798	203,798
Pinal County	7			0	1,417	3,443	5,202	8,654	12,104	15,534	24,307	24,307
Yuma County	24			67	149	241	332	515	698	880	3,108	17,357
All Counties in CAP	1			34,811	57,401	57,401	57,401	57,401	57,401	57,401	57,401	57,401
(blank)	0			0	0	0	0	0	0	0	0	0
Total Arizona M&I:	117			58,518	134,948	190,526	239,083	334,479	429,928	525,080	773,374	797,915

Table Att. D-6
2060 M&I Shortages (Based on Consumptive Use)

CAP M&I	County	Split C	Ratio	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
Apache Junction (AZ Water Co)	Pinal County			0	708	1,214	1,618	2,408	3,196	3,984	6,000	6,000
Avra Coop	Pima County			0	95	164	218	324	430	537	808	808
AZ-American (Agua Fria)	Maricopa County			0	1,310	2,245	2,991	4,451	5,909	7,366	11,093	11,093
AZ-American (Paradise Valley)	Maricopa County			0	381	654	871	1,296	1,721	2,145	3,231	3,231
AZ-American (Sun City)	Maricopa County			0	495	848	1,130	1,681	2,232	2,782	4,189	4,189
AZ-American (Sun City West)	Maricopa County			0	280	480	640	952	1,264	1,575	2,372	2,372
AZ State Land Dept.	Maricopa County			0	2,370	4,063	5,414	8,056	10,695	13,331	20,076	20,076
ASARCO (Ray Mine)	Pima County			0	2,479	4,250	5,663	8,427	11,187	13,944	21,000	21,000
Avondale	Maricopa County			0	639	1,096	1,461	2,173	2,885	3,596	5,416	5,416
B&F Investment, LLC	La Paz County			0	0	0	0	0	0	0	0	0
Berneil Water Co (Cave Creek)	Maricopa County			0	24	40	54	80	107	133	200	200
Buckeye	Maricopa County			0	3	5	7	10	13	17	25	25
Carefree Water Co	Maricopa County			0	153	263	351	522	693	863	1,300	1,300
Casa Grande (AZ Water Co)	Pinal County			0	1,049	1,798	2,396	3,565	4,733	5,899	8,884	8,884
Cave Creek Water Co	Maricopa County			0	284	487	649	965	1,282	1,598	2,406	2,406
CAGR D	Maricopa County			0	914	1,568	2,089	3,108	4,126	5,143	7,746	7,746
Chandler*	Maricopa County			451	1,956	2,935	3,716	5,243	6,769	8,293	12,301	13,188
Chandler Heights Citrus ID	Maricopa County			0	37	64	85	126	168	209	315	315
Chaparral City Water Co	Maricopa County			0	1,052	1,803	2,402	3,575	4,746	5,916	8,909	8,909
Circle City Water Co	Maricopa County			0	464	796	1,060	1,578	2,095	2,611	3,932	3,932
Comm. Water Co (Green Valley)	Pima County			0	337	578	771	1,147	1,522	1,898	2,858	2,858
Coolidge (AZ Water Co)	Pinal County			0	236	405	539	803	1,065	1,328	2,000	2,000
El Mirage	Maricopa County			0	60	103	137	204	271	337	508	508
Eloy	Pinal County			0	256	439	585	871	1,157	1,442	2,171	2,171
Florence	Pinal County			0	242	414	552	822	1,091	1,360	2,048	2,048
Flowing Wells ID	Pima County			0	514	881	1,174	1,747	2,319	2,891	4,354	4,354
Gilbert	Maricopa County			702	1,767	2,377	2,864	3,816	4,767	5,717	8,319	9,723
Glendale	Maricopa County			311	2,440	3,893	5,053	7,321	9,587	11,850	17,717	18,340
Goodyear	Maricopa County			0	1,268	2,174	2,897	4,310	5,722	7,133	10,742	10,742
Green Valley DWID	Pima County			0	224	385	512	762	1,012	1,262	1,900	1,900
H2O Water Co	Maricopa County			0	17	30	40	59	78	98	147	147
Marana	Pima County			0	6	10	13	19	25	31	47	47
Maricopa County Parks & Rec	Maricopa County			0	79	135	179	267	354	442	665	665
Mesa*	Maricopa County			291	6,095	10,178	13,437	19,810	26,175	32,534	48,875	49,448
MDWID	Pima County			0	1,589	2,724	3,630	5,401	7,170	8,937	13,460	13,460
Oro Valley	Pima County			0	1,217	2,085	2,779	4,135	5,490	6,843	10,305	10,305
Peoria	Maricopa County			0	2,979	5,107	6,805	10,126	13,443	16,757	25,236	25,236
Phelps Dodge Miami	Gila County			0	343	588	784	1,166	1,548	1,930	2,906	2,906
Phoenix*	Maricopa County			527	20,785	35,142	46,600	69,006	91,385	113,743	171,076	172,114
Phoenix Memorial Park	Maricopa County			0	10	17	23	34	45	56	84	84
Pine Water Co	Gila County			0	19	33	43	65	86	107	161	161
Queen Creek Water Co	Maricopa County			0	41	70	94	140	185	231	348	348
Rio Verde Utilities	Maricopa County			0	96	164	219	326	433	539	812	812
San Tan ID	Maricopa County			0	28	48	64	95	126	157	236	236
Scottsdale*	Maricopa County			11	6,636	11,366	15,140	22,522	29,895	37,260	56,109	56,130
Spanish Trail Water Co	Pima County			0	359	615	819	1,219	1,618	2,017	3,037	3,037
Superior	Pinal County			0	34	58	77	114	152	189	285	285
Surprise	Maricopa County			0	1,210	2,074	2,764	4,113	5,460	6,805	10,249	10,249
Tempe	Maricopa County			11	523	887	1,177	1,745	2,312	2,879	4,331	4,352
Tonto Hills Utility Co	Maricopa County			0	8	14	19	28	38	47	71	71
Tucson	Pima County			0	17,020	29,177	38,879	57,851	76,801	95,732	144,172	144,172
Vail Water Co	Pima County			0	219	376	501	745	989	1,233	1,857	1,857

Table Att. D-6
2060 M&I Shortages (Based on Consumptive Use)

