



CITY OF LODI COUNCIL COMMUNICATION

AGENDA TITLE: Review Groundwater Charge for City Wells Proposed by the North San Joaquin Water Conservation District and Direct Staff as Appropriate

MEETING DATE: April 18, 2007 (Carried over from meeting of 4/4/07)

PREPARED BY: Public Works Director

RECOMMENDED ACTION: Receive a report on the groundwater charge proposed by the North San Joaquin Water Conservation District and direct staff on the Council's desired response as appropriate.

BACKGROUND INFORMATION: The North San Joaquin Water Conservation District (NSJWCD) is conducting a public hearing on a proposed groundwater charge on April 30, 2007 (Exhibit A). The proposed charge would be imposed on well owners, including the City of Lodi's wells within the District. The charge to the City would total about \$200,000 per year.

The District is proposing to implement a number of projects to utilize "wet year" water for groundwater recharge and direct irrigation, thereby minimizing groundwater pumping. Of course, all these efforts are aimed at reducing the groundwater overdraft situation that exists throughout the Eastern San Joaquin Basin. Various engineering studies have documented the overdraft and project that it will continue to worsen and will accelerate in the area directly east of Lodi, which is the NSJWCD. Computer modeling of the basin shows that the groundwater gradient in the Lodi area will, over time, shift from a north-to-south orientation to a west-to-east orientation. This means that lower quality groundwater from the west will migrate toward Lodi. This is of long-term concern to the City. A copy of the District's Engineer's Report on the proposed charge is attached (Exhibit B).

While the City has taken major steps to reduce our reliance on groundwater pumping, we are far from eliminating it, and future lowering of groundwater elevations and the change in gradient will have an adverse economic effect on the City. The City's options on this matter are to actively support the charge, take no action, or file a protest at or before the scheduled hearing.

Staff supports the intent and need for the charge; we suggest the Council concur and request payment terms that reduce the cash flow impact to the already-stressed Water Fund. District staff has indicated the charge is not likely to be imposed this fiscal year. While the charge can be included in the Water Fund budget for FY07/08, we are concerned about our cash flow and have informally asked the District to consider some type of timed payment arrangement. We believe we will be able to work out a suitable arrangement should the Council provide that direction.

FISCAL IMPACT: A \$200,000 annual charge represents approximately 2.4% of the Water Fund annual revenue. The recent discontinuance of the discount program offsets about 2/3 of this additional cost. The remaining cost will need to be absorbed within the Fund. Given other demands on the Fund, staff would suggest this cost be considered along with all other issues involving water at a later date.

FUNDING AVAILABLE: Not applicable.

Richard C. Prima, Jr.
Public Works Director

Attachments

cc: Steve Schwabauer, City Attorney
Ed Steffani, North San Joaquin Water Conservation District

Charlie Swimley, Water Services Manager;

APPROVED: _____
Blair King, City Manager

DIRECTORS
John Ferreira
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NORTH SAN JOAQUIN WATER CONSERVATION DISTRICT

221 W. Pine St., Lodi, CA 95240

GENERAL MANAGER
Edward M. Steffani

LEGAL COUNSEL
Karna Harrigfeld

March 14, 2007

*Richard Prina
City of Lodi*

Dear Well Owner,

The North San Joaquin Water Conservation District proposes a charge for pumping groundwater. This is necessary to fund groundwater recharge and irrigation supply projects and to prevent the State from taking our water rights.

As you well know, our groundwater basin is severely overdrafted. We pump approximately 200,000 acre-feet more than is naturally replaced every year in the eastern San Joaquin County basin. A house in the City uses about 0.5 acre-feet per year while an acre of orchard uses 2.8 acre-feet per year. Not only is it necessary that more surface water be recharged and used in place of groundwater, it is mandatory that we show the State that we are serious about correcting the overdraft. If we don't convince the State of our good intentions, we will lose our right to take surface water from the Mokelumne River and will have our well pumping restricted.

