

# ROOSEVELT WATER CONSERVATION DISTRICT

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August 6, 2012

Mr. Joseph W. Mulholland, P.E.  
Executive Director  
Arizona Power Authority  
1810 W. Adams St.  
Phoenix, AZ 85007



Re: Proposed Methods to Allocate Hoover A & B Power

Dear Joe:

This letter supplements our June 12, 2012 letter that responded to Item No. 1 of your Request for Information as set forth in your May 4, 2012 letter. In addition, this letter presents prospective comments concerning your charge to develop three allocation options for the APA Commissioners prior to the next APA Commission meeting.

## Item No. 2

You requested suggestions concerning how the APA should allocate Hoover power and energy for Post-2017 contractors.

Item 2(a). Should Hoover Power be allocated to applicants on the basis of the total energy requirements of the applicants? No, we believe that the allocation of Hoover Power in proportion to total energy requirements would skew the allocation of Hoover Power disproportionately in favor of large utilities such as the Salt River Project (SRP) or the Central Arizona Water Conservation District (CAWCD). Large utilities have the financial resources to construct new generating plants and/or to purchase long-term power on the open-market. Most of the districts encompassed by A.R.S. Title 30 and Title 45 are relatively small; and, they rely principally upon their allocation of Hoover Power to meet their customer's needs. While the major utilities have a myriad of options available to them to secure reliable power for their customers, most districts must rely on their Hoover Power to meet the power needs of their consumers in an economical manner.

Item 2(b). Should Hoover Power be allocated on the number of irrigation wells served by the applicants? No, we believe that Hoover Power should not be allocated on the basis of the number of irrigation wells served by the applicants.

There is no direct correlation between the number of irrigation wells served by the applicant and the applicant's total power use because the electric demands will vary because of the motor horsepower, motor efficiency, the depth to water of the well, and the selection of pump bowls. RWCD has wells that produce between 120 MI and 270 MI of water; and, the resulting demands vary from 116 kW to 412 kW. Therefore, there is no relationship between the number of wells served and the total kilowatt demands of a contractor.

An irrigation district like RWCD would be negatively impacted using this allocation method because, in addition to its well field, RWCD uses its Main Pumping Plant to pump surface water (up to 250 cfs or 10,000 MI) from SRP's South Canal to the head of the RWCD Main Canal. A typical irrigation well in RWCD produces about 250 MI. Therefore, the use of the RWCD Main Pumping Plant at its maximum capacity of 10,000 MI would be equivalent to 40 wells. This allocation method would not fairly recognize RWCD's, or other similar customers', use of Hoover Power.

If the canal lift pumps used by CAWCD to convey CAP water through their canal system are not classified as "irrigation wells", then we presume that CAWCD would be shut out of an allocation of Hoover Power, which would consequently harm the municipal, industrial, and agricultural customers that depend on the use of CAP water at economical prices.

Finally, most cities and towns (existing APA contractors) likely have few or no irrigation wells; and, would likely face a significant reduction in their Hoover Power allocation.

Item 2(c). Should Hoover Power be allocated on the total kilowatt-hours sold under the "agricultural" category of electric service of the applicants? No, we believe that Hoover Power should not be allocated on the amount of energy sold to "agricultural" customers by each entity.

RWCD, and we presume CAWCD, do not have any electric rate schedules either "agricultural" or otherwise. Therefore, under this allocation method, RWCD and CAWCD would be shut out of a Hoover Power allocation.

Also, electrical districts with multiple electric rate schedules in addition to "agricultural" rate schedules would not receive a reasonable allocation representative of the mix and number of customers that they serve. We believe that the Hoover Power of each district should be available for use for all of its customers, whether water users or electric consumers.

Finally, most cities and towns (existing APA contractors) likely have no “agricultural” category of electric service; and, would likely face a significant reduction in their Hoover Power allocation.

Item 2(d). Should Hoover Power be allocated on the number of customers in the specified rate classes of the applicants? No, we believe that Hoover Power should not be allocated on the number of customers in the rate classes of the applicants.

Some customers like RWCD, and we presume CAWCD, do not have any electric rate classes. Such allocation method would shut RWCD and CAWCD out of a Hoover Power allocation.

Further, there is likely a vast diversity of electric rate classifications among the other APA contractors. Depending on how the APA might elect to allocate Hoover Power on this basis, it is likely that the resulting allocation would be skewed in favor of applicants with the largest number of customers. In addition, the number of customers will likely vary from district to district, even those of comparable acreage. This could occur because some districts may have a large number of customers with small farms, which would give them a larger allocation; while, there are sure to be large acreages owned by relatively few customers (likely in Pinal County) and they would get a lower allocation using this method.

