Water Workshop

SPECIAL MEETING OF THE DIXON CITY COUNCIL

April 28, 2022

CITY OF DIXON
600 EAST A STREET
COUNCIL CHAMBERS
6:30 P.M.

Questions Received in Response to Water Survey

1) Please define: The specific elements of the groundwater supply and production system, as described in the Water System Master Plan (WSMP) and Groundwater Sustainability Plan (GSP), that are at risk of overreaching state regulations.

The City of Dixon's groundwater supply and production system contain constituents of concern that are at risk of overreaching State regulations for drinking water. State drinking water regulations set Maximum Contaminate Levels (MCL) for contaminants of concern that ensure the City's water system is supplying safe, clean drinking water to City residents. The constituents of concern in the City's groundwater supply and production system that are at risk of overreaching state drinking water regulations include nitrates and chromium-6.

In summary, one of the City's current drinking water wells consistently has detections of nitrate levels that exceed 5 ppm (parts per million). State regulations for drinking water set the current MCL for nitrates at 10 ppm. If nitrates of 10 ppm or more are observed in a drinking water source well, treatment may be required, and the well may need to be redefined as a standby well. Additionally, all active drinking water source wells within the City of Dixon's municipal drinking water system have chromium-6 detections varying up to 21 ppb. All drinking water source wells are currently in compliance with the MCL of 50 ppb for total chromium.

However, the State has been in engaged in a process to reestablish a standalone MCL for chromium-6 for several years after a previous MCL for chromium-6 was overturned in a legal challenge. Recently, the State released a draft MCL for chromium-6 that will reestablish the 10 ppb limit that was originally overturned.

2) Please define: The specific State regulations or policies that conflict with the City's plans or ability to produce groundwater, or cause increased costs? Does the City consider the Sustainable Groundwater Management Act (SGMA) to be one of the "Expensive and cumbersome regulations"?

The Sustainable Groundwater Management Act (SGMA), passed in 2014, is the most recently adopted state regulation that makes producing groundwater and providing safe, clean drinking water costly for not just the City of Dixon but across the state. The regulatory landscape for public water suppliers is one of ever-increasing complexity as water continues to be a resource with a fluctuating supply, increasing scarcity, and increasing regulatory control including health and safety requirements.

In producing groundwater and providing drinking water, the City is required to comply with not just SGMA, but also the federal Clean Water Act, the Porter-Cologne Water Quality Control Act, and the California Safe Drinking Water Act, to name just a few of the regulatory structures that apply to the City's groundwater supply and production system.

As discussed in Question 1, the City is required to ensure that the drinking water it provides meets Maximum Contaminate Levels (MCL) for contaminants of concern. New MCLs can be added, as is the case with the forthcoming chromium 6 MCL, and existing MCLs can and do change. Where additions or changes to MCLs require water treatment activities or other measures to meet them, providing drinking water becomes more costly.

In complying with SGMA, the City along with several other local agencies overlying the same groundwater basin as the City are required to establish Groundwater Sustainability Agencies (GSAs) to develop a Groundwater Sustainability Plans (GSP) that are designed to address regional planning, establish best management practices, and provide regulatory oversight of the groundwater basin underlying each of the GSAs. The GSP for the groundwater basin underlying the City was recently completed in January 2022 and has been submitted to the State's Department of Water Resources (DWR) for review.

While the initial costs of complying with SGMA where to plan and draft of the GSP, the path forward of managing and regulating the use of groundwater will continue to increase the City's costs in producing groundwater and providing drinking water. Should there come a time that the City is restricted from producing groundwater, relying on alternative water sources, such as surface water, will likely increase the costs associated with City water service.

3) Please define: The manner of local (City?) control that should be implemented instead. How does “local control” differ from the existing General Plan and Water System Master Plan (WSMP)? Does the City have appropriate technical staff to manage groundwater production?

The City of Dixon began oversight of operations and maintenance of the City water system in 2018. Prior to 2018, the City water system was operated through a joint powers agreement between Solano Irrigation District and the City of Dixon and more recently through a third-party consultant.

City staff are qualified to manage the production of the groundwater and obtain the required certifications by the State to treat and distribute drinking water. The City’s water system and drinking water supply is operated and tested in conformance with the requirements under Title 22 of the California Code of Regulations related to drinking water.

The City is seeking to continue to operate the water system as a City owned public utility. To achieve that goal, the City is working to secure current and future funding that allows it to continue this service to its customers.

4) Inaccuracy: Note the mailer states that the City's water supply wells "must be constantly sampled." This is not accurate. In fact, the water quality reports issued by the City and Cal-Water provide laboratory analytical data for samples from 2020 and 2018. Does the City or Cal-Water indeed "sample constantly", and are the results available for public review?

