

City of Maricopa - Assumes:
 ED3 Preference Bill Credit
 APA Power Cost Estimates for OY18 - OY27
 Current USBR Budgets, Availability Forecast

**ED3 Proposed
 Preference Credit**

Estimated APA Costs													ED3 Hoover Bill Credit (\$/kWh)			City of Maricopa Avoided ED3 Costs			Estimated Net Benefit		
Operating Year	Availability Capacity	Availability Energy	Average kW Capacity	Average kWh Energy	APA Capacity Rate \$/kW-month	APA Energy Rate \$/MWH	APA Power Costs (including MSCP) Annual	Average \$/kWh	Working Capital \$	Repayable Advances \$	Total APA Costs \$	Average \$	ED3 Hoover Bill Credit (\$/kWh)	City of Maricopa Avoided ED3 Costs \$	Estimated Net Benefit \$						
City of Maricopa Entitlements								\$ 11.14						\$ 0.05503							
164																					
357,822																					
2017								\$ 1,826.96		\$ 1,826.96	\$ 1,826.96	\$ 0.0446	\$ 0.05503	\$ 14,509.76	\$ (1,826.96)						
2018	60.10%	73.69%	99	263,670	\$ 3.44	\$ 20.13	\$ 9,394.40	\$ 0.0356	\$ 2,371.05	\$ 11,765.45	\$ 0.0446	\$ 0.05503	\$ 14,509.76	\$ 2,744.31							
2019	60.10%	72.45%	99	259,252	\$ 3.00	\$ 18.39	\$ 8,331.64	\$ 0.0321	\$ 2,371.05	\$ 10,702.69	\$ 0.0413	\$ 0.05503	\$ 14,266.64	\$ 3,563.95							
2020	60.10%	71.84%	99	257,076	\$ 3.15	\$ 19.18	\$ 8,672.92	\$ 0.0337	\$ 2,371.05	\$ 11,043.97	\$ 0.0430	\$ 0.05503	\$ 14,146.89	\$ 3,102.92							
2021	60.10%	70.28%	99	251,479	\$ 2.91	\$ 18.38	\$ 8,079.26	\$ 0.0321	\$ 2,371.05	\$ 10,450.31	\$ 0.0416	\$ 0.05503	\$ 13,838.89	\$ 3,388.58							
2022	60.10%	69.08%	99	247,186	\$ 2.95	\$ 18.79	\$ 8,149.22	\$ 0.0330	\$ 2,371.05	\$ 10,520.27	\$ 0.0426	\$ 0.05503	\$ 13,602.65	\$ 3,082.38							
2023	60.10%	70.24%	99	251,326	\$ 3.01	\$ 18.88	\$ 8,320.91	\$ 0.0331		\$ 8,320.91	\$ 0.0331	\$ 0.05503	\$ 13,830.47	\$ 5,509.56							
2024	60.10%	68.54%	99	245,269	\$ 3.14	\$ 19.82	\$ 8,591.55	\$ 0.0350		\$ 8,591.55	\$ 0.0350	\$ 0.05503	\$ 13,497.15	\$ 4,905.60							
2025	60.10%	68.14%	99	243,812	\$ 3.01	\$ 17.25	\$ 7,781.64	\$ 0.0319		\$ 7,781.64	\$ 0.0319	\$ 0.05503	\$ 13,416.97	\$ 5,635.33							
2026	60.10%	68.14%	99	243,812	\$ 2.95	\$ 16.94	\$ 7,634.78	\$ 0.0313		\$ 7,634.78	\$ 0.0313	\$ 0.05503	\$ 13,416.97	\$ 5,782.19							
2027	60.10%	68.14%	99	243,812	\$ 2.95	\$ 16.94	\$ 7,634.78	\$ 0.0313		\$ 7,634.78	\$ 0.0313	\$ 0.05503	\$ 13,416.97	\$ 5,782.19							
10- Yr. Total/Averages	60.10%	70.05%	99	250,669			\$ 82,591.10	\$ 0.0329	\$ 1,826.96	\$ 11,855.25	\$ 96,273.31	\$ 0.0376	\$ 0.05503	\$ 137,943.37	\$ 41,670.06						
10- Yr. Levelized Cost at interest rate:	5.00%			1,942,620			\$ 64,218.54	\$ 0.0331	\$ 1,739.96	\$ 10,265.41	\$ 72,677.06	\$ 0.0374	\$ 0.05503	\$ 106,902.39	\$ 29,134.75						