	County	Split C	Ratio	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
Valley Utilities Water Co	Maricopa County			0	30	51	67	100	133	166	250	250
Water Util. Comm. Fac. Dist. (AJ)	Pinal County			0	345	591	787	1,171	1,555	1,938	2,919	2,919
Water Util. Greater Buckeye	Maricopa County			0	5	9	12	17	23	29	43	43
Water Util. Greater Tonopah	Maricopa County			0	8	13	17	26	34	42	64	64
White Tank Sys. (AZ Water Co.)	Maricopa County			0	114	196	261	388	516	643	968	968
San Carlos (Phelps Dodge/Globe)	Gila County			0	2,142	3,672	4,893	7,281	9,666	12,049	18,145	18,145
State Reserved	All Counties in CAP			39,859	51,817	51,817	51,817	51,817	51,817	51,817	51,817	51,817
CAP M&I Subtotal				42,162	135,811	193,665	239,839	330,131	420,314	510,408	741,496	746,061.6
Arizona M&I												
Arizona State Land Department	Yuma County			0	16	74	132	248	365	481	780	780
Arizona State Parks Board - Contact Point	Mohave County			0	0	0	0	2	5	7	13	13
Arizona State Parks Board - Windsor Beach	Mohave County			0	0	0	0	0	0	3	20	20
Arizona-American Water Company	Mohave County			0	0	0	0	0	0	41	318	318
Brooke Water Company (formerly Graham)	La Paz County			0	0	0	0	0	0	0	53	53
Bullhead City (includes 6,000 af subcontract)	Mohave County			0	821	1,650	2,479	4,136	5,794	7,451	11,714	11,714
Bureau of Land Management	La Paz County			0	0	0	0	0	0	0	851	851
Cibola Valley Irrigation & Drainage District***** (M&I: 300af)	La Paz County	M&I/Ag	0.039	5	44	64	83	122	161	200	300	300
City of Somerton (new contract)	Yuma County			57	114	143	171	228	285	342	488	488
City of Yuma (Smucker Park)	Yuma County			0	0	0	0	0	0	0	0	0
Crystal Beach Water Conservation District	Mohave County			6	16	21	26	36	46	56	82	82
Desert Lawn Memorial Park Association, Inc.	Yuma County			0	0	0	0	0	0	0	15	15
Ehrenburg Improvement District	La Paz County			42	83	104	125	167	209	251	358	358
Fisher's Landing Water and Sewer Works, LLC	Yuma County			4	8	10	12	16	20	24	34	34
Gold Dome Mining Corporation	Yuma County			0	0	0	0	0	0	0	0	0
Gold Standard Mines Corporation	Mohave County			0	0	0	0	0	0	0	0	0
Golden Shores Water Conservation District	Mohave County			0	0	0	0	0	69	225	627	627
Hillcrest Water Company	La Paz County			1	7	10	13	20	26	33	49	49
Lake Havasu City (includes 6,000 af subcontract)	Mohave County			1,821	3,642	4,553	5,463	7,285	9,106	10,927	15,611	15,611
Marble Canyon Company, Inc.	Coconino County			0	0	0	0	0	0	2	16	16
Martinez Lake Cabin Sites (recommended)	Yuma County			2	3	4	5	7	9	10	15	15
McAlister, Maurice L.	Mohave County			0	0	0	0	0	0	0	4	4
Mohave County Water Authority (recommended 3,500af)	Mohave County			265	531	663	796	1,061	1,327	1,592	2,275	2,275
Mohave Valley Irrigation and Drainage District (5,000af M&I)	Mohave County	M&I/Ag	0.264	583	1,167	1,458	1,750	2,333	2,917	3,500	5,000	5,000
Mohave Water Conservation District (includes 3,000 af subcontract)	Mohave County			0	0	0	0	0	0	0	835	835
North Baja LLC (formerly Jamar Produce) (72af M&I)	La Paz County	M&I/Ag	0.214	8	17	21	25	34	42	50	72	72
Roy, Edward P. & Anna R.	Yuma County			0	1	1	1	1	1	1	1	1
Shepard Water Company	Yuma County			4	8	9	11	15	19	23	33	33
City of Parker	La Paz County			46	91	114	137	182	228	273	390	390
Town of Quartzsite	La Paz County			0	0	0	0	0	110	235	556	556
Verizon (formerly Continental Telephone)	La Paz County			0	1	1	1	1	1	1	1	1
Cibola National Wildlife Refuge	La Paz County			0	0	0	0	0	0	0	455	4,171
Yuma Irrigation District (5,000af M&I)	Yuma County	M&I/Ag	0.152	0	0	0	0	0	0	0	134	1,226
National Park Service	Mohave County			0	0	0	0	0	0	0	20	181
Yuma Union High School	Yuma County			0	0	0	0	0	0	0	3	29
Union Pacific Railroad (formerly Southern Pacific Co.)	Yuma County			0	0	0	0	0	0	0	1	7
Kaman, Inc.	Yuma County			0	0	0	0	0	0	0	0	0
City of Yuma	Yuma County			0	0	0	0	0	0	0	1,123	10,305
Department of Navy MCAS	Yuma County			0	0	0	0	0	0	0	57	522
Yuma County Water Users' Association (14,701af M&I)	Yuma County	M&I/Ag	0.000	0	0	0	0	0	0	0	0	0
Yuma Area Office (489,95af M&I Conversion)	Yuma County			0	0	0	0	0	0	0	0	0
City of Yuma (cemetery)	Yuma County			0	0	0	0	0	0	0	0	0
Yuma Mesa Irrigation & Drainage District (10,000af M&I)	Yuma County	M&I/Ag	0.063	0	0	0	0	0	0	0	267	2,452
Desert Lawn Memorial Park	Yuma County			0	0	0	0	0	0	0	4	34
North Gila Valley Irrigation District (2,500af M&I)	Yuma County	M&I/Ag	0.000	0	0	0	0	0	0	0	0	0

Table Att. D-6
2060 M&I Shortages (Based on Consumptive Use)

	County	Split C	Ratio	200000	400000	500000	600000	800000	1000000	1200000	1800000	2500000
Wellton-Mohawk Irrigation and Drainage District (5,000af M&I)	Yuma County	M&I/Ag	0.018	0	0	0	0	0	0	0	134	1,226
Chandler (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	114	1,049
Gilbert (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	181	1,658
Glendale (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	80	736
Mesa (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	74	677
Phoenix (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	134	1,226
Scottsdale (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	3	25
Tempe (Salt River Pima-Maricopa Exchange)****	Maricopa			0	0	0	0	0	0	0	3	25
Department of Army - Yuma Proving Ground	Yuma County			0	0	0	0	0	0	0	20	186
Bureau of Reclamation - Davis Dam	Mohave County			0	0	0	0	0	0	0	0	0
Imperial National Wildlife Refuge	La Paz County			0	0	0	0	0	0	0	97	887
Havasu Lake National Wildlife Refuge (2004 over use of 7,777af)	Mohave County			0	0	0	0	0	0	0	129	1,187
Brooke Water Company (formerly Graham)	La Paz County			0	0	0	0	0	0	0	0	0
City of Parker	La Paz County			0	0	0	0	0	0	0	0	0
Miller (in MVIDD)	Mohave County			0	0	0	0	0	0	0	0	0
Swan (in MVIDD)	Mohave County			0	0	0	0	0	0	0	0	0
City of Yuma	Yuma County			0	0	0	0	0	0	0	0	0
Arizona M&I Subtotal:				2,844	6,569	8,899	11,230	15,894	20,737	25,728	43,541	68,317.66
M&I Summary by County	M&I per County											
Coconino County	1			0	0	0	0	0	0	2	16	16
Gila County	3			0	2,504	4,293	5,720	8,512	11,300	14,085	21,212	21,212
La Paz County	14			102	243	313	384	525	776	1,042	3,181	7,688
Maricopa County	36			2,303	54,561	91,393	120,788	178,271	235,685	293,041	440,362	444,928
Mohave County	20			2,676	6,177	8,346	10,514	14,854	19,263	23,803	36,648	37,867
Pima County	11			0	24,059	41,243	54,958	81,777	108,564	135,324	203,798	203,798
Pinal County	7			0	2,870	4,919	6,555	9,754	12,948	16,140	24,307	24,307
Yuma County	24			67	149	241	332	515	698	880	3,108	17,353
All Counties in CAP	1			39,859	51,817	51,817	51,817	51,817	51,817	51,817	51,817	51,817
(blank)	0			0	0	0	0	0	0	0	0	0
Total Arizona M&I:	117			45,006	142,380	202,565	251,069	346,024	441,051	536,136	784,448	808,985

Attachment E

Regional Summary of Distribution of Shortages (2008-2060)

This attachment to Appendix G contains tables produced by the Shortage Allocation Model that provide a summary of the distribution of shortages by priority within the three Lower Division states (Arizona, California, and Nevada) and also to Mexico, for the years 2008, 2017, 2026, 2027, 2040, and 2060.