Our active sources (deep wells) are sampled in accordance with the CCR (California regulations related to drinking water) Title 22, as well as our Water Supply Permit issued by the State Water Resource Control Board. Sampling requirements are as follows:

- Secondary standards: General mineral/general physical – once (1) every three (3) years
- Inorganic Chemicals – once (1) every three (3) years
- Nitrites – once (1) every three (3) years
- Asbestos – once (1) every nine (9) years
- Regulated Volatile organic compounds – once (1) every three (3) years
- Regulated Synthetic organic chemicals – once (1) every three (3) years
- Radiological – once (1) every nine (9) years
- Nitrates – Annually, with the exception of DW 52, it is monitored quarterly because it has exceeded the Action level (Half of the MCL of 10 ppm)

The Distribution system is monitored weekly for undesirable bacteriological constituents, annually for Disinfection by products, tri-annually for lead and copper and every nine (9) years for asbestos.

As the system has grown from a Small Water System to an Urban Water Purveyor, sampling durations for disinfection by products and lead and copper have increased.

Sampling results for Source water are posted here https://sdwis.waterboards.ca.gov/PDWW/JSP/WaterSystemDetail.jsp?tinwsys_is_number=4834&tinwsys_st_code=CA

They are also printed annually for our customers in the Consumer Confidence Report. At this time, the portal does not track distribution sampling, but the State is working to add that feature. As a public water system, we are 100 percent transparent with results, post as required, and are happy to discuss results, constituents, or requirements with our customers.

5) The Mailer: Please provide the back-story for this mailer, which is signed by Dixon's Division Fire Chief and Public Works Director. What City officer or department conceived the mailer, authorized the writing and production, and reviewed and approved the content before send-out? Was the content of the mailer reconciled with the General Plan, Water System Master Plan (WSMP) or Groundwater Sustainability Plan (GSP)?

The mailer was conceived, reviewed and approved in consultation with the offices of the City Manager, City Attorney, City Engineering, Fire Department and signatories with the goal of soliciting community feedback regarding Dixon's water system needs.

6) The mailer solicits citizens to provide feedback and comments. How will the City communicate the results of the feedback and ranking of the four priorities? Note that the first priority is the Sustainable Groundwater Management Act (SGMA) in a nutshell; the second and third priorities should be included already in the General Plan and Water System Master Plan (WSMP); and the fourth priority misrepresents the well-testing requirements. Note again, none of the listed priorities are discretionary.

The City is planning to continue to keep the community informed through its website and direct information to water customers. The SGMA, General Plan and the WSMP are available on the City website for public information and review. As noted above, well-testing is required on a regular basis.

7) The City needs to justify why the three wells need to be replaced, including providing the results of any downhole video inspections and engineering assessments. The City also needs to explain why well rehabilitation measures, such as swaging, lining, hydraulic and chemical treatment, pump modification, or the use of in-well sand separators cannot be used to extend the service life of the wells in a cost-effective manner. Properly designed and maintained municipal supply wells can be reasonably expected to last much longer than the three wells identified for replacement.

This is a multiple part answer. The three wells in question are identified as needing to be replaced based off an industry standard useful life, and original design features that were acceptable when constructed, but are long outdated.

In addition, Industrial well and Watson Ranch well are shallower than 1000' below grade surface (bgs). The average municipal production wells are in excess of 1000' bgs dependent upon production required to meet the municipal demand. The sanitary seals

are between 50-120’ in depth, while industry standards of sanitary seals ranges between 300-600’ in depth. The sanitary seal is crucial to water quality, minimizing the infiltration from shallow aquifers, which are more susceptible to contamination.

The suction inlets are relatively shallow (~200’ bgs) for the three wells, making them at risk of pumping dry during long periods of drought. The well casings are also aging (metal in dirt, with screens at designed depth).

In summary, oil lubed, shallow well columns, aging pumps and motors, surrounded by shallow sanitary seals are all outdated infrastructure that have exceeded generally accepted useful life. Full rehab may not always be necessary, and staff along with consultants have assessed the existing infrastructure and within the Updated Water System Master Plan has assessed the viability of rehabilitation vs. replacement using industry standards to determine the cost/benefit and has prepared a list of projects using value engineering to determine the best practices for the municipal water system considering longevity and associated costs.

In the 2021 WSMP update, there were alternatives constructed between the system assessment consultants and City staff to extend the life and spread out cost for rehab/replacement of the wells. Replacement gives the best return on investment, but is expensive. The Captial Improvement Program (CIP) alternatives show replacement of one, rehab of the other two on lower scales, and extending the timeline and funding extensive rehab, re-drill, or replacement, leaning on newer sources for more consistent production.

The biggest change over the last 5 years that allows these mitigation measures was the connection of the two independent pressure zones into one (with the development of Southwest) that allows our system a redundancy like never before. We can now rely on some of the “newer” wells (2003 and 2007) to support the older system (1977-1989) and we have future a new well in development set for 2023. These new improvement allow projects to be amortized at a different rate. Therefore, the update has assessed the proposed improvements that are in best interest of municipality and the public.

8) Testing is mandated on a daily basis by the State so why is this even a concern now?

The City is currently able to operate the water system per current state requirements. However, with everchanging state mandates meeting new requirements is an ongoing concern.