Finally, a major utility such as SRP would have a number of customers that would dwarf a typical district. In that case, SRP and similar utilities would receive the bulk of the Hoover Power allocated using this method.

Item 2(e). Should Hoover Power be allocated on actual data or modifications to the 1987 “Red Book” process? It is not clear what is meant by this question. Presumably, the allocation method may utilize some of both.

While the allocation process was reasonable in 1987, the process used today should recognize the many special events that have temporarily changed the load patterns of the existing APA contractors. For example, the use of In-Lieu water, integrated scheduling, and resource integration, all on a temporary basis, have reduced the recent loads of certain existing APA contractors.

On page 10 of the “Red Book”, paragraph 2 states that “Renewal of existing customers’ kilowatt contract amounts because of reliance upon hydroelectric power.” We believe that Post-2017 Hoover Schedule A contract amounts should be renewed in the same manner and form as the “Red Book” (except for the 5% deduction) because of the current contractors’ continued “reliance upon hydroelectric power.”

On page 10 of the “Red Book”, paragraph 1 states that “The distribution of Schedule A power within each category was made on the basis of the applicant’s net load requirement. [Power was allocated to the extent that the total hydroelectric resources (Hoover, Colorado River Storage Project -“CRSP”- and Parker-Davis) did not exceed 100 percent of the applicant’s

load requirements.]” We believe that any Hoover A resources that remain unallocated because the Hoover A allocation to a contractor is more than 100% of a contractor’s “net load” should be left in the Hoover A resources pool. Any surplus Hoover A resources should not be added to the new Hoover D pool.

We believe that the determination of a contractor’s “net load” should continue to be the contractor’s remaining load requirements after deduction for federal preference power resources. For example, “net load” would be equal to the contractor’s annual system peak demand requirements, reflected at their Hoover Point of Delivery, less their allocations of SLCA/IP (CRSP) and Parker-Davis capacity resources. In addition, it is especially important that the CRSP SHP (Sustainable Hydro Power) allocations be used instead of the CSRP Contract Rate of Delivery (CROD). No CRSP contractor receives their CROD anymore since the management of the Colorado River releases from Glen Canyon Dam has substantially and materially changed from the conditions present when the original allocations were made. To illustrate this issue, RWCD’s summer season CRSP CROD is 2,199 kW, while the maximum CRSP SHP capacity that we receive during the summer season is only 1,250 kW. The use of CRSP CROD instead of the CRSP SHP amounts would greatly distort the allocation of Hoover Power because it would substantially lower the “net load” of affected applicants and bias the allocations toward applicants without CRSP resources.

We believe each contractor’s actual load data should be “normalized” to recognize material and demonstrable events that may have caused their actual load data to be substantially lower than would have occurred under “normal” operating conditions. In our case, we used In-Lieu Water, such as temporarily excess CAP water and temporarily available Chandler New Conservation Storage (NCS) surface water. The NCS water resulted from water that was stored behind the Roosevelt Dam after the level of the Dam was raised. NCS water was only available from 2010 through 2012. The use of excess CAP water and NCS water replaced groundwater pumped using Hoover and CRSP resources. Further, RWCD had to use 5,000 AF of CAP Ag Pool water in order to participate in the In-Lieu activities. In order to receive and use such In-Lieu Water resources, RWCD had to directly replace groundwater, on a gallon-for-gallon basis, that would otherwise have been pumped from RWCD irrigation wells. The use of temporary In-Lieu water supplies conserved groundwater which aided in the replenishment of the local aquifer; minimized the use of electric power and energy; and, reduced the cost of irrigation water to our customers.

In addition, the use of excess CAP Water by RWCD and other districts allowed the State of Arizona to indirectly store substantial amounts of Arizona’s allocation of CAP water that would otherwise have been lost to beneficial use within Arizona. At some point in the future, RWCD will need to operate its irrigation wells to recover the stored In-Lieu Water for the benefit of the State and the parties that stored the In-Lieu water with RWCD.

Consequently, our actual load data is substantially lower than that which would have occurred had RWCD not been using In-Lieu water.