Appendix G

Table Att. E-1
2008 Regional Summary of Shortages (Based on Consumptive Use)

	200,000	400,000	500,000	600,000	800,000	1,000,000	1,200,000	1,800,000	2,500,000
Mexico	33,333	66,667	83,333	100,000	133,333	166,667	200,000	300,000	416,667
Nevada	6,667	13,333	16,667	20,000	26,667	33,333	40,000	60,000	83,333
Surplus Water - SNWA	0	0	0	0	0	0	0	0	0
9th Priority (SNWA - Balance & Unused)	6,667	13,333	16,667	20,000	26,667	33,333	40,000	60,000	70,914
8th Priority (SNWA & Big Bend)	0	0	0	0	0	0	0	0	12,419
7th Priority (Boy Scouts, BOR, NV Dept of...)	0	0	0	0	0	0	0	0	0
6th Priority (Las Vegas Valley Water District)	0	0	0	0	0	0	0	0	0
5th Priority (PABCO & Lakeview Co.)	0	0	0	0	0	0	0	0	0
4th Priority (Henderson & Basic Management)	0	0	0	0	0	0	0	0	0
3rd Priority (Boulder City)	0	0	0	0	0	0	0	0	0
2nd Priority (Lake Mead National Rec Area)	0	0	0	0	0	0	0	0	0
1st Priority (PPR's: LMNRA & Fort Mohave)	0	0	0	0	0	0	0	0	0
SUBTOTAL	6,667	13,333	16,667	20,000	26,667	33,333	40,000	60,000	83,333
Arizona	160,000	320,000	400,000	480,000	640,000	800,000	960,000	1,440,000	1,587,484
Surplus Contracts	0	0	0	0	0	0	0	0	0
4th Priority (River Users)	4,374	9,879	13,423	16,991	24,348	32,285	41,203	70,728	72,175
4th Priority (CAP)*	155,626	310,121	386,577	463,009	615,652	767,715	918,797	1,369,272	1,389,871
CAP 5: Arizona Ground Water Bank*	147,844	294,614	328,635	328,635	328,635	328,635	328,635	328,635	328,635
CAP 4: Excess Water for Agriculture*	0	0	38,611	111,222	256,233	400,000	400,000	400,000	400,000
CAP 3: Agriculture*	0	0	0	0	0	94	9,026	9,026	9,026
CAP 3: Tribes*	0	0	0	0	0	21	2,000	2,000	2,000
CAP 3: M&I*	0	0	0	0	0	578	55,277	55,277	55,277
CAP 2: Tribes*	0	0	0	0	0	0	0	125,115	132,083
CAP 2: M&I*	0	0	0	0	0	0	77,918	376,404	388,855
2/3 Priority (includes CAP 1)	0	0	0	0	0	0	0	0	125,438
CAP 1: Tribes*	0	0	0	0	0	0	0	0	9,857
CAP 1: M&I*	0	0	0	0	0	0	0	0	4,337
1st Priority (PPR's)	0	0	0	0	0	0	0	0	0
SUBTOTAL	160,000	320,000	400,000	480,000	640,000	800,000	960,000	1,440,000	1,587,484
California	0	0	0	0	0	0	0	0	412,516
Surplus (BLM, Needles, Coachella, Navy, MWD)	0	0	0	0	0	0	0	0	0
7th Priority (unused & surplus - Agriculture)	0	0	0	0	0	0	0	0	0
6th Priority (unused & surplus - IID, CVWD, PVID)	0	0	0	0	0	0	0	0	0
5th Priority (unused & surplus - MWD)	0	0	0	0	0	0	0	0	0
4th Priority (MWD)	0	0	0	0	0	0	0	0	412,516
3rd Priority (IID, CVWD, PVID)	0	0	0	0	0	0	0	0	0
2nd Priority (Reservation Division)	0	0	0	0	0	0	0	0	0
1st Priority (PVID)	0	0	0	0	0	0	0	0	0
Present Perfected Rights (PPR's)	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	0	0	0	0	0	0	0	412,516
TOTAL	200,000	400,000	500,000	600,000	800,000	1,000,000	1,200,000	1,800,000	2,500,000

*CAP losses are not displayed to CAP as a whole, however losses are accounted for in the shortage distribution within CAP.

Table Att. E-2
2017 Regional Summary of Shortages (Based on Consumptive Use)

	200,000	400,000	500,000	600,000	800,000	1,000,000	1,200,000	1,800,000	2,500,000
Mexico	33,333	66,667	83,333	100,000	133,333	166,667	200,000	300,000	416,667
Nevada	6,667	13,333	16,667	20,000	26,667	33,333	40,000	60,000	83,333
Surplus Water - SNWA	0	0	0	0	0	0	0	0	0
9th Priority (SNWA - Balance & Unused)	6,667	13,333	16,667	20,000	26,667	33,333	40,000	60,000	70,914
8th Priority (SNWA & Big Bend)	0	0	0	0	0	0	0	0	12,419
7th Priority (Boy Scouts, BOR, NV Dept of...)	0	0	0	0	0	0	0	0	0
6th Priority (Las Vegas Valley Water District)	0	0	0	0	0	0	0	0	0
5th Priority (PABCO & Lakeview Co.)	0	0	0	0	0	0	0	0	0
4th Priority (Henderson & Basic Management)	0	0	0	0	0	0	0	0	0
3rd Priority (Boulder City)	0	0	0	0	0	0	0	0	0
2nd Priority (Lake Mead National Rec Area)	0	0	0	0	0	0	0	0	0
1st Priority (PPR's: LMNRA & Fort Mohave)	0	0	0	0	0	0	0	0	0
SUBTOTAL	6,667	13,333	16,667	20,000	26,667	33,333	40,000	60,000	83,333
Arizona	160,000	320,000	400,000	480,000	640,000	800,000	960,000	1,397,578	1,533,925
Surplus Contracts	0	0	0	0	0	0	0	0	0
4th Priority (River Users)	6,222	14,019	17,921	21,862	30,992	40,787	50,788	79,350	79,350
4th Priority (CAP)*	153,778	305,981	382,079	458,138	609,008	759,213	909,212	1,304,575	1,304,575
CAP 5: Arizona Ground Water Bank*	0	0	0	0	0	0	0	0	0
CAP 4: Excess Water for Agriculture*	146,088	277,891	277,891	277,891	277,891	277,891	277,891	277,891	277,891
CAP 3: Agriculture*	0	998	6,637	9,026	9,026	9,026	9,026	9,026	9,026
CAP 3: Tribes*	0	2,576	17,134	23,300	23,300	23,300	23,300	23,300	23,300
CAP 3: M&I*	0	9,216	61,311	83,375	83,375	83,375	83,375	83,375	83,375
CAP 2: Tribes*	0	0	0	40,488	92,623	144,529	196,363	328,486	328,486
CAP 2: M&I*	0	0	0	1,150	92,341	183,130	273,795	512,767	512,767
2/3 Priority (includes CAP 1)	0	0	0	0	0	0	0	13,653	149,999
CAP 1: Tribes*	0	0	0	0	0	0	0	1,064	11,691
CAP 1: M&I*	0	0	0	0	0	0	0	468	5,144
1st Priority (PPR's)	0	0	0	0	0	0	0	0	0
SUBTOTAL	160,000	320,000	400,000	480,000	640,000	800,000	960,000	1,397,578	1,533,925
California	0	0	0	0	0	0	0	42,422	466,075
Surplus (BLM, Needles, Coachella, Navy, MWD)	0	0	0	0	0	0	0	0	0
7th Priority (unused & surplus - Agriculture)	0	0	0	0	0	0	0	0	0
6th Priority (unused & surplus - IID, CVWD, PVID)	0	0	0	0	0	0	0	0	0
5th Priority (unused & surplus - MWD)	0	0	0	0	0	0	0	0	0
4th Priority (MWD)	0	0	0	0	0	0	0	42,422	450,412
3rd Priority (IID, CVWD, PVID)	0	0	0	0	0	0	0	0	15,663
2nd Priority (Reservation Division)	0	0	0	0	0	0	0	0	0
1st Priority (PVID)	0	0	0	0	0	0	0	0	0
Present Perfected Rights (PPR's)	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	0	0	0	0	0	0	42,422	466,075
TOTAL	200,000	400,000	500,000	600,000	800,000	1,000,000	1,200,000	1,800,000	2,500,000