The proposed agriculture charge would be the same as that imposed by our neighbor, Stockton East Water District (SEWD). The proposed rural residential rate of \$21.40 would be less than SEWD's \$32.50. Charges would be as follows:

- \$ 4.28 per acre-foot for agriculture
- \$ 21.40 per acre-foot for non agriculture

The estimated charge for your property is based upon the above rate and assumes the following:

- Irrigated pasture and golf courses, 4.0 acre-feet annually (AFA) for a charge of \$17.12 per acre
- Orchard and row crop use of 2.8 (AFA) for a charge of \$11.98 per acre
- Vineyard use of 1.5 (AFA) for a charge of \$6.42 per acre
- Single family rural residential use of 1 (AFA) for a charge of \$21.40

All other uses will be estimated, with the understanding that the District will revise the charges to reflect any actual use measured by the property owner, with a water meter or with PG&E electric meter reading.

The District has made these estimates using information provided by the County Assessor. Should you have any questions, please write the District Manager, P. O. Box 428, Clements, CA 95227.

Should these charges be imposed, the District would eliminate the current \$50 per acre surface water charge. This will encourage people to use more surface water and less groundwater.

Some of you already have access to surface water. Planned improvements would make it available to more people.

The District's Board of Directors will consider adopting these charges at a public hearing scheduled for 5:00 P. M., Monday, April 30, 2007 in Crete Hall, Hutchins Street Square, 125 South Hutchins Street, Lodi, California.

Estimated charge

9300 AFA @ \$21.40 = \$199,020.

**ENGINEER'S REPORT
PROPOSED GROUNDWATER CHARGE
MARCH 2007**

The following report has been prepared in accordance with Section 75561 of the Water Code.

Annual Overdraft

Overdraft of the Eastern San Joaquin County Groundwater Basin has been common knowledge since the early 1900's when falling levels made use of centrifugal pumps impossible unless pits were dug to keep the suction lift under twenty feet. Continuing decline of water levels led to the invention of the vertical turbine pump.

Dangerously low water levels in the Stockton area during the 1970's caused the electorate to vote overwhelming in favor of a Stockton East Water District Treatment Plant to treat surface water from New Hogan Reservoir.

The State formally recognized the problem in 1982 when it designated the Basin as being "critically overdrafted".

A number of studies have been completed over the years, with the first detailed report by Brown and Caldwell, consulting engineers, accepted in 1985. That study estimated the overdraft to be 269,000 acre-feet annually (AFA) for the 600,000 acre area of San Joaquin County lying easterly of the San Joaquin River.

More recent studies have estimated the overdraft to be anywhere from 130,000 to 200,000 AFA. No absolute number is possible, only estimates, at least at this point.

I will use 200,000 AFA as a reasonable estimate of the overdraft. This works out to be about 0.33 AFA for each of the approximate 600,000 acres within the Basin.

At any rate, the 200,000 AFA figure is reasonable for current development. We know that an overdraft of 200,000 AFA causes groundwater levels to fall about 1 foot per year. Some areas see a little more and others a little less. Please see the following table for wells within the District.

Ground Water Elevation Data

Location	Water Elevations		Decline Feet/Year		
	Year/Elevation	Year/Elevation			
Source- EBMUD Records					
e/o Clements Rd & n/o Kettleman	1962	17.7	2002	-21.2	1.0
East end of Kettleman	1962	27.2	2002	-25.6	1.3
Kettleman between Tully & Linn	1962	-1.6	2002	-35.8	0.9
Harney at Tully	1962	-3.6	2002	-38.4	0.9
Jack Tone s/o Harney Lane	1962	-10.0	2002	-38.7	0.7
Tully s/o Harney Lane	1962	-3.2	1988	-23.1	0.8
Tully at Live Oak	1962	-11.3	1988	-27.4	0.7
Linn at Sargent	1962	12.9	2002	-27.0	1
Brandt at Tully	1964	2.8	2002	-24.2	0.7
n/o Sargent, e/o Tully	1962	3.2	2002	-29.9	0.8
Kettleman at Linn	1962	5.2	2002	-34.6	1