We believe that we should be allowed to “normalize” our actual load data; and, that our “normalized” load data should be used in place of our actual load data in all methods that may be used by the APA to allocate Post-2017 Hoover Power. We have developed a method to “normalize” our load data that is accurate and that is consistent with our actual water scheduling practices. We have attached a description of how we propose to adjust our “actual” load data to “normal” levels. After the APA establishes the time frame for the collection of load data, then we will perform this “normalizing” of our load data for every day of each year of the period of time requested by the APA. We believe that the results of our “normalized” load data are just as accurate as the actual load data metered by SRP.

We recognize that there are other methods to “normalize” load data such as connected load and the sum of maximum demands. However, such demands are likely to be non-coincident. Therefore, an estimated coincidence factor should be applied to such loads to arrive at coincident system peak demands. Our “normalized” system peak demands are coincident demands by virtue of the method of their determination.

Item 2(f). Other methods or concepts that may be fair and reasonable in allocating the Hoover Power. The majority of the existing APA customers (Existing APA Customers) have crafted a proposal for a reasonable method by which the APA could allocate Hoover Power for the Post-2017 contract term. The Existing APA Customers have reached consensus agreement for the proposal recognizing that the proposal does not favor one customer over another. A description of the Existing APA Customers’ proposal for the APA Post-2017 Power Marketing Plan; and, the resulting estimated Hoover A & B allocations are attached hereto.

There are a number of factors that would support a decision by the APA to approve the Post-2017 Hoover Power Marketing Plan proposed by the Existing APA Customers.

- 1) The Hoover contractors in California, Nevada, and Arizona (Existing Hoover Customers) agreed to set aside their differences and agree to voluntarily give up 5% of their Hoover capacity and energy. Further we understand that all Existing Hoover Customers in California and Nevada will be receiving a renewal of their existing Hoover power allocation less 5%.
- 2) The Existing Hoover Customers took decisive action to create a new Hoover resource, Hoover D, by voluntarily giving up claims to 5% of their Hoover A & B capacity and energy entitlements. Such actions created a new federal pool of Hoover D power and a new Arizona pool of Hoover D power for allocation by APA, which is available to all new customers that do not have existing Hoover power contracts.
- 3) The existing APA contractors have borne the burden of paying for the dam, the generating facilities, the Uprates, the maintenance, and the replacements for the current 30-year contract term (e.g., 1987-2017). All of the existing APA contractors, including large utilities like SRP, CAWCD and small irrigation districts, entered into power sales contracts with the APA so that such contracts could provide security for

the APA to sell bonds to finance the Hoover Power Plant facilities. At the end of the current contract term, such bonds will have been paid in full by all of the existing APA contractors. It would be inequitable and unfair to deprive the existing APA contractors of the resource that they built and paid for. It would be wrong to allow new customers to receive an allocation of Hoover A & B Power because the new customers would be receiving a valuable resource without having paid for it.

- 4) Urbanization and the reduction in agricultural loads in some districts should not be used as a reason to reduce the Hoover resources available to those districts. We believe that the statutory preference granted to districts does not require that the district loads be "agricultural" in nature. In fact, more diversity in a district's loads helps spread the benefits of the Hoover resource to more of the community. Further, many of the smaller districts have, out of necessity, taken on non-agricultural loads in order to be able to continue to provide economical water and power to their remaining agricultural loads to sustain farming in central Arizona.
- 5) Taking Hoover Power from small customers whose economics and communities are dependent on that resource in order to "peanut butter" the resource over a broader range of customers is wrong. It would have a significant detrimental effect on APA's existing contractors, while providing negligible benefit to others.

The foregoing reasons are only a few of the factors that the APA could reasonably base a decision on to approve a renewal of all existing Hoover A & B customers' entitlements at the 95% level for the Post-2017 timeframe.

### Summary

We believe that you have a difficult task ahead of you to propose three methods of allocating Hoover Power that does not skew the allocations to one customer type or another. Unfortunately, there is no homogeneity in the mixture of Hoover A contractors. You have a mixture of large and small districts, cities and towns, and SRP. The inclusion of SRP in each allocation scheme, except for 2(e) and 2(f), will likely skew the allocation toward SRP due to the size of their operations as compared to most irrigation and electrical districts.

We continue to believe that the fairest distribution of Hoover A & B Power is through a renewal of current Hoover Power allocations less 5%. We believe that all new applicants should only be eligible for Hoover D power; and, they should be excluded from receiving an allocation of Hoover A and/or B power. Likewise, existing Hoover A & B contractors should only be eligible for a renewal of Hoover A & B power; and they should be excluded from receiving an allocation of Hoover D power.