*CAP losses are not displayed to CAP as a whole, however losses are accounted for in the shortage distribution within CAP.

Appendix G

Table Att. E-3
2026 Regional Summary of Shortages (Based on Consumptive Use)

	200,000	400,000	500,000	600,000	800,000	1,000,000	1,200,000	1,800,000	2,500,000
Mexico	33,333	66,667	83,333	100,000	133,333	166,667	200,000	300,000	416,667
Nevada	6,667	13,333	16,667	20,000	26,667	33,333	40,000	60,000	83,333
Surplus Water - SNWA	0	0	0	0	0	0	0	0	0
9th Priority (SNWA - Balance & Unused)	6,667	13,333	16,667	20,000	26,667	33,333	40,000	60,000	70,914
8th Priority (SNWA & Big Bend)	0	0	0	0	0	0	0	0	12,419
7th Priority (Boy Scouts, BOR, NV Dept of...)	0	0	0	0	0	0	0	0	0
6th Priority (Las Vegas Valley Water District)	0	0	0	0	0	0	0	0	0
5th Priority (PABCO & Lakeview Co.)	0	0	0	0	0	0	0	0	0
4th Priority (Henderson & Basic Management)	0	0	0	0	0	0	0	0	0
3rd Priority (Boulder City)	0	0	0	0	0	0	0	0	0
2nd Priority (Lake Mead National Rec Area)	0	0	0	0	0	0	0	0	0
1st Priority (PPR's: LMNRA & Fort Mohave)	0	0	0	0	0	0	0	0	0
SUBTOTAL	6,667	13,333	16,667	20,000	26,667	33,333	40,000	60,000	83,333
Arizona	160,000	320,000	400,000	480,000	640,000	800,000	960,000	1,394,205	1,530,879
Surplus Contracts	0	0	0	0	0	0	0	0	0
4th Priority (River Users)	6,816	14,647	18,565	23,334	33,166	43,041	53,173	81,629	81,629
4th Priority (CAP)*	153,184	305,353	381,435	456,666	606,834	756,959	906,827	1,297,791	1,297,791
CAP 5: Arizona Ground Water Bank*	0	0	0	0	0	0	0	0	0
CAP 4: Excess Water for Agriculture*	72,075	72,075	72,075	72,075	72,075	72,075	72,075	72,075	72,075
CAP 3: Agriculture*	2,694	7,998	9,026	9,026	9,026	9,026	9,026	9,026	9,026
CAP 3: Tribes*	37,477	111,238	125,540	125,540	125,540	125,540	125,540	125,540	125,540
CAP 3: M&I*	33,278	98,774	111,474	111,474	111,474	111,474	111,474	111,474	111,474
CAP 2: Tribes*	0	0	26,494	50,582	102,474	154,352	206,141	336,744	336,744
CAP 2: M&I*	0	0	17,754	65,136	155,903	246,644	337,229	573,541	573,541
2/3 Priority (includes CAP 1)	0	0	0	0	0	0	0	14,785	151,460
CAP 1: Tribes*	0	0	0	0	0	0	0	1,137	11,646
CAP 1: M&I*	0	0	0	0	0	0	0	500	5,124
1st Priority (PPR's)	0	0	0	0	0	0	0	0	0
SUBTOTAL	160,000	320,000	400,000	480,000	640,000	800,000	960,000	1,394,205	1,530,879
California	0	0	0	0	0	0	0	45,795	469,120
Surplus (BLM, Needles, Coachella, Navy, MWD)	0	0	0	0	0	0	0	0	0
7th Priority (unused & surplus - Agriculture)	0	0	0	0	0	0	0	0	0
6th Priority (unused & surplus - IID, CVWD, PVID)	0	0	0	0	0	0	0	0	0
5th Priority (unused & surplus - MWD)	0	0	0	0	0	0	0	0	0
4th Priority (MWD)	0	0	0	0	0	0	0	45,795	450,412
3rd Priority (IID, CVWD, PVID)	0	0	0	0	0	0	0	0	18,708
2nd Priority (Reservation Division)	0	0	0	0	0	0	0	0	0
1st Priority (PVID)	0	0	0	0	0	0	0	0	0
Present Perfected Rights (PPR's)	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	0	0	0	0	0	0	45,795	469,120
TOTAL	200,000	400,000	500,000	600,000	800,000	1,000,000	1,200,000	1,800,000	2,500,000

*CAP losses are not displayed to CAP as a whole, however losses are accounted for in the shortage distribution within CAP.

Table Att. E-4
2027 Regional Summary of Shortages (Based on Consumptive Use)

