



TO: Herb Niederberger, City of Davis, General Manager - Utilities, Development & Operations

FROM: Doug Dove, President
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DATE: June 20, 2013

SUBJECT: DRAFT – Domestic Water Rates for the North Davis Meadows CSA

DRAFT MEMORANDUM

The City of Davis (City) is considering options to provide domestic water service to the North Davis Meadows County Service Area (CSA). Governed by the Yolo County Board of Supervisors, the CSA includes about 95 single family residences and a public golf course. The CSA owns a water distribution system with three wells and has been evaluating alternatives for water supply because the wells currently violate the maximum contaminant level for nitrate.

One alternative is to consolidate with the City's water system. The City would provide domestic, potable water supply through the construction of a separate distribution system within the CSA. The CSA's existing wells would continue to provide non-potable irrigation supply and fire protection. Each home would have two separate meters, one meter for indoor potable domestic use and the other for non-potable irrigation and fireflow.

The City currently provides contract operation and maintenance of the CSA's water system including meter reading. Once consolidated, the City would continue to provide contract water system operation and maintenance including meter reading for the dual systems. The City would continue to bill the County biannually.

At the request of the City, BWA developed preliminary draft domestic water rates for the CSA. This draft contract agreement rate includes fixed charges based on meter size and variable charges based on monthly consumption. Key assumptions include:

- All 95 single family residential customers are assumed to have ¾" domestic water meters.

- Historical City winter water consumption patterns are used to estimate CSA indoor domestic use. Based on 2011 water use data, the City's average monthly winter water use for single family customers is 8.43 hundred cubic feet (ccf). The total domestic annual water consumption for the CSA is estimated at 9,690 ccf (8.5 ccf x 12 months x 95 customers).
- The domestic water rate is based on lower system capital and operating costs associated with the minimal domestic peaking. The peaking factor for the CSA domestic water is estimated at 1.0.
- Since the CSA's existing system will provide fire protection, the City's fireflow costs, Estimated to account for 6 percent of total water expenses, are excluded from the domestic rate calculation.
- The local CSA capital costs to construct the new domestic water distribution system are assumed to be funded separately by the CSA and are not included in the domestic rates.
- The CSA rate is based on a "traditional" rate structure and includes a meter charge and uniform block volumetric rate.

Table 1 summarizes the preliminary draft domestic water rates for the CSA and compares them to the adopted City water rates. The CSA domestic rates are lower than the adopted City rates for two reasons: 1) because estimated annual domestic water use is constant (level) with a peaking factor of 1.0 whereas the peaking factor for the City's single family residential class is 1.62 (see Table 2) and 2) because the domestic system will not provide fireflow. Table 3 shows the estimated annual revenues for the CSA based on the preliminary draft water rates.

City of Davis - 2013 Water Rate Study

Table 1. Water Rates With Separate North Davis Meadows CSA Contract Agreement Rate