Note: Hoover capacity and energy continues to decline in forecast.
 APA Rates and availability provided by the Arizona Power Authority.
 Exclusive of any City of Maricopa administrative fees', consulting fees', IRP's etc. associated with APA contract.
 ED3 program will not allow the City to get energy above it's hydro entitlement per month.
 ED3 Preference Bill Credit (\$/kWh) will be reviewed annually.

ED3 makes no warranty as to the accuracy of this analysis, it is based upon the best information available and current understanding of agreements that are still under negotiations. ED3 is providing this information to assist the City of Maricopa in its own analysis of the APA contract.

**City of Maricopa Hoover Allocation
ED3 Large General Service Bill Crediting Analysis**

2016 Rate 3 - Large General Service Rates

Basic Service Charge/meter-mo	\$78.72
Demand Charge / kW-mo	\$10.85
Energy Charge / kWh	\$0.0541
PPCA Charge/kWh	\$0.0270

Large GS Billing Determinants

Accounts (82 accounts*12 months)	984
Billing Demand kW-months	168,514
Billing Energy kWh	<u>56,593,801</u>
Billing \$	\$6,495,595

Average Billing/kWh	\$0.1148	A
----------------------------	-----------------	----------

Less Costs to Serve (\$/kWh)

Distribution O&M	(\$0.03949)
3rd Party Transmission	(\$0.00710)
Customer Service (A&G)	<u>(\$0.00839)</u>

Total Average Cost to Serve	(\$0.05498)	B
------------------------------------	--------------------	----------

Net - Power Supply Costs	\$0.05982	C=A + B
Average System Losses (less)	8%	D
Generation Rate Credit	\$0.05503	E=C*(1-D)

