

IMPROVEMENTS TO COCHRANE LAKE: CREATING AN ULTIMATE STORMWATER SOLUTION AND PUBLIC RECREATIONAL AMENITY

FORWARD

Improvements to Cochrane Lake have been contemplated and considered by County administration for 30 years. Since the creation and implementation of the Cochrane Lake Conceptual Scheme in 1995, the only development activity to occur in the Cochrane Lake area is the Monterra community on the eastern shore of Cochrane Lake. The main factors for further development not moving forward are the issues pertaining to Cochrane Lake including the lake health in general (including water quality and odours), and flooding concerns due to the lack of any natural containment of Cochrane Lake. Macdonald Communities Limited (“MCL”) acquired the lands on the west and north shores of Cochrane Lake in 2014 and over the past 10 years has been working on implementable solutions to these problems. There is now a legitimate path and plan forward that will resolve all these long-standing legacy issues that have been frustrations for current residents in proximity to Cochrane Lake and with Rocky View County (the “County”) support the visions for growth outlined in the 2007 Cochrane North Area Structure Plan can finally be realized.

On January 7, 2025, County Council approved the Cochrane Lake Improvement Plan (“CLIP”) as supported by the third-party engineering review performed by ISL Engineering. As per the directives to administration from that Council hearing, the next step is to formally enter in a cost sharing arrangement with the current landowners in the area, MCL and Schickedanz West (“Schickedanz”), collectively known as the Contributing Landowners (“CLO”).

EXECUTIVE SUMMARY

MCL proposed the current CLIP to the County Governance Committee in January 2023. At that time, and consistently since, MCL has proposed that the CLO and County share in the costs of the CLIP on a 50/50 basis. The ISL Engineering Report includes an Opinion of Probable Cost for the CLIP of \$5,100,000. As such, MCL is formally requesting the County contribute a maximum amount of \$2,550,000 towards the CLIP.

The major benefits to the County for investing in the Cochrane Lake Improvement Plan are:

- Creating a long term stormwater solution to the 1,409 hectare catchment area which is forecasted to provide future housing to 10,000 residents as per the Cochrane North Area Structure Plan.
- Resolving ongoing flooding concerns, particularly along the south shore of Cochrane Lake where 21 of the 54 homes have been impacted by flooding.
- Adding nearly 2,000 additional customers to the Horse Creek Water Utility, which is made up of the 3 current proposed projects by MCL and Schickedanz. Based on current approved water rates, at full build out this would result in added revenues to the County of approximately \$3,000,000 annually.
- Turning Cochrane Lake from a liability and source of public frustration to a public recreational amenity that would provide value to existing and future residents.

Including their share of the proposed 50/50 split of the CLIP between the CLO and the County, the CLO will have invested a total of \$16,050,000 towards the Cochrane Lake area.

BACKGROUND

Improvements to Cochrane Lake have been contemplated and considered by County administration for 30 years. The Cochrane Lake Conceptual Scheme, approved in 1995, identifies that raising the lake elevation, having the ability to maintain a constant level, and introducing fresh water flows from the Bow River would be beneficial to the health of the lake, including limiting algae growth (which can produce cyanobacteria). The development proposal in that Conceptual Scheme contemplates increasing the water level from 1279.6m to 1281.0m (the current proposal is to raise the lake level to 1281.5m). Unfortunately, for some reason this concept was not followed through on when the Monterra community on the eastern shores of the lake was approved and constructed, and the Monterra community was and continues to be allowed to discharge unconstrained and untreated stormwater into Cochrane Lake.