	200,000	400,000	500,000	600,000	800,000	1,000,000	1,200,000	1,800,000	2,500,000
Mexico	33,333	66,667	83,333	100,000	133,333	166,667	200,000	300,000	416,667
Nevada	6,667	13,333	16,667	20,000	26,667	33,333	40,000	60,000	83,333
Surplus Water - SNWA	0	0	0	0	0	0	0	0	0
9th Priority (SNWA - Balance & Unused)	6,667	13,333	16,667	20,000	26,667	33,333	40,000	60,000	70,914
8th Priority (SNWA & Big Bend)	0	0	0	0	0	0	0	0	12,419
7th Priority (Boy Scouts, BOR, NV Dept of...)	0	0	0	0	0	0	0	0	0
6th Priority (Las Vegas Valley Water District)	0	0	0	0	0	0	0	0	0
5th Priority (PABCO & Lakeview Co.)	0	0	0	0	0	0	0	0	0
4th Priority (Henderson & Basic Management)	0	0	0	0	0	0	0	0	0
3rd Priority (Boulder City)	0	0	0	0	0	0	0	0	0
2nd Priority (Lake Mead National Rec Area)	0	0	0	0	0	0	0	0	0
1st Priority (PPR's: LMNRA & Fort Mohave)	0	0	0	0	0	0	0	0	0
SUBTOTAL	6,667	13,333	16,667	20,000	26,667	33,333	40,000	60,000	83,333
Arizona	160,000	320,000	400,000	480,000	640,000	800,000	960,000	1,393,837	1,530,547
Surplus Contracts	0	0	0	0	0	0	0	0	0
4th Priority (River Users)	6,819	14,654	18,650	23,477	33,313	43,199	53,339	81,782	81,782
4th Priority (CAP)*	153,181	305,346	381,350	456,523	606,687	756,801	906,661	1,297,146	1,297,146
CAP 5: Arizona Ground Water Bank*	0	0	0	0	0	0	0	0	0
CAP 4: Excess Water for Agriculture*	33,158	33,158	33,158	33,158	33,158	33,158	33,158	33,158	33,158
CAP 3: Agriculture*	3,672	8,397	9,026	9,026	9,026	9,026	9,026	9,026	9,026
CAP 3: Tribes*	63,334	144,815	155,660	155,660	155,660	155,660	155,660	155,660	155,660
CAP 3: M&I*	45,356	103,707	111,474	111,474	111,474	111,474	111,474	111,474	111,474
CAP 2: Tribes*	0	0	27,546	51,672	103,564	155,438	207,224	337,661	337,661
CAP 2: M&I*	0	0	25,417	72,705	163,470	254,204	344,785	580,808	580,808
2/3 Priority (includes CAP 1)	0	0	0	0	0	0	0	14,909	151,620
CAP 1: Tribes*	0	0	0	0	0	0	0	1,144	11,637
CAP 1: M&I*	0	0	0	0	0	0	0	503	5,120
1st Priority (PPR's)	0	0	0	0	0	0	0	0	0
SUBTOTAL	160,000	320,000	400,000	480,000	640,000	800,000	960,000	1,393,837	1,530,547
California	0	0	0	0	0	0	0	46,163	469,453
Surplus (BLM, Needles, Coachella, Navy, MWD)	0	0	0	0	0	0	0	0	0
7th Priority (unused & surplus - Agriculture)	0	0	0	0	0	0	0	0	0
6th Priority (unused & surplus - IID, CVWD, PVID)	0	0	0	0	0	0	0	0	0
5th Priority (unused & surplus - MWD)	0	0	0	0	0	0	0	0	0
4th Priority (MWD)	0	0	0	0	0	0	0	46,163	450,412
3rd Priority (IID, CVWD, PVID)	0	0	0	0	0	0	0	0	19,041
2nd Priority (Reservation Division)	0	0	0	0	0	0	0	0	0
1st Priority (PVID)	0	0	0	0	0	0	0	0	0
Present Perfected Rights (PPR's)	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	0	0	0	0	0	0	46,163	469,453
TOTAL	200,000	400,000	500,000	600,000	800,000	1,000,000	1,200,000	1,800,000	2,500,000

*CAP losses are not displayed to CAP as a whole, however losses are accounted for in the shortage distribution within CAP.

Table Att. E-5
2040 Regional Summary of Shortages (Based on Consumptive Use)

	200,000	400,000	500,000	600,000	800,000	1,000,000	1,200,000	1,800,000	2,500,000
Mexico	33,333	66,667	83,333	100,000	133,333	166,667	200,000	300,000	416,667
Nevada	6,667	13,333	16,667	20,000	26,667	33,333	40,000	60,000	83,333
Surplus Water - SNWA	0	0	0	0	0	0	0	0	0
9th Priority (SNWA - Balance & Unused)	6,667	13,333	16,667	20,000	26,667	33,333	40,000	60,000	70,914
8th Priority (SNWA & Big Bend)	0	0	0	0	0	0	0	0	12,419
7th Priority (Boy Scouts, BOR, NV Dept of...)	0	0	0	0	0	0	0	0	0
6th Priority (Las Vegas Valley Water District)	0	0	0	0	0	0	0	0	0
5th Priority (PABCO & Lakeview Co.)	0	0	0	0	0	0	0	0	0
4th Priority (Henderson & Basic Management)	0	0	0	0	0	0	0	0	0
3rd Priority (Boulder City)	0	0	0	0	0	0	0	0	0
2nd Priority (Lake Mead National Rec Area)	0	0	0	0	0	0	0	0	0
1st Priority (PPR's: LMNRA & Fort Mohave)	0	0	0	0	0	0	0	0	0
SUBTOTAL	6,667	13,333	16,667	20,000	26,667	33,333	40,000	60,000	83,333
Arizona	160,000	320,000	400,000	480,000	640,000	800,000	960,000	1,388,281	1,525,531
Surplus Contracts	0	0	0	0	0	0	0	0	0
4th Priority (River Users)	6,866	14,920	19,748	24,620	34,508	44,530	55,355	85,403	85,403
4th Priority (CAP)*	153,134	305,080	380,252	455,380	605,492	755,470	904,645	1,286,087	1,286,087
CAP 5: Arizona Ground Water Bank*	0	0	0	0	0	0	0	0	0
CAP 4: Excess Water for Agriculture*	0	0	0	0	0	0	0	0	0
CAP 3: Agriculture*	3,600	5,937	5,937	5,937	5,937	5,937	5,937	5,937	5,937
CAP 3: Tribes*	86,201	142,140	142,140	142,140	142,140	142,140	142,140	142,140	142,140
CAP 3: M&I*	55,675	91,804	91,804	91,804	91,804	91,804	91,804	91,804	91,804
CAP 2: Tribes*	0	12,705	30,871	56,016	107,890	159,717	211,266	338,579	338,579
CAP 2: M&I*	0	37,240	90,488	136,714	227,447	318,099	408,266	638,823	638,823
2/3 Priority (includes CAP 1)	0	0	0	0	0	0	0	16,791	154,042
CAP 1: Tribes*	0	0	0	0	0	0	0	1,270	11,647
CAP 1: M&I*	0	0	0	0	0	0	0	559	5,125
1st Priority (PPR's)	0	0	0	0	0	0	0	0	0
SUBTOTAL	160,000	320,000	400,000	480,000	640,000	800,000	960,000	1,388,281	1,525,531
California	0	0	0	0	0	0	0	51,719	474,468
Surplus (BLM, Needles, Coachella, Navy, MWD)	0	0	0	0	0	0	0	0	0
7th Priority (unused & surplus - Agriculture)	0	0	0	0	0	0	0	0	0
6th Priority (unused & surplus - IID, CVWD, PVID)	0	0	0	0	0	0	0	0	0
5th Priority (unused & surplus - MWD)	0	0	0	0	0	0	0	0	0
4th Priority (MWD)	0	0	0	0	0	0	0	51,719	450,412
3rd Priority (IID, CVWD, PVID)	0	0	0	0	0	0	0	0	24,056
2nd Priority (Reservation Division)	0	0	0	0	0	0	0	0	0
1st Priority (PVID)	0	0	0	0	0	0	0	0	0
Present Perfected Rights (PPR's)	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	0	0	0	0	0	0	51,719	474,468
TOTAL	200,000	400,000	500,000	600,000	800,000	1,000,000	1,200,000	1,800,000	2,500,000

*CAP losses are not displayed to CAP as a whole, however losses are accounted for in the shortage distribution within CAP.