We would like to reserve comment on the three allocation options to be created by APA Staff.

Thank you for the opportunity to express our views on the allocation of Hoover Power for Post-2017.

Sincerely,



William C. Petty  
Associate General Manager

**Attachments**

cc: APA Commissioners

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### RWCD Method of "Normalizing" Actual Load Data for Special Circumstances

- 1) We will identify the daily total water production (AF) for each day of the month.
- 2) We will convert the daily total water production from acre-feet to Arizona miners' inches by the following formula: AF divided by 1.9835 AF/cfs multiplied by 40 MI/cfs.
- 3) We will then schedule the amount of our SRP Salt/Verde surface water that could reasonably have been expected to be delivered through our Main Pumping Plant on each day. We will also subtract the actual SRP San Tan Generating Plant effluent that we received and used. It is important to note that the San Tan Plant effluent is only available when the San Tan Plant is operating. Further, at the time that the San Tan Plant is decommissioned, then all such effluent will be lost to the District. After the foregoing deductions, all remaining total water production would have been served by our irrigation wells.
- 4) We will next dispatch the wells that would have been necessary to satisfy the remaining irrigation demands of our customers. We know the order in which we would schedule our wells to meet daily water demands. For example, most of our highest producing and efficient wells are located at the north-end (top) of our canal system. Also, the use of the north-most wells can serve the largest geographic area of the District's total water system.
- 5) We know the kilowatt demand for each of our electrical loads from SRP's load research system. Therefore, we will add up the kilowatt demands for the wells that would have been running on each day. We will also determine the kilowatt demands that would have resulted from the operation of our Main Pumping Plant on each day. The sum of the Main Pumping Plant demand, our irrigation wells demand, and incidental lift and sump pumps demand will result in the total kilowatt demand of the District on each day.
- 6) We will obtain the actual monthly SRP wheeling loss factors from our monthly SRP power invoices.
- 7) We will increase the total kilowatt demands calculated in step 5 to reflect the SRP wheeling loss factors from step 6. The results are the District's total daily kilowatt demands reflected at the District's Hoover Delivery Point.
- 8) The "normalized" energy consumed for each day will be calculated by multiplying the daily demands calculated in Step 7 by 24 hours of daily operation.



**Customers' Proposed Principles for APA Post 2017 Hoover Power  
Marketing Plan Pursuant To the Hoover Power Plant Act of 2011**

**A. Background**

The Hoover Power Plant Act of 2011 (H.R. 470) was developed pursuant to multi-year negotiations among users of Hoover capacity and energy in Arizona, California and Nevada, including both the APA and representatives of the APA customers ("Existing Hoover Customers").

Existing Hoover Customers agreed that the total capacity to be allocated in the post-2017 Hoover contracts should be increased from 1951 MW to 2074 MW to reflect improvements in the capacity of the generators at Hoover Dam. The Existing Hoover Customers further agreed that a new pool of capacity and energy (Schedule D) should be created for allocation to entities not currently receiving Schedule A or B capacity and energy, by reducing the 2074 MW of capacity and associated energy that might otherwise have been available to Existing Hoover Customers by 5 percent.

New Hoover customers will be required to pay their proportionate share of their state's contribution to the Lower Colorado Multi-Species Conservation Program, to execute the Boulder Canyon Project Implementation Agreement and to pay their pro rata share of repayable advances for equipment at Hoover paid by Hoover power contractors prior to October 1, 2017.

Pursuant to the new Schedule D, a total of 103,700 kW of capacity and 226,352 MWh of energy will be available for allocation to new customers.

Of that amount, 11,510 kW of capacity and 25,113 MWh of energy will be available for allocation by the APA to new customers.

**B. APA Hoover Customers' Proposal - APA Post-2017 Power Marketing Plan**

**1. Existing Customers**

(a) **Allocation:** Renewal of "existing" Hoover A and Hoover B contract capacity and associated energy allocations, adjusted proportionately to recognize the changes in the allocations to the APA in the 2011 Act compared to the allocations in the 1984 Act, as identified in the attached table. This takes into account the five percent reduction of Hoover A and Hoover B, with the result that Existing Hoover Customers would receive about 101% (2,074 MW divided by 1,951 MW times .95) of their current capacity allocations and 95% of their energy.

Schedule C shall be allocated to existing APA Schedule C customers in the same manner and amount as in the current APA contracts.

