



TO: Governance Committee (GC)
FROM: Executive Director's Office (EDO)
SUBJECT: Draft Tables of Budget Options with J2 Reservoir
DATE: November 25, 2015

FOR DISCUSSION PURPOSES:**Table 1. Draft comparison of RJH's J-2 Reservoir concepts, construction costs and land costs.**

Capacity (AF)	Construction Cost	Score (AF)	Area (ac)	Land Cost	Total Cost	Program Cost	Program Score (AF)	Program 50-Yr Cost/AF
RJH	RJH	EDO	EDO	EDO	n/a	75%	75%	75%
14,700	\$107,000,000	43,200	780	\$7,488,000	\$114,488,000	\$85,866,000	32,400	\$ 53
11,900	\$ 89,000,000	37,900	585	\$5,616,000	\$ 94,616,000	\$70,962,000	28,425	\$ 50
10,500	\$ 81,000,000	35,100	524	\$5,030,400	\$ 86,030,400	\$64,522,800	26,325	\$ 49
7,400	\$ 67,000,000	28,100	315	\$3,024,000	\$ 70,024,000	\$52,518,000	21,075	\$ 50
6,000	\$ 61,000,000	24,500	263	\$2,524,800	\$ 63,524,800	\$47,643,600	18,375	\$ 52
4,000	\$ 55,000,000	18,700	211	\$2,025,600	\$ 57,025,600	\$42,769,200	14,025	\$ 61

Table Notes:

- Land costs assumed \$9,600/acre. EDO roughly estimated footprint sizes; land cost based only on estimated footprint size.
- 50-Yr cost is the total construction plus land cost divided by the score for 50 years.
- Storage volumes and construction cost based on RJH's estimates presented at the November 2015 GC budget meeting. All reservoirs assumed to be 1 cell.
- Costs do not include operations and maintenance. Operations and maintenance have been estimated at \$250,000/year, which equates to \$9m over 50 years (assuming Program pays 75%). J-2 Reservoir cost includes \$14.6m "expenditure" in 2013 towards land costs.
- Costs are preliminary and subject to change.
- The 10,500 AF capacity is a mid-range capacity, similar in cost to the previous reservoir(s) concept, with a construction cost that fits in the current Water Plan budget (draft budget provided in Table 2). It is assumed the Program will stay within the range of the 7,400 AF to 14,700 AF capacities (draft budgets provided in Table 3).



Table 2. Draft Water Plan budget with the J-2 Reservoir concept of 10,500 AF capacity.

WP	Project	Score (AF)	Total Cost (2007-2019)	Total Cost/AF
WP(1-2,5-9)	<i>Other Water Plan Costs</i>	<i>n/a</i>	<i>\$ 7,668,632</i>	<i>n/a</i>
WP-4(a)	Water Action Plan (J2 Reg Reservoir - 10,500 AF)	26,300	\$ 64,522,800	\$ 2,453
WP-4(b)i	Water Action Plan (CNPPID system groundwater projects)	3,540	\$ 1,729,496	\$ 489
WP-4(b)ii	Broad-Scale Recharge Projects	10,000	\$ 6,000,000	\$ 600
WP-4(b)iii	Dawson Cty/Gothenburg Canal Recharge (NPPD)	-	\$ -	\$ -
WP-4(c)i	No cost NCCW	250	\$ -	\$ -
WP-4(c)ii	Water Action Plan (Purchased NCCW)	-	\$ -	\$ -
WP-4(d)	Water Action Plan (Pathfinder Municipal Acct)	4,000	\$ 1,958,400	\$ 490
WP-4(e)	Water Action Plan (CO GW Mgmt)	-	\$ -	\$ -
WP-4(f)i	Water Action Plan (CPNRD Surface & Groundwater Leasing)	3,490	\$ 4,203,900	\$ 1,205
WP-4(f)ii	Water Action Plan (NPPD Leasing)	380	\$ 642,042	\$ 1,690
WP-4(f)iii	Water Action Plan (CNPPID Leasing-Storage)	1,820	\$ 2,524,181	\$ 1,387
WP-4(f)iv	Water Action Plan (CNPPID Leasing-Irrigator)	1,670	\$ 2,665,112	\$ 1,596
WP-4(f)v	Water Action Plan (NPNRD Leasing)	-	\$ -	\$ -
WP-4(f)vi	CPNRD Groundwater Market	1,770	\$ 1,185,000	\$ 669
WP-4(g)	Water Action Plan (Water Mgmt Incentives)	-	\$ -	\$ -
WP-4(h)	Water Action Plan (NE GW Mgmt)	-	\$ 47,092	\$ -
TOTAL		53,220	\$ 93,146,656	

Table Notes:

- J-2 Reservoir costs based on Table 1 for the 10,500 AF capacity concept. Future operation and maintenance costs not included in J-2 Reservoir budget.
- Includes actual expenditures 2007-2014, approved 2015 budget (not expenditures) and projected costs 2016-2019 for all Water Plan budget line items. Water Plan budget is considered \$93m in 2005 dollars.
- Broad-scale recharge scores and costs are very rough estimates.
- Projects with gray text are not currently included as projects with score.
- Costs are preliminary and subject to change.