Source- County Data

Liberty Road at Mackville Road	1975	20.0	1998	-13.0	1.4
Liberty at Hwy 88	1975	60.0	1998	60.0	0
Clements at Hwy 88	1975	50.0	1998	3.0	2
Clements at Brandt Road	1975	9.0	1998	-22.0	1.3
Clements at Harney Lane	1975	-10.0	1998	-32.0	1

Source - EBMUD Records

Liberty e/o Bruella	1962	0.6	1978	-40.1	2.5
Liberty e/o Bruella	1973	-19.0	2002	-35.7	0.6
Collier w/o Bruella	1966	-14.4	2002	-33.4	0.5
Collier w/o Mackville	1962	37.8	1999	-4.9	1.2
Collier w/o Hwy 88	1962	52.5	2002	2.9	1.3
Buena Vista Road	1962	73.6	2002	54.8	0.5
n/o Hwy 12 & e/o Hwy 99	1962	61.8	2002	33.3	0.7
Hwy 88 n/o Hwy 12	1962	47.0	2002	8.5	1

Ground Water Elevation Data

Location	Water Elevation		Decline Feet/ Year		
	Historical High** Year/Elevation	Latest Year/Elevation			
Soucre -County Data					
Collier & Eunice	1963	-8.0	2002	-18.6	0.3
Collier & Kennefick	1960	-4.8	2002	-34.5	0.7
Hwy 99 & Jahant	1960	-0.1	2002	-19.6	0.5
Peltier & Kennefick	1958	11.9	2002	-29.8	0.9
Acampo e/o Hwy 99	1958	16.5	2002	-10.6	0.6
Hwy 99 & Woodbridge	1958	24.5	2002	4.0	0.5
Locke w/o Hwy 88	1963	11.5	2002	-15.6	0.7
Brandt & Tully	1959	16.6	2002	-27.6	1
Hwy 12 & Locust Tree	1958	19.7	2002	-18.8	0.9

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Ground Water Elevation Data

Source - County Data	Water Elevation				Decline Feet/Year
	Historical High**		Latest		
	Year/Elevation	Year/Elevation	Year/Elevation	Year/Elevation	
Hwy 12 & Alpine	1958	21.4	2002	-18.6	0.9
Kettleman & Curry	1960	15.0	2002	-19.7	0.8
Kettleman & Hwy 99	1983	-2.6	2002	-24.3	1.1
Harney & Vintage	1965	-0.7	2002	-32.0	0.8
Harney & Hwy 88	1965	-2.4	2002	-31.0	0.8
Alpine & Handel	1980	-30.5	2002	-32.0	0.1
Armstrong & Lower Sacramento	1960	0.6	2002	-34.2	0.8
Jack Tone & Live Oak	1958	8.6	2002	-46.7	1.3
Ham and West Lane	1971	-1.2	2002	-21.9	0.7

** San Joaquin County and Stockton East Water District began monitoring levels in the 1950's.

Based upon the above assumption that the average overdraft is 0.33 AFA per acre, the 150,000 acre North San Joaquin Water Conservation District (District) has a current overdraft of 50,000 AFA. But only 100,000 acres of the District have been developed and now use 173,000 AFA of groundwater. Some 50,000 acres are dry pasture which are and will be developed.

Vineyards and houses are moving into the dry pasture area. A 200 acre vineyard is replacing dry pasture across from my 10 acres of irrigated pasture (formerly dry).

Assuming a new groundwater demand of 1.75 AF/acre, development of the 50,000 acres will increase the District overdraft to 137,500 AFA.

Accumulated Overdraft

The accumulated overdraft from the time man began pumping groundwater from the Basin probably approaches ten million acre-feet. It would be impractical to try to bring the Basin back to "natural pre-man" conditions. It is generally accepted that the empty, usable space (accumulated overdraft) is somewhere between two and three million acre-feet.