Table Att. E-6
2060 Regional Summary of Shortages (Based on Consumptive Use)

	200,000	400,000	500,000	600,000	800,000	1,000,000	1,200,000	1,800,000	2,500,000
Mexico	33,333	66,667	83,333	100,000	133,333	166,667	200,000	300,000	416,667
Nevada	6,667	13,333	16,667	20,000	26,667	33,333	40,000	60,000	83,333
Surplus Water - SNWA	0	0	0	0	0	0	0	0	0
9th Priority (SNWA - Balance & Unused)	6,667	13,333	16,667	20,000	26,667	33,333	40,000	60,000	70,914
8th Priority (SNWA & Big Bend)	0	0	0	0	0	0	0	0	12,419
7th Priority (Boy Scouts, BOR, NV Dept of...)	0	0	0	0	0	0	0	0	0
6th Priority (Las Vegas Valley Water District)	0	0	0	0	0	0	0	0	0
5th Priority (PABCO & Lakeview Co.)	0	0	0	0	0	0	0	0	0
4th Priority (Henderson & Basic Management)	0	0	0	0	0	0	0	0	0
3rd Priority (Boulder City)	0	0	0	0	0	0	0	0	0
2nd Priority (Lake Mead National Rec Area)	0	0	0	0	0	0	0	0	0
1st Priority (PPR's: LMNRA & Fort Mohave)	0	0	0	0	0	0	0	0	0
SUBTOTAL	6,667	13,333	16,667	20,000	26,667	33,333	40,000	60,000	83,333
Arizona	160,000	320,000	400,000	480,000	640,000	800,000	960,000	1,388,281	1,525,531
Surplus Contracts	0	0	0	0	0	0	0	0	0
4th Priority (River Users)	7,410	16,857	22,049	27,285	37,903	48,700	59,645	89,740	89,740
4th Priority (CAP)*	152,590	303,143	377,951	452,715	602,097	751,300	900,355	1,281,750	1,281,750
CAP 5: Arizona Ground Water Bank*	0	0	0	0	0	0	0	0	0
CAP 4: Excess Water for Agriculture*	0	0	0	0	0	0	0	0	0
CAP 3: Agriculture*	4,123	5,359	5,359	5,359	5,359	5,359	5,359	5,359	5,359
CAP 3: Tribes*	98,701	128,312	128,312	128,312	128,312	128,312	128,312	128,312	128,312
CAP 3: M&I*	42,162	54,811	54,811	54,811	54,811	54,811	54,811	54,811	54,811
CAP 2: Tribes*	0	18,528	31,742	56,594	108,215	159,775	211,283	338,579	338,579
CAP 2: M&I*	0	81,000	138,854	185,028	275,320	365,503	455,597	686,126	686,126
2/3 Priority (includes CAP 1)	0	0	0	0	0	0	0	16,791	154,042
CAP 1: Tribes*	0	0	0	0	0	0	0	1,270	11,647
CAP 1: M&I*	0	0	0	0	0	0	0	559	5,125
1st Priority (PPR's)	0	0	0	0	0	0	0	0	0
SUBTOTAL	160,000	320,000	400,000	480,000	640,000	800,000	960,000	1,388,281	1,525,531
California	0	0	0	0	0	0	0	51,719	474,468
Surplus (BLM, Needles, Coachella, Navy, MWD)	0	0	0	0	0	0	0	0	0
7th Priority (unused & surplus - Agriculture)	0	0	0	0	0	0	0	0	0
6th Priority (unused & surplus - IID, CVWD, PVID)	0	0	0	0	0	0	0	0	0
5th Priority (unused & surplus - MWD)	0	0	0	0	0	0	0	0	0
4th Priority (MWD)	0	0	0	0	0	0	0	51,719	450,412
3rd Priority (IID, CVWD, PVID)	0	0	0	0	0	0	0	0	24,056
2nd Priority (Reservation Division)	0	0	0	0	0	0	0	0	0
1st Priority (PVID)	0	0	0	0	0	0	0	0	0
Present Perfected Rights (PPR's)	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	0	0	0	0	0	0	51,719	474,468
TOTAL	200,000	400,000	500,000	600,000	800,000	1,000,000	1,200,000	1,800,000	2,500,000

*CAP losses are not displayed to CAP as a whole, however losses are accounted for in the shortage distribution within CAP.

Attachment F

Supporting Documentation to the Shortage Allocation Model

This attachment to Appendix G contains tables that comprise supporting documentation to the Shortage Allocation Model as follows:

- | | |
|-----------------|--|
| Table Att. F-1: | Provides a list of Present Perfected Rights who are the first entitlement holders to receive Colorado River water in a shortage year in date order regardless of state lines. |
| Table Att. F-2: | Information from Exhibit B of the Quantification Settlement Agreement, which displays quantified entitlements for Imperial Irrigation District and Coachella Valley Water District, which are referenced in the Shortage Allocation Model. |
| Table Att. F-3: | This table shows a comparison of the shortage results generated in the Shortage Allocation Model based on different modeling assumptions used in the Draft EIS and the Final EIS. |

Table Att. F-1
Present Perfected Right Holders

	Priority Date	PPR Number	State	Diversion Entitlement	CU Entitlement
Lake Mead National Recreation Area	5/3/1929	82	NV	500	
Molina	1928	15	AZ	318	
Sonny Gowan (Grannis)	1928	32	CA	180	
Diehl*	1928	59	CA	1	0.6
Stallard*	1928	66	CA	1	0.6
Estrada*	1928	77	CA	1	0.6
Corrington*	1928	79	CA	1	0.6
Tolliver*	1928	80	CA	1	0.6
Randolph*	1926	65	CA	1	0.6
Keefe*	1926	67	CA	1	0.6
Gila Monster Farms (formerly Sturges)	1925	16	AZ	780	
Chagnon	1925	41	CA	120	
Faubion*	1925	48	CA	1	0.6
Earle*	1925	58	CA	1	0.6
Whittle*	1925	78	CA	1	0.6
Beauchamp*	1924	51	CA	1	0.6
McGee*	1924	63	CA	1	0.6
Stallard*	1924	64	CA	1	0.6
Hadlock*	1924	72	CA	1	0.6
Stephenson	1923	30	CA	240	
Draper, G.*	1923	46	CA	1	0.6
Dudley*	1922	49	CA	1	0.6
Colorado River Sportsmen's League	1921	36	CA	96	
Andrade	1921	38	CA	66	
Conger*	1921	45	CA	1	0.6
Vaulin*	1920	70	CA	1	0.6
Salisbury*	1920	71	CA	1	0.6
McDonough*	1919	47	CA	1	0.6
Cate*	1919	62	CA	1	0.6
Milpitas	1918	34	CA	108	
Cocopah Indian Reservation	9/27/1917	1	AZ	7,681	
Schneider*	1917	56	CA	1	0.6
Douglas*	1916	50	CA	1	0.6
Clark*	1916	52	CA	1	0.6
Graham*	1916	61	CA	1	0.6
Cocopah Indian Reservation	1915	8	AZ	1,140	
Powers (Power, R.E. & P.)	1915	7	AZ	960	
Lawrence	1915	42	CA	120	
Lawrence*	1915	53	CA	1	0.6
Milpitas	1914	37	CA	69	
Graham, J.*	1914	54	CA	1	0.6
Morgan	1913	33	CA	150	
Zozaya	1912	17	AZ	720	
Reid*	1912	60	CA	1	0.6
Fitz*	1912	75	CA	1	0.6
Fort Mohave Indian Reservation	2/2/1911	3	AZ	75,566	
Brooke Water Company (formerly Graham)	1910	9	AZ	360	
Geiger*	1910	55	CA	1	0.6
Williams*	1909	76	CA	1	0.6
Chemehuevi Indian Reservation	2/2/1907	22	CA	11,340	
North Gila Valley Unit	7/8/1905	6	AZ	24,500	
Yuma Auxiliary Project (Unit B)	7/8/1905	5	AZ	6,800	
City of Parker	1905	20	AZ	630	400