**Arizona Power Authority
Hoover Operating Account Budget**

Estimated Revenue Requirements

Line No.		Adopted Budget for Operating Year Ending 9/30/16	PROPOSED Budget for Operating Year Ending 9/30/18	Future Years (select sensitivity)									
				OY 2019	OY 2020	OY 2021	OY 2022	OY 2023	OY 2024	OY 2025	OY 2026	OY 2027	
1	Demand Related Costs:												
2	Western's Demand Charge	\$ 6,157,967	\$ 7,998,146	\$ 6,698,036	\$ 7,134,497	\$ 6,427,755	\$ 6,532,855	\$ 6,732,805	\$ 7,096,346	\$ 6,731,145	\$ 6,542,832	\$ 6,542,832	
3	Transmission - 50%	\$ 3,849,611	\$ -										
4	Administrative & General - 50%	\$ 1,291,316	\$ 1,106,769	\$ 1,106,769	\$ 1,106,769	\$ 1,106,769	\$ 1,106,769	\$ 1,106,769	\$ 1,106,769	\$ 1,106,769	\$ 1,106,769	\$ 1,106,769	
5	Uprate Advance Credit - 50%	\$ (3,287,609)	\$ (105,000)										
6	Debt Service - 50%	\$ 3,868,838	\$ 868,056	\$ 868,056	\$ 868,056	\$ 868,056	\$ 868,056	\$ 868,056	\$ 868,056	\$ 868,056	\$ 868,056	\$ 868,056	
7	Other Uprating Credit Related Costs - 50%	\$ 142,050	\$ 105,000										
8	Scheduling Entity Revenue	\$ (2,726,000)	\$ -										
9	Planned Surplus - 50%	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	
10	Interest Income - 50%	\$ (1,380)	\$ (1,380)	\$ (1,380)	\$ (1,380)	\$ (1,380)	\$ (1,380)	\$ (1,380)	\$ (1,380)	\$ (1,380)	\$ (1,380)	\$ (1,380)	
11	Total	\$ 9,494,793	\$ 10,171,591	\$ 8,871,481	\$ 9,307,942	\$ 8,601,200	\$ 8,706,300	\$ 8,906,250	\$ 9,269,791	\$ 8,904,590	\$ 8,716,277	\$ 8,716,277	
12													
13	Energy Related Costs:												
14	Western's Energy Charge	\$ 6,039,833	\$ 7,855,583	\$ 6,579,387	\$ 7,007,328	\$ 6,313,183	\$ 6,416,410	\$ 6,612,795	\$ 6,969,857	\$ 6,611,165	\$ 6,426,209	\$ 6,426,209	
15	Lower Colorado River Basin Dev. Fund Charge	\$ 2,965,232	\$ 3,003,456	\$ 2,953,134	\$ 2,928,348	\$ 2,864,594	\$ 2,815,686	\$ 2,862,847	\$ 2,793,852	\$ 1,542,921	\$ 1,542,921	\$ 1,542,921	
16	Transmission - 50%	\$ 3,849,611	\$ -										
17	Administrative & General - 50%	\$ 1,291,316	\$ 1,106,769	\$ 1,106,769	\$ 1,106,769	\$ 1,106,769	\$ 1,106,769	\$ 1,106,769	\$ 1,106,769	\$ 1,106,769	\$ 1,106,769	\$ 1,106,769	
18	Uprate Advance Credit - 50%	\$ (3,287,609)	\$ (105,000)										
19	Debt Service - 50%	\$ 3,868,838	\$ 868,056	\$ 868,056	\$ 868,056	\$ 868,056	\$ 868,056	\$ 868,056	\$ 868,056	\$ 868,056	\$ 868,056	\$ 868,056	
20	Other Uprating Credit Related Costs - 50%	\$ 142,050	\$ 105,000										
21	Scheduling Entity Revenue	\$ (2,726,000)	\$ -										
22	Planned Surplus - 50%	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	
23	Interest Income - 50%	\$ (1,380)	\$ (1,380)	\$ (1,380)	\$ (1,380)	\$ (1,380)	\$ (1,380)	\$ (1,380)	\$ (1,380)	\$ (1,380)	\$ (1,380)	\$ (1,380)	
24	Total	\$ 12,341,891	\$ 13,032,485	\$ 11,705,966	\$ 12,109,121	\$ 11,351,221	\$ 11,405,541	\$ 11,649,087	\$ 11,937,154	\$ 10,327,532	\$ 10,142,575	\$ 10,142,575	