Table 3. Draft Water Plan budget with high and low estimate alternatives for J-2 Reservoir and broad-scale recharge.

WP	Project	LOW		HIGH	
		Score (AF)	Total Cost (2007-2019)	Score (AF)	Total Cost (2007-2019)
WP(1-2,5-9)	Other Water Plan Costs	n/a	\$ 7,668,632	n/a	\$ 7,668,632
WP-4(a)	Water Action Plan (J2 Reg Reservoir - 7,400 AF to 14,700 AF)	21,100	\$ 52,518,000	32,400	\$ 85,866,000
WP-4(b)i	Water Action Plan (CNPPID system groundwater projects)	3,540	\$ 1,729,496	3,540	\$ 1,729,496
WP-4(b)ii	Broad-Scale Recharge Projects	10,000	\$ 6,000,000	20,000	\$ 12,000,000
WP-4(b)iii	Dawson Cty/Gothenburg Canal Recharge (NPPD)	-	\$ -	-	\$ -
WP-4(c)i	No cost NCCW	250	\$ -	250	\$ -
WP-4(c)ii	Water Action Plan (Purchased NCCW)	-	\$ -	-	\$ -
WP-4(d)	Water Action Plan (Pathfinder Municipal Acct)	4,000	\$ 1,958,400	4,000	\$ 1,958,400
WP-4(e)	Water Action Plan (CO GW Mgmnt)	-	\$ -	-	\$ -
WP-4(f)i	Water Action Plan (CPNRD Surface & Groundwater Leasing)	3,490	\$ 4,203,900	3,490	\$ 4,203,900
WP-4(f)ii	Water Action Plan (NPPD Leasing)	380	\$ 642,042	380	\$ 642,042
WP-4(f)iii	Water Action Plan (CNPPID Leasing-Storage)	1,820	\$ 2,524,181	1,820	\$ 2,524,181
WP-4(f)iv	Water Action Plan (CNPPID Leasing-Irrigator)	1,670	\$ 2,665,112	1,670	\$ 2,665,112
WP-4(f)v	Water Action Plan (NPNRD Leasing)	-	\$ -	-	\$ -
WP-4(f)vi	CPNRD Groundwater Market	1,770	\$ 1,185,000	1,770	\$ 1,185,000
WP-4(g)	Water Action Plan (Water Mgmnt Incentives)	-	\$ -	-	\$ -
WP-4(h)	Water Action Plan (NE GW Mgmnt)	-	\$ 47,092	-	\$ 47,092
TOTAL		48,020	\$ 81,141,856	69,320	\$ 120,489,856

Table Notes:

- J-2 Reservoir costs based on Table 1 for the 7,400 AF capacity concept (considered “low”) and 14,700 AF (considered “high”). Future operation and maintenance costs not included in J-2 Reservoir budget.
- “Low” scenario is below Water Plan budget (\$93m in 2005 dollars) and “high” scenario is above.
- Broad-scale recharge scores and costs are very rough estimates.
- Includes actual expenditures 2007-2014, approved 2015 budget (not expenditures) and projected costs 2016-2019 for all Water Plan budget line items.
- Projects with gray text are not currently included as projects with score.
- Costs are preliminary and subject to change.

Additional Alternatives from Table 3:

(1) “High” J-2 Reservoir with “Low” Broad-Scale Recharge:

- J-2 Reservoir (14,700 AF storage; 32,400 AFY score; \$86m)
- Broad-scale recharge (score of 10,000 AFY; \$6m)
- Total score = 59,300 AFY
- Total cost = \$107m

(2) “Low” J-2 Reservoir with “High” Broad-Scale Recharge:

- J-2 Reservoir (7,400 AF storage; 21,100 AFY score; \$53m)
- Broad-scale recharge (score of 20,000 AFY; \$12m)
- Total score = 58,000 AFY
- Total cost = \$79m