Since the City took over operation of the water system, it has been working to address the maintenance and operational needs of the aging infrastructure of the system. Additionally, as the state has increased its requirements, staff has taken every step necessary to meet those standards and requirements.

The water supply and distribution system is routinely monitored to identify when problems arise. As the system ages and the City experiences failures in well screens along with infiltration from contaminated shallow aquifers, an increase in detection of constituents of concern are observed. Industrial well is observing extensive sanding which causes the laboratory to no longer be able to run specific analysis. Various rehabilitation was completed on the well on multiple occasions and it was determined

the well reached its life span. Subsequently, it has been put on standby by the State for emergency use only. Staff has been diligently working to complete a design and feasibility study (with a cost analyst) to replace the well.

9) If reliable and adequate water supplies aren't available to "protect lives and property," why is the City allowing another 1000 homes to be built if they cannot guarantee that "lives and property" can be protected?

Water supply wells are available, and the City currently meets the State regulations. The City continues to operate and maintain the City's water system to ensure that it can provide clean, safe water to City residents. However, maintenance and the use of an aging system continues to be a challenge the City faces. To ensure that there is no impact on the City's ability to provide water, new developments in the City are required to provide new water supply.

Questions Received from Solano County Taxpayers Association December 11, 2018

Wells

1a) The City has stated that three of the City's supply wells require replacement at a total cost of approximately $8.8 million yet we are not aware of any detailed justification for their replacement being shared with ratepayers. The reported dates that the three wells were installed are 1977, 1978, and 1989. Properly designed and maintained municipal supply wells can be reasonably expected to last much longer than the three wells identified for replacement. The City needs to justify why the three wells need to be replaced, including providing the results of any downhole video inspections and engineering assessments. The City also needs to explain why well rehabilitation measures, such as swaging, lining, hydraulic and chemical treatment, pump modification, or the use of in-well sand separators cannot be used to extend the service life of the wells in a cost-effective manner.

Please see response to Question 7 above.

1b) Aside from our concerns about the justification for replacing the three wells, we are also very worried about potential problems related to the city's municipal well engineering and construction standards, especially given the relatively young age of the wells identified as a problem. Design and construction practices used for municipal wells in Dixon should be based on sound engineering and construction standards that reflect life-cycle cost analyses. Inferior quality wells can result in premature well failure, increased maintenance and rehabilitation costs, water quality problems, and excessive power consumption requirements. Well construction methods and materials have existed for decades that are consistent with a useful well life of up to 100 years.

The City of Dixon began full ownership of the water system in 2014. Therefore, the City did not own the water system when the initial wells were designed and constructed. Prior water system construction and design standards were not managed by the City. The City places high regard on meeting industry standards for design and construction and will continue to make design standards and construction methods a priority. We strive to meet all state regulations and industry standards.

Fairness

2) Dixon's municipal water supply system has grown in a largely incremental fashion as various development tracts were approved and constructed. We expect that the wells and water distribution systems built for each tract likely reflect materials and practices in use at that time. It seems that only limited information has been provided about this during the City's water rate workshops. We believe that there are likely major variations in water distribution system rehabilitation needs and costs between various tracts within the city's service area due to significant differences in their construction, materials used, and age. The city should evaluate the feasibility of establishing water system rehabilitation zones as a possible means of fairly and appropriately distributing system rehabilitation costs to ratepayers. We understand that there may be reasonable justifications for sharing some rehabilitation costs across the City's entire water system service area because of distribution system interconnections between tracts and other considerations. However, tract-based well and water distribution systems are not nearly as much of a shared use and benefit infrastructure system as streets, parks, and even the city's sewer treatment plant are.

If the City choses to ignore this issue then it should be prepared to answer questions from ratepayers in new areas of town served by newer water systems funded through their home purchases about why their water bills should increase drastically when other areas within the City's service area have benefitted economically in the past from deferred maintenance and rehabilitation. We expect that most new city residents in new or soon to be developed areas of Dixon have to contend with "full freight" property taxes and might not be willing or able to afford increased water rates that are the result past practices for older areas of the City's service area.

> In order to provide safe, clean, reliable drinking water all systems need to have redundancy. A single well does not just provide water to the surrounding neighborhood, it provides water to the entire system. This redundancy applies to all water infrastructure including water distribution mains, valves, pumps, motors and fire hydrants.
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> In the example noted above (e.g. districting service areas), this alternative potentially increases risk and cost to rate payers not only during an emergency event, but during construction of any large CIP project. This proposed method is not efficient and does not allow for amortization of costs. This proposed alternative does not meet current industry standards, state requirements and is not viable.

Other Sources of Funding

We are unsure as to whether or not the city has conducted a thorough and comprehensive effort to determine if federal or state funds, such as through Proposition 1 programs, are available to help offset water system rehabilitation costs. Ratepayers need to know whether or not this possibly has been fully explored in a concerted manner by the city.

> The City is consistently exploring all funding opportunities, including state and federal funding.