FLOODING AND ODOURS FROM COCHRANE LAKE

Unrestrained storm flows from Monterra and the surrounding acreages, coupled with severe rain events, resulted in a portion of the 54 home hamlet on the south shore of the lake experiencing major flooding in 2013. According to residents of the hamlet, minor flooding issues have been encountered since approximately 2011 and have impacted nearly half (21 of the 54 residences) of the existing homeowners. In addition, several homes in the Monterra community have also reported damages from flood events. Residents from both communities have expressed ongoing concerns to the County regarding flood mitigation and lake water quality, and those same concerns, including numerous comments regarding very noticeable odours, have been echoed at open house events held by the development community over the past 5 years. Regarding water quality, the lake has consistently been flagged for health concerns culminating in events like in 2021 when Alberta Health Services issued a blue-green algae bloom advisory for Cochrane Lake warning residents to avoid all contact with the water for themselves and their pets.

HORSE CREEK WATER UTILITY

In 2019, MCL and Schickedanz engaged in initial discussions with the County regarding the County's proposed purchase of the Horse Creek Water Utility, presently referred to as the Cochrane Lake Community Water Service (the "Water Utility"). Ultimately, in 2021, the County decided to complete on the purchase of the Water Utility for \$13,000,000, and a main factor in doing so was that MCL and Schickedanz agreed to contribute funding for a combined total amount of \$8,500,000, or 65% of the purchase price.

At the January 7, 2025 Council meeting, Deloitte presented the County with a financial review of the County owned utility systems, including the Water Utility. Deloitte advised the County that the Water Utility is currently losing approximately \$670,000 annually. Administration will be looking at ways to run the Water Utility more efficiently, however, the only true way that the Water Utility will begin to break even will be to add additional users to the system. If the MCL and Schickedanz communities move forward, which is dependent on the approval and funding of the CLIP, at full build out the combined number of residents added to the Water Utility will increase revenues, based on the current approved County rates for the Water Utility, by approximately \$3,000,000 annually.

CREATING A PUBLIC RECREATIONAL SPACE

If the proposed storm solution is approved and constructed, and the County agrees to the proposed 50/50 split in funding, MCL will engage their engineers, consultants and contractors to continue the berm around the MCL lands. MCL will ensure that both berms will be designed and constructed to accommodate a future 3-meter-wide asphalt pathway. The future berms and pathways would link to the existing pathway on the eastern shore of Cochrane Lake adjacent to the Monterra community, with the ultimate goal of creating a public pathway that would encircle the entire shoreline of Cochrane Lake.

In addition, it is MCL's hope that once the CLIP is approved and implemented, the increase in lake depth and improvement to the lake water quality would allow for the use of the lake for public recreational non-motorized water activities. So, the County's investment and partnership in the CLIP would not only provide a long-term storm water solution and resolve historical flooding and odour concerns but also create an exciting and unique new public recreation space in the Cochrane Lake region.

WORKS COMPLETED TO DATE

MCL officially engaged the County in 2022 on the idea of finally working on the initial vision of the 1995 Conceptual Scheme to berm the lake and raise the lake levels. MCL has spent considerable time, effort, and funds towards making this initial vision a reality, including commissioning an updated Stormwater Master Drainage Plan, Hydraulic Assessment of Horse Creek, and an updated Lake Management Plan prepared by a biologist. These reports/studies provide specific actions to achieve a safe storm solution and healthy lake water.

Without going in depth into these various reports/studies, the main highlights of each are:

Stormwater Master Drainage Plan by Stormwater Solutions – Cochrane Lake can accept and accommodate stormwater from the catchment area if the Normal Water Level of the lake is increased (via berm construction) and if discharge to Horse Creek is increased from the currently approved 90 l/s to 150 l/s.

Hydraulic Assessment of Horse Creek by Northwest Hydraulics – Horse Creek can accept 150 l/s flows from Cochrane Lake and there are no concerns with the additional flows causing erosion or other issues to the creek bed.

Lake Management Plan by Spirogyra Scientific Consulting – Increasing the depth of Cochrane Lake, by creating a berm and raising the Normal Water Level and turning the lake water over through introducing new flows and discharging at 150 l/s, will provide benefits to the water quality of Cochrane Lake.