Table Att. F-1
Present Perfected Right Holders

	Priority Date	PPR Number	State	Diversion Entitlement	CU Entitlement
Cooper	1905	40	CA	60	
Reservation Division/Yuma Project (non-Indian portion)	1905	28	CA	38,270	
Reynolds	1904	39	CA	36	
Ferguson, C.*	1903	68	CA	1	0.6
Ferguson, W.*	1903	69	CA	1	0.6
Streeter*	1903	73	CA	1	0.6
Draper, J.*	1903	74	CA	1	0.6
Hulet	1902	10	AZ	1,080	
Holpal (formerly Hurschler)	1902	11	AZ	1,050	
Miller	1902	12	AZ	240	
McKellips and Granite Reef Farms	1902	13	AZ	810	
Sherill & Lafollette	1902	14	AZ	1,080	
Swan	1902	18	AZ	960	
Yuma County Water Users' Association	1901	4	AZ	254,200	
Imperial Irrigation District & CVWD lands	1901	27	CA	2,600,000	
Milton and Jean Phillips	1900	19	AZ	42	
Atchison, Topeka, and Santa Fe Railway Co.	1896	44	CA	1,260	273
Martinez*	1895	57	CA	1	0.6
City of Yuma	1893	21	AZ	2,333	1,478
Picacho Development Corp and CA Dept of Parks and Rec	1893	31	CA	120	
Fort Mohave Indian Reservation	9/18/1890	3	AZ	27,969	
Fort Mohave Indian Reservation	9/18/1890	25	CA	16,720	
Fort Mohave Indian Reservation	9/18/1890	81	NV	12,534	
Simons	1889	35	CA	60	
City of Needles (includes Parker Dam & Gov Camp)	1885	43	CA	1,500	950
Fort Yuma Indian Reservation	1/9/1884	23	CA	71,616	
Fort Yuma Indian Reservation	1/9/1884	3	AZ	6,350	
Palo Verde Irrigation District	1877	26	CA	219,780	
Colorado River Indian Reservation	5/15/1876	24	CA	5,860	
Colorado River Indian Reservation	11/16/1874	24	CA	40,241	
Colorado River Indian Reservation	11/16/1874	2	AZ	51,986	
Colorado River Indian Reservation	11/22/1873	2	AZ	252,016	
Colorado River Indian Reservation	10/22/1873	24	CA	10,745	
Colorado River Indian Reservation	3/3/1865	2	AZ	358,400	
Yuma Associates LTD and Winterhaven Water District (formerly Wavers)	1856	29	CA	780	
California Total				3,019,573	
Arizona Total				1,077,971	
Nevada Total				13,034	
TOTAL PPRs in Region				4,110,578	

Source: Consolidated Decree. Supreme Court of the United States. 2006

*One Acre-Foot PPRs

Table Att. F-2
Exhibit B of the QSA

In Thousands of Acre-feet

Calendar Year	2 Priority 1, 2 and 3b	IID Priority 3a										CVWD Priority 3a							12 ISG Bench-marks	12 Annual Targets		
		IID Priority 3a Quantified Amount	Reductions									10 IID Net Consumptive Use Amount (difference between column 3 and column 12)	CVWD Priority 3a Quantified Amount	Reductions			Additions				Total Priority 1-3 Use Plus PPR Consumptive Use (sum of columns 14 - 17 plus columns 18 + 19)	
			3 IID Reduction: MWD 1988 Agreement Transfer	IID Reduction: SDCWA Transfer	4 IID Reduction: AAC Lining IID, SDCWA & SLR	5 IID Reduction: SDCWA Mitigation Transfer	7 Intra-Priority 3 Transfer IID/CVWD	6 IID Reduction: MWD Transfer with Salton Sea Restoration	8 IID Reduction: Conditional ISG Backfill	9 IID Reduction: Misc. PPRs	IID Reductions: Total Amount (sum of columns 4 through 11)			4 CVWD Reduction: CC Lining, SDCWA & SLR	9 CVWD Reduction: Misc. PPRs	11 CVWD Reductions: Total Amount (sum of columns 15 + 16)	7 Intra-Priority 3 Transfer IID / CVWD	3 Intra-Priority 3 Transfer MWD / CVWD				CVWD Net Consumptive Use Amount (columns 14 - 17 plus columns 18 + 19)
2003	420	3,100	110	10	0	5	0	0	0	11.5	136.5	2,963.5	330	0	3	3	0	20	347	3,745.0	3,740	3,740
2004	420	3,100	110	20	0	10	0	0	0	11.5	151.5	2,948.5	330	0	3	3	0	20	347	3,730.0		3,707
2005	420	3,100	110	30	0	15	0	0	0	11.5	166.5	2,933.5	330	0	3	3	0	20	347	3,715.0		3,674
2006	420	3,100	110	40	0	20	0	0	9	11.5	190.5	2,909.5	330	26	3	29	0	20	321	3,665.0	3,640	3,640
2007	420	3,100	110	50	0	25	0	0	0	11.5	196.5	2,903.5	330	26	3	29	0	20	321	3,659.0		3,603
2008	420	3,100	110	50	67.7	25	4	20	0	11.5	288.2	2,811.8	330	26	3	29	4	20	325	3,571.3		3,566
2009	420	3,100	110	60	67.7	30	8	40	0	11.5	327.2	2,772.8	330	26	3	29	8	20	329	3,536.3	3,530	3,530
2010	420	3,100	110	70	67.7	35	12	60	0	11.5	366.2	2,733.8	330	26	3	29	12	20	333	3,501.3		3,510
2011	420	3,100	110	80	67.7	40	16	80	0	11.5	405.2	2,694.8	330	26	3	29	16	20	337	3,466.3		3,490
2012	420	3,100	110	90	67.7	45	21	100	0	11.5	445.2	2,654.8	330	26	3	29	21	20	342	3,431.3	3,470	3,470
2013	420	3,100	110	100	67.7	70	26	100	0	11.5	485.2	2,614.8	330	26	3	29	26	20	347	3,396.3		3,462
2014	420	3,100	110	100	67.7	90	31	100	0	11.5	510.2	2,589.8	330	26	3	29	31	20	352	3,376.3		3,455
2015	420	3,100	110	100	67.7	110	36	100	0	11.5	535.2	2,564.8	330	26	3	29	36	20	357	3,356.3		3,448
2016	420	3,100	110	100	67.7	130	41	100	0	11.5	560.2	2,539.8	330	26	3	29	41	20	362	3,336.3		3,440
2017	420	3,100	110	100	67.7	150	45	91	0	11.5	575.2	2,524.8	330	26	3	29	45	20	366	3,325.3		
2018	420	3,100	110	130	67.7	0	63	0	0	11.5	382.2	2,717.8	330	26	3	29	63	20	384	3,536.3		
2019	420	3,100	110	160	67.7	0	68	0	0	11.5	417.2	2,682.8	330	26	3	29	68	20	389	3,506.3		
2020	420	3,100	110	193	67.7	0	73	0	0	11.5	454.7	2,645.3	330	26	3	29	73	20	394	3,473.8		
2021	420	3,100	110	205	67.7	0	78	0	0	11.5	472.2	2,627.8	330	26	3	29	78	20	399	3,461.3		
2022	420	3,100	110	203	67.7	0	83	0	0	11.5	474.7	2,625.3	330	26	3	29	83	20	404	3,463.8		
2023	420	3,100	110	200	67.7	0	88	0	0	11.5	477.2	2,622.8	330	26	3	29	88	20	409	3,466.3		
2024	420	3,100	110	200	67.7	0	93	0	0	11.5	482.2	2,617.8	330	26	3	29	93	20	414	3,466.3		
2025	420	3,100	110	200	67.7	0	98	0	0	11.5	487.2	2,612.8	330	26	3	29	98	20	419	3,466.3		
2026	420	3,100	110	200	67.7	0	103	0	0	11.5	492.2	2,607.8	330	26	3	29	103	20	424	3,466.3		
2027	420	3,100	110	200	67.7	0	103	0	0	11.5	492.2	2,607.8	330	26	3	29	103	20	424	3,466.3		
2028	420	3,100	110	200	67.7	0	103	0	0	11.5	492.2	2,607.8	330	26	3	29	103	20	424	3,466.3		
2029-2037	420	3,100	110	200	67.7	0	103	0	0	11.5	492.2	2,607.8	330	26	3	29	103	20	424	3,466.3		
2038-2047	420	3,100	110	200	67.7	0	103	0	0	11.5	492.2	2,607.8	330	26	3	29	103	20	424	3,466.3		
2048-2077	420	3,100	110	200	67.7	0	100	0	0	11.5	489.2	2,610.8	330	26	3	29	100	20	421	3,466.3		