Again, assuming that the accumulated overdraft is spread uniformly throughout the Basin, the District's share is 500,000 to 750,000 acre-feet.

Groundwater Production for 2005-2006*

The following table develops groundwater use by type of development within the District.

Water Code Section 75507 defines water year as July 1st to June 30th.

Estimated Groundwater Use 2005-2006				
Use Code	Description	Quantity	AFA/Unit	Total AFA
0	Single Family Dwelling	100 each	0.5	50
51	Rural Residential	2428 each	1	2,428
52	Rural Residential, 2+ Residences	250 each	2	500
291	Nursery	716 Acres	4	2,864
352	Large Winery	10 each	4	40
353	Small Winery	6 each	2	12
-	Misc. Commercial	100 each	0.5	50
401	Irrigated Orchard	8,185 acres	2.8	22,918
420	Irrigated Vineyard	45,309 acres	1.5	67,964
450	Irrigated Row Crops	7,204 acres	2.8	20,171
460	Irrigated Pasture	11,070 acres	4	44,280
462	Horse Ranch	40 each	2	80
471	Dairy	27 each	5	135
480	Poultry Ranch	13 each	5	65
-	Ag. Residences	1,028 each	1	1,028
-	Golf Courses	592 acres	4	2,368
-	Cemeteries	83 acres	4	332
-	Lodi Schools*			27
-	City of Lodi	-	-	9,300
-	Lockeford Community SVC District	-	-	520
-	County Service Areas	-	-	232
-	Micke Grove park	62 acres	4	248
-	Micke Grove Golf Course	87 acres	4	348
	Subtotal			175,960
	Less Surface Water			-3000
	TOTAL			172,960
	*Not included in City or Service Areas			

I consider the 2005-2006 groundwater production to be fairly normal. Production increases during dry years and decreases when rainfall is high. It also increases slightly when surface water is not available to the District (drier years).

Estimated Overdraft for 2006-2007-and 2007-2008

As stated earlier, the accepted figure for current average annual overdraft is 50,000 AFA for the District. It is greater in dry years and less in wet years and will increase in the future.

By definition, we divide the historical hydrology into five equal classifications; wet, above normal, below normal, dry, and critically dry. This means that overdraft would be greater during roughly 40% of the time, and less during 40% of the time. ---

We believe that average natural recharge of the Basin is approximately 1 foot per year, from rainfall, irrigation percolation, and streams.

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AR 12

This means that approximately 600,000 AFA are naturally recharged during an average year. Remember that on an average, approximately 800,000 AFA are currently taken from the Basin, causing a 200,000 AFA overdraft. Remember also, that the average water level decline is about 1 foot per year.

Assuming 2006-2007 (with its very hot summer) and apparently dry winter is a "below normal year", we can say that the overdraft will be greater than average, and probably about 100,000 acre-feet.

And, assuming 2007-2008 will be normal, we estimate the overdraft will be 50,000 acre-feet.

Surface Water Needed for 2006-2007

As indicated above, 50,000 acre-feet of surface water would be required annually to offset an average overdraft of that amount, but surface water is not currently available every year.

The only realistic way to deal with an average overdraft of 50,000 AFA, is to use 100,000 acre-feet or more during wet years because none is available in dry years.

The District is currently fighting to keep its current, temporary right to 20,000 AFA of Mokelumne River water which is available almost 70% of the time. The District must not only increase its use from the current 3,000 AFA to 20,000 AFA, but must also acquire another 80,000 AFA for use during wet years, just to cope with the overdraft caused by existing development. Another 175,000 AFA would be required during wet years to replace groundwater used by possible, future development.

A Catastrophe in the Making

North San Joaquin Water Conservation District and all other agencies within Eastern San Joaquin County must take immediate action to correct the overdraft. If nothing is done, the State will proceed with "adjudication" of the Basin.

Adjudication means limiting groundwater pumping to natural recharge. It would result in all pumpers being restricted to approximately 75% of what they pump today. It would also eliminate any future development that would need more than 75% of the current groundwater use for a specific location.

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