25													
26	Avg. Capacity Entitlement @ Load (kW)												
27	Schedule 'A'	123,477	114,716.88	114,716.88	114,716.88	114,716.88	114,716.88	114,716.88	114,716.88	114,716.88	114,716.88	114,716.88	
28	Schedule 'B'	122,836	114,110.45	114,110.45	114,110.45	114,110.45	114,110.45	114,110.45	114,110.45	114,110.45	114,110.45	114,110.45	
29	Schedule "D"	17,486.20	17,486.20	17,486.20	17,486.20	17,486.20	17,486.20	17,486.20	17,486.20	17,486.20	17,486.20	17,486.20	
30	Total	246,314	246,314	246,314	246,314	246,314	246,314	246,314	246,314	246,314	246,314	246,314	
31	Energy Entitlement @ Load (MWh)												
32	Schedule 'A'	497,458	452,211.73	444,635.06	440,903.15	431,304.01	423,940.28	431,041.02	420,652.90	418,154.50	418,154.50	418,154.50	
33	Schedule 'B'	163,265	148,406.51	145,920.00	144,695.27	141,545.03	139,128.41	141,458.72	138,049.56	137,229.63	137,229.63	137,229.63	
34	Schedule "D"	46,793.49	46,009.47	45,623.31	44,630.02	43,868.04	44,602.81	43,527.87	43,269.35	43,269.35	43,269.35	43,269.35	
35	Total	660,723	647,412	636,565	631,222	617,479	606,937	617,103	602,230	598,653	598,653	598,653	
36	Recovery of Revenue at Delivery												
37	From Demand Rate	\$9,494,793	\$10,171,591	\$8,871,481	\$9,307,942	\$8,601,200	\$8,706,300	\$8,906,250	\$9,269,791	\$8,904,590	\$8,716,277	\$8,716,277	
38	From Energy Rate	\$12,341,891	\$13,032,485	\$11,705,966	\$12,109,121	\$11,351,221	\$11,405,541	\$11,649,087	\$11,937,154	\$10,327,532	\$10,142,575	\$10,142,575	
39	Total Revenue Requirement	\$21,836,684	\$23,204,076	\$20,577,447	\$21,417,063	\$19,952,421	\$20,111,840	\$20,555,337	\$21,206,946	\$19,232,122	\$18,858,852	\$18,858,852	
40													
41	Estimated APA Rate Without Scheduling Entity Revenue												
42	Demand Charge (\$/kW/Mo.)		3.44	3.00	3.15	2.91	2.95	3.01	3.14	3.01	2.95	2.95	
43	Energy Charge (Mills/kWh)		15.49	13.75	14.54	13.74	14.15	14.24	15.18	14.67	14.36	14.67	
44	LCRBDF (Mills/kWh)		4.64	4.64	4.64	4.64	4.64	4.64	4.64	2.58	2.58	2.58	
45	Sched. A&B Energy Rate (Mills/kWh)		20.13	18.39	19.18	18.38	18.79	18.88	19.82	17.25	16.94	16.94	
46													
47	Composite Rate (Mills/kWh)		35.84	32.33	33.93	32.31	33.14	33.31	35.21	32.13	31.50	31.50	
48	Scheduling Entity Revenue Included***	3.21	2.52	2.08	2.23	1.99	2.02	2.09	2.21	2.09	2.03	2.03	
49	Demand Charge (\$/kW/Mo.)	14.19	11.28	9.39	10.11	9.10	9.35	9.59	10.31	7.68	7.37	7.37	
50	Energy Charge (Mills/kWh)	4.49	4.64	4.64	4.64	4.64	4.64	4.64	4.64	2.58	2.58	2.58	
51	LCRBDF (Mills/kWh)	18.68	15.92	14.03	14.75	13.74	13.99	14.23	14.95	10.26	9.95	9.95	
52	Sched. A&B Energy Rate (Mills/kWh)		\$ 27.42	\$ 23.76	\$ 25.29	\$ 23.48	\$ 24.15	\$ 24.47	\$ 26.16	\$ 23.02	\$ 22.40	\$ 22.40	
53	***	\$5,452,000	33.05										

