

# From the Desk of the Mayor....



July 25, 2023

Since the two council meetings that placed Lake Mitchell on hold, a number of questions have been asked with regard to the Lake project. Hopefully, this will address some of these Frequently Asked Questions.

## **Why are we draining the lake to remove the sediment, wasn't the intent to leave the lake with water in it and remove the sediment; and can a lake be drained?**

The original work by FYRA looked at two methods to remove in-lake sediment: Hydraulic dredging, with water in the lake, and mechanical dredging draining the lake. FYRA estimated the mechanical dredging to be less costly, \$10 million versus \$13 million to dredge with water remaining in the lake. As we began working with Barr Engineering, we anticipated doing the dredge work hydraulically. As design progressed, Barr determined the most cost-effective way for the project to be completed would be to draw down the Lake and mechanically dredge it. This also gives any contractors bidding the project a better opportunity to physically see where the work will be done and the conditions under which they will be working. When the drawdown is complete, the City will have the ability to draw the lake down by opening the valve. The city also purchased land West of Lake Mitchell to create a wetland ahead of the lake, and the drawdown is needed to maintain that wetland and associated sediment traps. This put a new light on draining Lake Mitchell and doing the mechanical dredge.

Yes, the lake can be drained, but water will remain in the original creek channel. This has been done on other lakes in South Dakota, probably most notably - Canyon Lake in West Rapid City. It was drained down to dredge and improve habitat. They did have some issues with keeping it drained, because they were attempting to remove the water with a large tube, and sizing was an issue because of the wet summer they had. Our drawdown will be sized to prevent issues with large rains upstream and should minimize any work stoppages that would be related to rainfall in the watershed.

## **Why is the cost of dredging \$25 million, when it was believed the cost would be \$10 million?**

The cost of mechanical dredging is not \$25 million, it is estimated at \$13 million. The \$25 million figure comes from all the work associated with the project including the drawdown (\$3,500,000); disposal site work (\$1,500,000); an additional sediment trap between the Kelley Wetland and the West end of Lake Mitchell (\$1,000,000); contractor mobilization (\$1,000,000); construction phase services (\$1,000,000); contingency (\$4,000,000); and the dredging (\$13,000,000).

## **Why take out a State Revolving Fund (SRF) loan for all the \$25 million cost?**

The City looked at including the entire cost of the project in the SRF loan to ensure adequate funds exist to do the work. There is some dedicated capitol money that could be used; however, we currently earn 5.5% interest on most of the money we have in the bank, and the interest rate we would be paying for the SRF loan would be 3.25%, thus netting us more income than expense. This can help with paying back the loan. It also allows us to hold on to some cash "just in case" something very unexpected were to occur, outside of the project.

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It should also be noted, this does not require the City to raise property taxes, or opt out of property taxes. The SRF application, and subsequent loan, are shown being paid for with money from the City's current operating budget and revenue.

### **If the cost of dredging Lake Mitchell is \$13 million, why is \$53 million dollars always referenced?**

The SRF loan was proposed at \$25 million, which was broken out above. The \$53 million figured mentioned numerous times would be the total cost after interest, and includes the anticipated annual cost for supplemental maintenance at \$500,000 per year over the 30 year period. These are conservative figures to ensure we are not being caught short in budgeting the project costs that could be necessary to properly complete the work.

Another way to look at this is if you buy a home for \$100,000 with a 7% loan over 30 years, you actually pay about \$240,000 for that home after 30 years. You do not advertise that the home was purchased for \$240,000, it is still considered a \$100,000, home. Here we are simply working with much higher figures versus the simplistic example of home buying.

Again, this would be paid for out of existing funds and revenue. No additional taxes are being generated to help pay off the SRF loan. No opt out for property taxes is being proposed. We are currently showing the payback with monies in the current operating budget which the City is already collecting, or has on hand.

### **Is an engineering firm the right professional to use for remediation of the lake, would it not make more sense to use a biologist?**

The engineering firms utilized to this point are licensed professionals in environmental engineering, and water quality engineering. As such they are required to obtain an engineering degree, pass two exams – an initial exam as they leave college showing they understand the fundamentals, and a second principles and practice exam which shows they have a proficiency and can be licensed in a jurisdiction, and finally they are required to have four years of experience under a licensed engineer. Likewise, the firm they work for must be licensed in the State in which they are working. Professional Engineers face consequences for their actions, and can be held accountable to the State Boards for what they design.

Biologists do not face the same type of scrutiny. In most of the cases presented to Council by outside entities, these biologists are vendors, selling a product, and not necessarily looking after the welfare of the public in general.