In January 2024, Council approved a Terms of Reference document outlining the proposal to improve Cochrane Lake and develop an overall stormwater solution for the entire catchment area. In addition, Council approved administration and MCL to cost share, on a 50/50 basis, on a third-party engineering peer review of the proposed plans and options. After a tendering process, ISL Engineering was selected to undertake the peer review and they completed their report in November

2024. The result of the ISL report was that MCL's proposed plan to build berms to deepen the lake (thus improving water quality) and provide flood mitigation to area residents was the best and most appropriate option going forward. The current opinion of probable cost from ISL, which includes the berm works and upgrading the existing discharge pump and intake, along with some Ultrasonic treatment to control algae growth is projected to be \$5.1M.

On January 7, 2025, Council approved Option #3 from the ISL Report as a viable path forward, subject to terms of funding and regulatory approvals.

ONGOING DATA GATHERING – ALBERTA ENVIRONMENT AND PROTECTED AREAS

In addition to the work performed by our various consultants over the past 5 years, MCL has also proactively engaged in gathering data on Horse Creek to support the CLIP, and to proactively prepare for the approval process with Alberta Environment and Protected Areas ("AEPA"). MCL, under the supervision of a registered biologist, installed a flow meter in Horse Creek to track water flows. The flow meter is installed in the spring and removed in the fall, with flow data downloaded on a bi-weekly basis. Simplistically, the year over year data shows that flows in Horse Creek generally decrease to negligible amounts by late summer. As such, the adding of additional water flows from Cochrane Lake may be of benefit to the existing fish and wildlife.

Also, twice per year (once in the spring and once in the fall) MCL has arranged to fly a drone over the length of Horse Creek from the discharge point from Cochrane Lake to the discharge point to the Bow River in order to provide a baseline of the current state of the creek bed and surrounding areas. To date no issues have been identified nor concerns noted.

If the CLIP and funding are approved by Council, MCL will share any and all data collected with AEPA and work with them to ensure all approvals are obtained, and that all the plans and works conform with all AEPA standards and recommendations.

ADDITIONAL WORKS OUTSIDE OF THIS PROJECT SCOPE

The \$5.1M CLIP project that will be contemplated by Council is only one piece of the overall lake improvement solution and focuses on the construction of a berm on the south shore of the lake to protect the existing 54 hamlet homes, as well as existing infrastructure upgrades. In order to create flood prevention, and ultimately a raised recreational pathway around the perimeter of the lake, MCL will need to construct further berming on their lands. Based on the quantities and estimates in ISL Engineering's Opinion of Probable Cost for the CLIP, MCL anticipates this additional berm work to cost approximately \$5M. These additional works would be done in conjunction with the CLIP, and all costs associated with these additional works would be 100% funded by MCL.

PATH FORWARD AND FUNDING SCENARIOS

Since 2022 MCL has been proceeding with the County under the working assumption of a 50/50 split between the CLO and the County of what was originally estimated to be a \$4.5M budget for the entire project. The 2025 ISL budget for the portion of the project including the necessary infrastructure upgrades and berming around public lands is \$5.1M.

County administration are considering presenting Council with an alternate proposal, limiting the County's contribution to 25% of the \$5.1M scope (\$1.275M). For reasons of both fairness (the CLO have committed to both the current increase in budget, and any potential future increases in budget) and availability of funds (the CLO are limited in the amounts they are able to pay) the CLO would not be able to move forward with the CLIP under a funding scenario other than the one proposed by the CLO, that being a fair 50/50 split.

As referenced in this memo, the existing communities of Monterra and the Hamlet currently occupy roughly half of the lake shore of Cochrane Lake. Neither of these two communities were required to implement any water quality improvements nor storm controls for Cochrane Lake. Both communities are established, and there is no current realistic mechanism to recoup the costs that should have been borne by those communities when they were developed. In addition, the existing acreages in the catchment area all continue to produce storm water flows that ultimately end up in Cochrane Lake, which should not be ignored and need to be accounted for in the overall planning. The lake water quality has been an ongoing public safety issue with concerns raised annually by local residents.

