NORTH DAVIS MEADOWS WATER OPTIONS SURVEY

The North Davis Meadows Advisory Committee is interested in your feedback, regarding options for addressing the nitrates in our water supply. A poll was conducted in October of 2010 to determine the level of support for connecting to the city of Davis verses a well option. The results showed little support for a connection to the City of Davis. The advisory committee has been pursuing a well option. A powerpoint summary of updated information was presented at a community meeting on September 27, 2011. The powerpoint was distributed to the list serves for both North Davis Meadows neighborhoods. It also is available at the NDM CSA nitrate information website http://www.yolocounty.org/Index.aspx?page=701 under "Agendas 2011- September." It is recommended that you review the powerpoint prior to completing this survey.

In January of 2011, the county submitted the North Davis Meadows Area Safe Drinking Water State Revolving Fund Application for construction funding which was authorized by the Yolo County Board of Supervisors. This grant requested funds for two new 800 foot deep wells. The county has not received a decision from the State California Department of Public Health regarding the approval of this grant. It appears that funding most likely would come in the form of loans.

North Davis Meadows is under a compliance order from the California Department of Public Health to improve the water quality. We need to proceed with planning for improvements to our water supply, even though there has been no receipt of grant approval or denial.

Please read through all options and fill out the survey on the last page.

Options recommended by NDM Advisory water subcommittee:

1. **Drill two new deep wells**- $1,800,000 to $2,000,000 (Estimated bond assessment for 30 years=$1,800 to $2,000)

    - 700-900 foot wells, each capable of supporting peak demand (411gpm)
    - Estimate includes destroying existing wells (required) and cost of new storage tank.
    - New wells would be constructed of more durable quality materials than existing wells.
    - It is anticipated that annual operating costs would be similar to current costs.
    - Test wells would be drilled to verify both quality and quantity prior to drilling. Arsenic, hexavalent chromium, and manganese could be of concern. Nitrates are not of concern in the deep aquifer at this time.
    - City of Davis and UCD wells of similar depth and in close proximity to NDM are meeting current state water quality standards.
    - There are no guarantees that new wells will meet state water quality standards upon completion or in the future.

2. **Drill two small community wells for household use wells/replumb neighborhood for irrigation -**$2,300,000 to $2,500,000+ (Estimated bonding of $2,300 to $2,500 annually x 30 years)

    - Two deep aquifer wells of small diameter would be drilled to meet household water needs. These smaller wells are less expensive to drill. Existing wells would supply irrigation needs.
    - Requires replumbing of water system to divide irrigation water from household use water.
    - Use of new irrigation lines as opposed to new drinking water lines is being investigated. This could allow for tunneling for installation of pipes, instead of trenching. Use of the swale system for installing pipes is also being investigated. These options could provide considerable savings, in the cost of replumbing.
    - **Offers a more cost effective way to treat in home use water if required in the future.**
    - Assumes old wells can continue to supply irrigation and fire protection needs.
    - Potentially higher maintenance costs (four wells total)
    - Long term viability of Well # 1, could be of concern due to its age.
    - Additional engineering with associated costs would be needed. Major electrical upgrade might be necessary.
    - Plumbing configuration for some homes might make separating irrigation/ household water more costly.
    - Approval of this approach from California Department of Public Health/Yolo County Environmental Health necessary, as formula for computing redundancy using maximum day demand data would be different.

Options <u>not</u> recommended by water subcommittee

3. **One new deep well/rehabilitating existing well(s)-** $1,200,000 to $1,300,000 (Estimated bonding of $1,200 to $1,300 annually x 30 years)

    - Plan would be to drill one new well and fix both existing wells. If redundancy (411gpm) can be met by fixing well #2, only that well would be fixed. Engineer Larry Ernst is concerned about meeting redundancy with fixing well # 2 only.
    - Acceptable nitrate levels may not be achieved.
    - Life of rehabilitated wells is 10-15 years, according to engineer Larry Ernst.
    - Age of well # 1 is of concern, given the cost of rehabilitation. (Would only be rehabilitated if well #2 does not meet peak demand requirement of 411gpm)

- Hexavalent chromium level (21ppb) unlikely to meet a new state MCL (Recent Public Health Goal is .02ppb). A state MCL has not yet been set and it is unknown how long it will take for one to be set.

4. **Individual Wells**- $25,000 to $28,000 per home based on estimate by Eaton Drilling Company. **This could <u>not</u> be bonded, as it would be an individual project.**

    - **Some parcels may not have adequate set backs from leach fields (>100 feet), so the feasibility of this option is questionable.**
    - Option would transfer responsibility for quality and reliability from CSA to individual homeowners.
    - Quality of water would be a concern given the depth of the aquifers that would be used. Treatment would be an individual responsibility.
    - A generator would be necessary for power outages.
    - The need to maintain CSA well(s) for firefighting/communal landscaping would have to be investigated.

Other Issues

1. **Metering**- estimated cost $255,000 (estimated bonding of $250 annually for 30 years).

    - Water meters will be required by 2025 per current State legislation.
    - Potentially could result in lower water usage, reducing electrical use and the wear and tear on wells. Savings may be in part off set by management costs.

2. **Solar Power**- estimated to cost around $250,000 (Estimated bonding at $250 annually for 30 years)

    - Electricity for our wells currently costs about $26,000 annually
    - Return on investment for solar systems is typically 7 years.
    - System would require 6,000-8,000 ft2 of land