- Western's Demand charge in OY2018 includes 15,000,000 working capital
- Capacity remains constant, Energy comes from 10 YR plan
- OY 2016 Parker-Davis Transmission Rate - \$1.34/kW Month

Amount of Estimated
Repayable Advances
9/30/2017

New Customers D2 Repayable Advances	Per Allottee	Spread over	
		5 years	Per month
City of Avondale	\$ 39,542	\$ 7,908.33	\$ 659.03
City of Buckeye	\$ 48,433	\$ 9,686.62	\$ 807.22
City of Flagstaff	\$ 12,434	\$ 2,486.71	\$ 207.23
Town Of Fredonia	\$ 7,229	\$ 1,445.76	\$ 120.48
Town of Gilbert	\$ 72,288	\$ 14,457.64	\$ 1,204.80
City of Globe	\$ 8,169	\$ 1,633.71	\$ 136.14
City of Maricopa	\$ 11,855	\$ 2,371.05	\$ 197.59
Town of Oro Valley	\$ 14,675	\$ 2,934.90	\$ 244.58
Town of Payson	\$ 12,506	\$ 2,501.17	\$ 208.43
City of Sedona	\$ 8,024	\$ 1,604.80	\$ 133.73
City of Sierra Vista	\$ 14,747	\$ 2,949.36	\$ 245.78
City of Williams	\$ 59,638	\$ 11,927.55	\$ 993.96
City of Yuma	\$ 71,999	\$ 14,399.81	\$ 1,199.98
Duncan Valley Electric Cooperative, Inc.	\$ 50,602	\$ 10,120.35	\$ 843.36
Graham County Electric Cooperative, Inc.	\$ 72,288	\$ 14,457.64	\$ 1,204.80
Mohave Electric Cooperative, Inc.	\$ 72,288	\$ 14,457.64	\$ 1,204.80
Navopache Electric Cooperative	\$ 72,288	\$ 14,457.64	\$ 1,204.80
Sulphur Springs Valley Electric Cooperative, Inc.	\$ 72,288	\$ 14,457.64	\$ 1,204.80
Trico Electric Cooperative, Inc.	\$ 72,288	\$ 14,457.64	\$ 1,204.80
Avra Water Co-op, Inc.	\$ 7,229	\$ 1,445.76	\$ 120.48
Aha Macav Power Service	\$ 24,000	\$ 4,799.94	\$ 399.99
Hualapai Tribe	\$ 7,229	\$ 1,445.76	\$ 120.48
	\$ 832,037		
D1 Repayable Advances			
City of Chandler Municipal Ulilities Department	\$ 48,882	\$ 9,776.44	\$ 814.70
City of Flagstaff	\$ 14,534	\$ 2,906.90	\$ 242.24
City of Glendale	\$ 30,804	\$ 6,160.89	\$ 513.41
City of Globe	\$ 8,316	\$ 1,663.15	\$ 138.60
City of Payson	\$ 8,605	\$ 1,721.00	\$ 143.42
City of Peoria	\$ 49,967	\$ 9,993.37	\$ 832.78
City of Phoenix	\$ 216,933	\$ 43,386.57	\$ 3,615.55
City of Scottsdale	\$ 171,088	\$ 34,217.54	\$ 2,851.46
City of Tempe Public Works Department	\$ 17,427	\$ 3,485.39	\$ 290.45
City of Tucson Water Department	\$ 90,244	\$ 18,048.81	\$ 1,504.07
Graham County Electric Cooperative, Inc.	\$ 22,561	\$ 4,512.20	\$ 376.02
Mojave Electric Cooperative, Inc.	\$ 82,796	\$ 16,559.21	\$ 1,379.93
Navopache Electric Cooperative, Inc.	\$ 64,212	\$ 12,842.42	\$ 1,070.20
Sulfur Springs Valley Electric Cooperative, Inc.	\$ 197,481	\$ 39,496.24	\$ 3,291.35
Trico Electric Cooperative, Inc.	\$ 216,933	\$ 43,386.57	\$ 3,615.55
Metropolitan Domestic Water Improvement District	\$ 12,944	\$ 2,588.73	\$ 215.73
Northern Arizona Irrigation District Power Pool	\$ 17,788	\$ 3,557.70	\$ 296.47
	\$ 1,271,516		
A & B Repayable Advances			
Franklin Irrigation District	\$ 27,089	\$ 5,417.87	\$ 451.49
Gila Valley Irrigation District	\$ 81,357	\$ 16,271.48	\$ 1,355.96
Grover's Hill Irrigation District	\$ 8,940	\$ 1,788.08	\$ 149.01
Hohokam Irrigation and Drainage District	\$ 8,940	\$ 1,788.08	\$ 149.01
Hyder Valley Irrigation and Water Delivery District	\$ 8,940	\$ 1,788.08	\$ 149.01
Markham Irrigation and Water Conservation District	\$ 8,940	\$ 1,788.08	\$ 149.01
Mohave Valley Irrigation and Drainage District	\$ 34,867	\$ 6,973.49	\$ 581.12
St. David Irrigation District	\$ 7,242	\$ 1,448.34	\$ 120.70
Silvercreek Irrigation District	\$ 8,940	\$ 1,788.08	\$ 149.01
City of Mesa	\$ 80,420	\$ 16,083.97	\$ 1,340.33
Ak-Chin Tribe	\$ 5,480	\$ 1,095.90	\$ 91.33
	\$ 281,157		
Grand Total	\$ 2,384,710		

City of Maricopa - Assumes:
 ED3 Preference Bill Credit
 APA Power Cost Estimates for OY18 - OY27
 Current USBR Budgets, Availability Forecast