	Council - Approved BWA Water Rate Study		Estimated Separate Domestic NDM Rate Class	
	1-Jul-13	1-Jan-14	1-Jul-13	1-Jan-14
Meter Replacement				
3/4" - All	\$1.75	\$1.75	\$1.75	\$1.75
1"	\$2.58	\$2.58	\$2.58	\$2.58
1-1/2"	\$3.68	\$3.68	\$3.68	\$3.68
2"	\$6.35	\$6.35	\$6.35	\$6.35
3"	\$7.18	\$7.18	\$7.18	\$7.18
4"	\$9.75	\$9.75	\$9.75	\$9.75
6"	\$13.80	\$13.80	\$13.80	\$13.80
8"	\$17.39	\$17.39	\$17.39	\$17.39
Admin/Billing Charge				
All	\$2.12	\$2.12	\$2.12	\$2.12
Readiness to Serve				
3/4"	\$13.46	\$15.81	\$13.46	\$15.70
<i>3/4" N. Davis Meadows</i>			<i>\$4.91</i>	<i>\$5.67</i>
1"	\$22.43	\$26.35	\$22.43	\$26.16
1-1/2"	\$44.88	\$52.71	\$44.88	\$52.32
2"	\$71.80	\$84.33	\$71.80	\$83.72
3"	\$143.61	\$168.67	\$143.61	\$167.44
4"	\$224.39	\$263.55	\$224.39	\$261.62
6"	\$448.79	\$527.10	\$448.79	\$523.25
8"	\$718.06	\$843.37	\$718.06	\$837.20
TOTAL MONTHLY FIXED/READINESS TO SERVE CHARGE				
3/4"	\$17.33	\$19.68	\$17.33	\$19.57
<i>3/4" N. Davis Meadows</i>			<i>\$9.61</i>	<i>\$10.37</i>
1"	\$27.13	\$31.05	\$27.13	\$30.86
1-1/2"	\$50.68	\$58.51	\$50.68	\$58.12
2"	\$80.27	\$92.80	\$80.27	\$92.19
3"	\$152.91	\$177.97	\$152.91	\$176.74
4"	\$236.26	\$275.42	\$236.26	\$273.49
6"	\$464.71	\$543.02	\$464.71	\$539.17
8"	\$737.57	\$862.88	\$737.57	\$856.71
CONSUMPTION CHARGES FOR INCLINING TIERS				
<u>SFR Tiered Rates (\$/ccf)</u>				
Tier 1: 0 - 18	\$1.26	\$1.53	\$1.25	\$1.53
Tier 2: 19 - 29	\$1.40	\$1.69	\$1.39	\$1.70
Tier 3: 30 +	\$2.36	\$2.85	\$2.35	\$2.87
MFR Rate (\$/ccf)	\$1.81	\$2.24	\$1.81	\$2.27
<i>N. Davis Meadows</i>	<i>\$1.81</i>	<i>\$2.24</i>	<i>\$1.20</i>	<i>\$1.51</i>
Comm Rate (\$/ccf)	\$1.51	\$1.87	\$1.51	\$1.87
Irrig Rate (\$/ccf)	\$2.37	\$2.94	\$2.37	\$2.95

City of Davis - 2013 Water Rate Study

Table 2. Annual Consumption and Peaking Ratio

Customer Class	Total	% of Total	Peak	Average	Ratio
Single Family Residential	2,534,160	55.6%	682,622	422,360	1.62
Multi-Family Residential	982,053	21.5%	189,054	153,986	1.23
<i>N. Davis Meadows</i>	<i>9,690</i>	<i>0.2%</i>	<i>9,690</i>	<i>9,690</i>	<i>1.00</i>
Commercial	440,450	9.7%	100,993	72,744	1.39
<u>Irrigation</u>	<u>593,275</u>	<u>13.0%</u>	<u>205,218</u>	<u>98,879</u>	<u>2.08</u>
Total	4,559,628	100.0%	1,187,577	757,658	1.57

City of Davis - 2013 Water Rate Study
 Table 3. Estimated Revenues for North Davis Meadows

FIXED CHARGES

N. Davis Meadows Meter Size	# of Meters	Single-Family		North Davis Meadows	
		Approved 1/1/2014 Rate (\$/Month)	Total Annual Cost	Separate Class 1/1/2014 Rate (\$/Month)	Total Annual Cost
3/4"	95	\$19.68	\$22,435.20	\$10.37	\$11,819.42
		Total	\$22,435.20		\$11,819.42
				Difference in Fixed Charges	(\$10,615.78)

CONSUMPTION CHARGES

Estimated Annual Consumption (2011 City SRF winter water use avg = 8.43 ccf)
 = 9,690 ccf

Average Rate	Single-Family		Separate Class 1/1/2014 Rate (\$/ccf)	Total Annual Cost
	Approved 1/1/2014 Rate (\$/ccf)	Total Annual Cost		
	\$1.69	\$16,376.10	\$1.51	\$14,631.90
			Difference in Consumption Charges	(\$1,744.20)

Estimated 2014 Total Annual Cost \$38,811.30 \$26,451.32