(b) **Term:** 50 years.

**2. New Customers**

(a) **Allocation:** Allocate the new Schedule D customer pool, created by federal legislation and distributed by Western to APA for allocation to new allottees in the State of Arizona, i.e., 11,510 kW of capacity and 25,113 MWh (17,580 MWh Summer, 7,533 Winter MWh) of energy.

(b) **Term:** 50 years.

(c) **Criteria:** New allottees must meet eligibility criteria specified in H.R. 470, be a "Qualified Entity" as defined in the Arizona Administrative Code. Allocations made to new allottees shall be made in compliance with all applicable Arizona Administrative Code and Arizona Revised Statutes, as amended.

(d) **Contract Conditions:** New customers to pay pro rata shares of APA's MSCP contribution and the repayable advances for equipment at Hoover Dam paid for by contractors prior to October 1, 2017 (per 2011 Act).

EXISTING APA CUSTOMERS' PROPOSED HOOVER SCHEDULE "A" AND "B" ALLOCATIONS FOR EXISTING APA CUSTOMERS

Existing APA Customers	Hoover Schedule "A"		Hoover Schedule "B"		Hoover Schedule "A" and "B"	
	Capacity (kW)	Energy (kWh)	Capacity (kW)	Energy (kWh)	Capacity (kW)	Energy (kWh)
Aguila Irrigation District	2,474	7,969,543	3,878	4,110,650	6,352	12,080,193
Avra Valley Irrigation District	636	2,059,598	-	-	636	2,059,598
Buckeye Water Conservation District	3,009	9,690,941	-	-	3,009	9,690,941
Central Arizona Water Conservation District	-	-	163,199	173,123,250	163,199	173,123,250
Chandler Heights Citrus Irrigation District	939	3,005,797	-	-	939	3,005,797
Cortaro-Marana Irrigation District	6,504	20,902,831	-	-	6,504	20,902,831
Electrical District No. 2 - Pinal County	19,642	63,149,293	-	-	19,642	63,149,293
Electrical District Nos. 1 & 3 - Pinal County	16,057	51,633,404	-	-	16,057	51,633,404
Electrical District No. 4 - Pinal County	19,642	63,149,293	-	-	19,642	63,149,293
Electrical District No. 5 - Maricopa County	353	1,147,599	-	-	353	1,147,599
Electrical District No. 5 - Pinal County	14,916	47,952,157	-	-	14,916	47,952,157
Electrical District No. 6 - Pinal County	8,089	26,002,427	-	-	8,089	26,002,427
Electrical District No. 7 - Maricopa County	10,604	34,106,869	-	-	10,604	34,106,869
Electrical District No. 8 - Maricopa County	13,522	43,461,511	10,917	11,575,750	24,439	55,037,261
Harquahala Valley Power District	2,515	8,070,243	-	-	2,515	8,070,243
Maricopa Water District	8,927	28,704,224	-	-	8,927	28,704,224
McMullen Valley Water Conservation District	3,838	12,325,289	5,342	5,671,500	9,180	17,996,789
Ocotillo Water Conservation District	2,414	7,766,243	-	-	2,414	7,766,243
City of Page, Arizona	-	-	1,050	1,114,350	1,050	1,114,350
Queen Creek Irrigation District	1,788	5,740,845	-	-	1,788	5,740,845
Roosevelt Irrigation District	3,252	10,468,991	-	-	3,252	10,468,991
Roosevelt Water Conservation District	6,827	21,950,680	-	-	6,827	21,950,680
City of Safford, Arizona	-	-	2,101	2,227,750	2,101	2,227,750
Salt River Project	39,174	125,959,437	-	-	39,174	125,959,437
San Tan Irrigation District	525	1,688,148	-	-	525	1,688,148
Silverbell Irrigation & Drainage District	717	2,296,148	-	-	717	2,296,148
Town of Thatcher, Arizona	-	-	1,060	1,125,750	1,060	1,125,750
Tonopah Irrigation District	1,565	5,032,145	-	-	1,565	5,032,145
Wellton-Mohawk Irrigation & Drainage District	2,939	9,455,342	-	-	2,939	9,455,342
Town of Wickenburg, Arizona	-	-	2,313	2,451,000	2,313	2,451,000
<b>Total State of Arizona</b>	<b>190,868</b>	<b>613,689,000</b>	<b>189,860</b>	<b>201,400,000</b>	<b>380,728</b>	<b>815,089,000</b>