1Exhibit B is independent of increases and reductions as allowed under the Inadvertent Overrun and Payback Policy.

2Any higher use covered by MWD, any lesser use will produce water for MWD and help satisfy ISG Benchmarks and Annual Targets.

3IID/MWD 1988 Conservation Program conserves up to 110,000 AFY and the amount is based upon periodic verification. Of amount conserved, up to 20,000 AFY to CVWD (column 19), which does not count toward ISG Benchmarks and Annual Targets, and remainder to MWD.

4Ramp-up amounts may vary based upon construction progress, and final amounts will be determined by the Secretary pursuant to the Allocation Agreement.

5Any amount identified in Exhibit B for mitigation purposes will only be from non-Colorado River sources and these amounts may be provided by exchange for Colorado River water.

**Table Att. F-2
Exhibit B of the QSA**

		In Thousands of Acre-feet																			
Calendar Year	2 Priority 1, 2 and 3b	IID Priority 3a										CVWD Priority 3a							12 ISG Bench-marks	12 Annual Targets	
		IID Priority 3a Quantified Amount	Reductions									10 IID Net Consumptive Use Amount (difference between column 3 and column 12)	CVWD Priority 3a Quantified Amount	Reductions			Additions				
3 IID Reduction: MWD 1988 Agreement Transfer	IID Reduction: SDCWA Transfer		4 IID Reduction: AAC Lining IID, SDCWA & SLR	5,6 IID Reduction: SDCWA Mitigation Transfer	7 Intra-Priority 3 Transfer IID/CVWD	6 IID Reduction: MWD Transfer with Salton Sea Restoration	8 IID Reduction: Conditional ISG Backfill	9 IID Reduction: Misc. PPRs	IID Reductions: Total Amount (sum of columns 4 through 11)	4 CVWD Reduction: CC Lining, SDCWA & SLR	9 CVWD Reduction: Misc. PPRs			11 CVWD Reductions: Total Amount (sum of columns 15 + 16)	7 Intra-Priority 3 Transfer IID / CVWD	3 Intra-Priority 3 Transfer MWD / CVWD	CVWD Net Consumptive Use Amount (columns 14 - 17 plus columns 18 + 19)	Total Priority 1-3 Use Plus PPR Consumptive Use (sum of columns 2+13+20 plus 11+16)			

6Water would be transferred to MWD subject to satisfaction of certain conditions and to appropriate Federal approvals. These transfers may also be subject to state approvals. Schedules are subject to adjustments with mutual consent. After 2006, these quantities will count toward the ISG Benchmarks (column 22) and Annual Targets (column 23) only if and to the extent that water is transferred into the Colorado River Aqueduct for use by MWD and/or SDCWA.

7MWD can acquire if CVWD declines the water. Any water obtained by MWD will be counted as additional agricultural reduction to help satisfy the ISG Benchmarks and Annual Targets. MWD will provide CVWD 50,000 AFY of the 100,000 AFY starting in year 46.

8IID has agreed to provide transfer amounts to meet the minimum ISG benchmarks, not to exceed a cumulative total of 145,000 AF. Maximum transfer amounts are 25,000 AF in 2006, 50,000 AF plus the unused amount from 2006 in 2009, and 70,000 AF plus the unused amounts from 2006 and 2009 in 2012. In addition to the maximum transfer amounts IID has also committed that no more than 72,500 AF of reduced inflow to the Salton Sea would result from these additional transfers.

9Up to the amount shown, as agreed upon reduction to IID or CVWD to cover collectively the sum of individual Miscellaneous PPRs, Federal reserved rights and Decreed rights. This is a reduction that counts towards ISG Benchmarks and Annual Targets.

10For purposes of Subparagraph 8(b)(2)(i) and (ii) and 8(c)(1) and (4) the Secretary will take into account: (i) the satisfaction of necessary conditions to certain transfers (columns 7 and 9) not within IID's control; (ii) the amounts of conserved water as determined, where such amounts may vary (columns 4, 6, 9 and 10); and (iii) with respect to column 7, reductions by IID will be considered in determining IID's compliance regardless of whether the conserved water is diverted into the Colorado River Aqueduct.

11For purposes of Subparagraph 8(c)(1) and (4) the Secretary will take into account: (i) the satisfaction of necessary conditions to certain transfers (columns 15 and 16) not within CVWD's control; and (ii) the amounts of conserved water as determined, where such amounts may vary (column 15).

12All consumptive use of priorities 1 through 3 plus 14,500 AF of PPRs must be within 25,000 AF of the amount stated.

13Assumes SDCWA does not elect termination in year 35.

14Assumes SDCWA and IID mutually consent to renewal term of 30 years.

Notes:

Substitute transfers can be made provided the total volume of water to be transferred remains equal or greater than amounts shown consistent with applicable Federal approvals.

The shaded columns represent amounts of water that may vary.

Table Att. F-3
Comparison of Shortage Results in DEIS and FEIS

	River Users			CAP			AZ 2/3			Ak-Chin			San Carlos		
	DEIS	FEIS	Difference (DEIS - FEIS)	DEIS	FEIS	Difference (DEIS - FEIS)	DEIS	FEIS	Difference (DEIS - FEIS)	DEIS	FEIS	Difference (DEIS - FEIS)	DEIS	FEIS	Difference (DEIS - FEIS)
2017															
500,000	24,517	17,921	6,596	375,483	382,079	-6,596	0	0	0		0	0	0	0	0
1,200,000	58,841	50,788	8,053	901,159	909,212	-8,053	0	0	0	14,065	2,032	12,033	25,229	37,467	-12,238
2,500,000	84,825	79,350	5,475	1,299,101	1,304,575	-5,474	149,999	149,999	0	39,191	39,191	0	43,500	39,000	4,500
2060															
500,000	29,919	22,049	7,870	370,081	377,951	-7,870	0	0	0	0	0	0	0	0	0
1,200,000	71,806	59,645	12,161	888,194	900,355	-12,161	0	0	0	15,092	3,783	11,309	26,625	37,881	-11,256
2,500,000	102,584	89,740	12,844	1,268,906	1,281,750	-12,844	154,042	154,042	0	39,147	39,147	0	43,500	39,000	4,500

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