ED3 Proposed Preference Credit

Estimated APA Costs

Operating Year	Availability Capacity	Availability Energy	Average kW Capacity	Average kWh Energy	APA Capacity Rate \$/kW-month	APA Energy Rate \$/MWH	APA Power Costs (including MSCP)		Working Capital	Repayable Advances	Total APA Costs	Average	ED3 Hoover Bill Credit (\$/kWh)	City of Maricopa Avoided ED3 Costs	Estimated Net Benefit
							Annual	Average \$/kWh							
City of Maricopa Entitlements									\$ -					\$ 0.05503	
	164	357,822													
2017									\$ -		\$ -				\$ -
2018	61.96%	75.97%	102	271,825	\$ 3.88	\$ 21.95	\$ 10,715.68	\$ 0.0394		\$ 2,466.94	\$ 13,182.62	\$ 0.0485	\$ 0.05503	\$ 14,958.53	\$ 1,775.91
2019	61.96%	74.69%	102	267,240	\$ 2.95	\$ 18.02	\$ 8,426.46	\$ 0.0315		\$ 2,466.94	\$ 10,893.40	\$ 0.0408	\$ 0.05503	\$ 14,706.22	\$ 3,812.81
2020	61.96%	74.07%	102	265,027	\$ 3.12	\$ 18.92	\$ 8,833.19	\$ 0.0333		\$ 2,466.94	\$ 11,300.13	\$ 0.0426	\$ 0.05503	\$ 14,584.44	\$ 3,284.30
2021	61.96%	72.45%	102	259,257	\$ 2.88	\$ 18.12	\$ 8,222.86	\$ 0.0317		\$ 2,466.94	\$ 10,689.80	\$ 0.0412	\$ 0.05503	\$ 14,266.91	\$ 3,577.11
2022	61.96%	71.22%	102	254,831	\$ 2.91	\$ 18.46	\$ 8,266.02	\$ 0.0324		\$ 2,466.94	\$ 10,732.96	\$ 0.0421	\$ 0.05503	\$ 14,023.35	\$ 3,290.39
2023	61.96%	72.41%	102	259,099	\$ 2.95	\$ 18.46	\$ 8,393.77	\$ 0.0324			\$ 8,393.77	\$ 0.0324	\$ 0.05503	\$ 14,258.22	\$ 5,864.45
2024	61.96%	70.66%	102	252,855	\$ 3.07	\$ 19.37	\$ 8,655.48	\$ 0.0342			\$ 8,655.48	\$ 0.0342	\$ 0.05503	\$ 13,914.61	\$ 5,259.13
2025	61.96%	70.25%	102	251,353	\$ 3.07	\$ 19.47	\$ 8,651.52	\$ 0.0344			\$ 8,651.52	\$ 0.0344	\$ 0.05503	\$ 13,831.96	\$ 5,180.44
2026	61.96%	70.16%	102	251,037	\$ 3.14	\$ 19.83	\$ 8,821.42	\$ 0.0351			\$ 8,821.42	\$ 0.0351	\$ 0.05503	\$ 13,814.57	\$ 4,993.15
2027	61.96%	70.16%	102	251,037	\$ 2.95	\$ 18.87	\$ 8,347.87	\$ 0.0333			\$ 8,347.87	\$ 0.0333	\$ 0.05503	\$ 13,814.57	\$ 5,466.70
10- Yr. Total/Averages	61.96%	72.20%	102	258,356			\$ 87,334.27	\$ 0.0338	\$ -	\$ 12,334.72	\$ 99,668.99	\$ 0.0385	\$ 0.05503	\$ 142,173.36	\$ 42,504.37
10- Yr. Levelized Cost at interest rate:	5.00%			2,002,278			\$ 67,802.28	\$ 0.0339	\$ -	\$ 10,680.58	\$ 74,745.58	\$ 0.0373	\$ 0.05503	\$ 110,185.37	\$ 30,192.87

Note: Hoover capacity and energy continues to decline in forecast.
 APA Rates and availability provided by the Arizona Power Authority.
 Exclusive of any City of Maricopa administrative fees', consulting fees', IRP's etc. associated with APA contract.
 ED3 program will not allow the City to get energy above it's hydro entitlement per month.
 ED3 Preference Bill Credit (\$/kWh) will be reviewed annually.

ED3 makes no warranty as to the accuracy of this analysis, it is based upon the best information available and current understanding of agreements that are still under negotiations. ED3 is providing this information to assist the City of Maricopa in its own analysis of the APA contract.