While the current OPC is showing \$5.1M, based on MCL's experience we expect this number may rise once we get into detailed design work and do further geotechnical investigation into the subsurface materials that the berm would be sitting on. To give the County confidence in committing to this plan, MCL is willing to commit to cover any cost overruns above a \$5.1M total project cost and would not come back to the County to ask for further funding beyond \$2.55M.

GRANT OPTIONS

County administration has advised that there may be potential to apply for grants that could cover up to 70% of the total project costs. MCL supports applying for all applicable grants and would offer up their own staff time to assist in these endeavors. That said, if work is to happen in 2025, detailed design and scheduling of contractors must begin immediately after the March 4, 2025 Council hearing. Time is of the essence. MCL believes the best approach for Council is to approve a budget adjustment for \$2.55M while pursuing any grant opportunities in parallel. The maximum potential spend of \$2.55M is still good value for the County and the public based on the public benefits provided and would only be improved upon with any grant funding received.

ADMINISTRATION ALTERNATE RECCOMENDATION

Administration has proposed a cost sharing scenario where the County would contribute a maximum of 25% of the project costs of the CLIP, an approach that is not supported by the CLO. Administration is of the opinion that the County should only invest 25% of the funding as they estimate the existing Monterra community contributes 22% of the generated stormwater for the approved servicing area for Cochrane Lake. Although currently the approved servicing area for the Horse Creek Utility does not cover the entire 1,409 hectare catchment area for Cochrane Lake, all stormwater from lands in the catchment area ultimately and undisputedly ends up in Cochrane Lake and should not be ignored. We strongly feel the right approach is to consider the entire catchment area in the funding discussions. In that scenario, the % of area for the CLO's is only 33%, but the CLO are prepared to contribute 50% in order to move this project forward. In addition, when considering the existing and proposed development around the actual shores of Cochrane Lake, roughly half of the area around Cochrane Lake has already been developed (Monterra and the 54 Hamlet Homes), not just 25%.

Given the large front end and ongoing investments made by the CLO towards the County purchase of the Water Utility, totaling \$8,500,000 of the \$13,000,000 purchase price, as well as the costs of the various studies and peer review of the CLIP, it is not feasible for the CLO to contribute 75% (approximately \$3.8M) of the required funding. As per the rationale presented in this memorandum, we believe a 50/50 split of the funding is fair to all parties involved. For further clarity, below is a high-level summary of the investments currently made and contemplated by the CLO towards the Cochrane Lake area, not including any costs of acquiring the lands, consultants, studies, reports, nor staff time.

Horse Creek Utility Purchase Contributions by CLO - \$8,500,000

Estimated costs of additional works to construct further berming on MCL Lands - \$5,000,000

50% funding of the CLIP - \$2,550,000

Total Investment by CLO = \$16,050,000

As per the above, the County can clearly see the large investments to this area by the CLO. If the County is not able to assist with funding in the amount of \$2,550,000, the CLO are not in a position to move forward by taking on a larger proportion of the funding of the CLIP and unfortunately this area will not be able to grow as per the approved ASP and Conceptual Schemes, and the Water Utility will continue to lose a significant amount of money annually, and the funds already paid towards the Water Utility will be very large sunk costs for both the County and the CLO.

CONCLUSION

MCL appreciates Council's consideration of the CLIP and the funding proposal being presented by the CLO. Including the proposed 50/50 split of the CLIP between the CLO and the County, the CLO will have invested a total of \$16,050,000 towards the Cochrane Lake area. A vote for the 25% funding scenario proposed by administration will effectively be a vote for the CLIP not to proceed, and once again the local residents will be looking solely to the County to provide a long-awaited solution to the ongoing issues with Cochrane Lake, and the County will continue to realize substantial operating losses associated with the Water Utility in perpetuity.