### **Why dredge the Lake, are there not other solutions to review?**

Yes, there were other potential solutions the city reviewed. Aeration was looked at by FYRA Engineering, and reviewed by Barr Engineering, and since the lake does not show signs of stratification, aeration was not viable according to both engineering firms. In fact, both firms recommended staying away from aeration as it could cause larger issues and liabilities in the watershed for the City if undesirable reactions

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occurred and found their way into the downstream watershed, which ultimately leads to the Gulf of Mexico. Inclusive with aeration, bio-dredging was considered and researched, as well. Bio-dredging uses enzymes, or other biological components, placed in the lake to work on the sediment, and consequently, the phosphorous. In 2021, a vendor met with City officials and toured the lake and watershed, the result was an intriguing discussion on an alternate method of treating Lake Mitchell. That company proposed using an enzyme in the lake, aeration to insure adequate oxygenation for the enzymes, yearly supplementation of the enzymes, and 10 acres of floating wetlands for ongoing maintenance and phosphorous removal. The rough cost presented at that time was \$11 million, compared to the dredge which had been estimated at \$10 million at that time. This solution also had cost for the energy to aerate the entire lake with sizeable equipment to move the aeration throughout the lake bottom, and a time component that was not desirable. The enzymes “digest” the sediment at a rate of between six inches and a foot a year, we have up to seven or eight feet of sediment, so this process looked like it would take between seven and 14 years to complete. Meaning we would still see algae blooms and health warnings over the course of those years. There exists a lot of variables and unknowns to work with this solution, and it appeared to have a higher cost at the time. Bio-dredging has no guarantee it will accomplish the desired end result, either.

Dredging will take two, maybe three, years and positively removes the phosphorous laden sediment, from the exposed areas. A much more desirable result from the effort put forth.

Regardless of which method were to be used, there will be additional costs associated with the method. We would still want to add a sediment trap just West of the lake; The drawdown would still be required for maintenance of the wetland upstream of the lake; State bidding laws would have to be complied with - meaning an entity would have to assemble bidding documents, help with bidding, procurement of equipment/materials, etc.; construction period services would still be necessary to oversee the work which was bid; a contingency would still be part of the project; and it may be necessary to include some cost for disposal site and/or miscellaneous costs for placing equipment related to some other method. It is not as simple as going to a single vendor and “buying off the shelf” for a cost of this magnitude.

### **Zebra mussels have been found in Lake Mitchell; won't they clean up the issues plaguing the lake?**

In short, no, zebra mussels will not clean up the issues with Lake Mitchell. If the infestation gets large enough, it may initially provide water clarity, but ultimately it is detrimental. The mussels feed on blue-green algae, and avoid the toxic cyanobacteria. This promotes more growth in the toxic algae, and filamentous algae, which lead to more harm to the lake.

The University of Minnesota has published some very good information on zebra mussels and their impact on lakes. ([www.MAISRC.umn.edu/zebramussels](http://www.MAISRC.umn.edu/zebramussels) : The SD GF&P also has good information on zebra mussels research)

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### **Can the City raise sales taxes 0.5% or TIF the land around the lake?**

No, we have sales tax as high as State Law will allow. We are also prevented from using Tax Increment Financing for the lake area, or applying any type of “special assessment” to property owners around the lake, by State Law. We are very limited in how this project can be financed, and repaid.

### **How long will this solution last and will the lake be self-sufficient in 20 years, or will this be necessary again?**

The proposed solution includes several sediment traps that can be maintained using the drawdown. Though it is difficult to know exactly what the timeframe is, we expect with proper maintenance, the lake should be able to have improved water quality for an extended period, likely longer than it has experienced to date.

### **Will there be manufactured wetlands on the shoreline of the lake where the City owns land?**

The City is working with Game, Fish and Parks on shore stabilization and fishing habitat. GF&P has shown interest in helping to rebuild fish habitat when the lake is drained, as well as, looking at stabilization of the shore, in areas around the lake. To what extent that happens depends somewhat on conditions once the water level is taken down.

### **Is the run-off from city streets that goes directly into Lake Mitchell filtered?**

The stormwater run-off from the streets directly into Lake Mitchell has been mitigated to the extent possible in an effort to minimize what goes directly into the lake. The City employees “best management practices” wherever possible. There is one small area West of the cemetery, and the West-end developments of Maui and Dailey Drives that get semi-filtered before going into the lake. These areas do move aboveground through grassy areas to help absorb any nutrients, and to remove sand, gravel, dirt, etc., before getting to the lake. We also use numerous collecting ponds with grass and vegetation, like the corner of Ohlman and 23<sup>rd</sup> Street, East of Twin City Fan, to help clean the water before moving it to the lake.

An interesting side note – of the 350,000 acres that contribute to the run-off into Lake Mitchell, the City of Mitchell accounts for only 1,700 acres of that, or roughly 0.5% of the area moving water into Lake Mitchell.