LELAND DAM AUTHORITY
Regular Meeting – Wednesday, December 13, 2023
Tentative minutes

Proceedings of the meeting are being recorded (audio and video). The video of the meeting can be found at the following link: http://leelanau.gov/meetingdetails.asp?MAId=2614

Call to Order:
Meeting called to Order by Leland Dam Authority Chairman Steve Christensen at 10: 06 a.m. Today's meeting is being held at the Government Center, 8527 E. Government Center Drive, Suttons Bay, Michigan.

Pledge of Allegiance:
The Pledge of Allegiance to the Flag of the United States of America was recited, followed by a moment of silence.

Roll Call:	Chairman, Steve Christensen (Drain Commissioner)	PRESENT
	Vice-Chairman, Garth Greenan (Road Commissioner)	PRESENT
	Member, Kama Ross (District #5 Commissioner)	PRESENT
	Member, Richard Thompson (Engineer Category)	PRESENT
	Member, Drew Warner (Riparian Category)	PRESENT

Maintenance Supervisor Gerald Culman II present as well as guests.

Approval of Agenda / Late Additions or Deletions:
MOTION BY GREENAN TO ACCEPT THE AGENDA AS PRESENTED. SECONDED BY ROSS.
Discussion – none.
AYES – 5 (Greenan, Ross, Thompson, Warner, Christensen)
NO – 0 **MOTION CARRIED.**

Public Comment (*3 minutes*):
The following individuals spoke in person:
John Popa

Chairman Christensen commented that Mr. Don Coppins is present today. They have met with Coppins recently and on occasion in the past as Coppins has a very high level of expertise designing hydraulic systems that are not dis-similar from the one at the Leland Dam. Christensen thanked Coppins for being present today.

Action Items –
Approval of Meeting Minutes – September 13, 2023, Regular Session:
MOTION BY ROSS TO APPROVE THE SEPTEMBER 13, 2023, REGULAR SESSION MEETING MINUTES AS PRESENTED. SECONDED BY THOMPSON.
Discussion – none.
AYES – 5 (Ross, Thompson, Warner, Christensen, Greenan)
NO – 0 **MOTION CARRIED.**

Review of Approved FY 2024 Leland Dam Authority Budget:
http://leelanau.gov/downloads/12132023_lda_rs_pkt_opt.pdf (page 2)

Authority members briefly reviewed the 2024 Adopted Budget handout from the meeting packet. No action taken.

Dam Adjustment Procedures/Operations Policy Manual – Update/Discussion:
Chairman Christensen stated that he had met again recently with Road Commissioner Greenan and Maintenance Director Jerry Culman to try and get more details down on paper of Dam adjustment procedures and operations for a policy manual.

Greenan outlined 5 different conditions that the Dam operates in:

1. Normal – Which would be less than 1" of rain per 24-hours, or 14-days without rainfall; operates in automatic.
2. Minor rain/snowfall event –Receiving 1" up to 3.2" of rainfall per 24 hours; sill operate in automatic mode.
3. Major rainfall event – Anything between a 10-year and 100-year event which would be 3.2" to 4.5" per 24-hours; manually draw down the level at the Dam and check lake levels at Narrows every 12-hours and continue to dump water until looking to return to automatic.
4. Greater than 4.5" per 24-hours –Manual draw down and did not make a determination how often to check, but looked if it would be worthwhile to remove the Stop Logs which would be challenging but would consider that as a major draw down by using the gates in the Dam.
5. Power outage –Did not address this item yet.

Christensen stated they are taking Culman's 40+ years of experience and trying to put this into a written format with the end result being a document to be used by the next Dam Operator.

Discussion ensued.

Manual Name:
MOTION BY ROSS THAT THE LELAND DAM AUTHORITY NAME THE MANUAL AS "THE LELAND DAM OPERATIONS PROCEDURE AND POLICY MANUAL". SECONDED BY THOMPSON.
Discussion – none.
AYES – 5 (Ross, Thompson, Warner, Christensen, Greenan)
NO – 0 **MOTION CARRIED.**

Potential Purchase of Replacement Hydraulic Cylinder:
Chairman Christensen said after the recent meeting with Don Coppins that he had shot Coppins a text to see if we could get the exact cylinder we have in the control room. Coppins made contact and we received a quote from Depatie.

The quote can be seen can be seen here:
https://leelanau.gov/downloads/12132023_lda_rs_pkt_opt.pdf (page 3)

Christensen opened up discussion about hydraulics in general as it pertains to the next agenda item also.

Hydraulic System Maintenance Update:
Mr. Don Coppins was present before Authority members for this topic.

Chairman Christensen began by saying that after their procedural meeting they had dove into the hydraulic end of it with Don Coppins. In essence the seals for the system are at the end of life or past expectancy. We have two cylinders operating together and with the proper pressurized system design, one could be doing the work. We have two doing the work one could do, but are able to do it at a little lower pressure. This system is designed to have both work in harmony and working for almost 20 years now. We have a successful design but at this point in time we need a general plan to update the seals, both inside the cylinders and inside the system. Christensen said it is good to know we can get the cylinder and perhaps we can start there.

Christensen explained that there are two motors and two pumps inside the system, in a hydraulic bath, and they suck up the oil and pressurize the system and move the cylinders. Those pumps are not manufactured anymore per Coppins. One of the more significant things about our system is that it is not designed to be maintained on the fly. Coppins explained to them that it is critical to function during maintenance and repairs. Our system is not made that way. If we have a failure the system shuts down until failure is fixed. Christensen said the question would be where do we go from here with regard to the hydraulic system.

Christensen said that Coppins has a very high expertise in schematics and had gone through basically how the design works. A schematic drawing can be seen at the following link: https://leelanau.gov/downloads/12132023_lda_rs_pkt_opt.pdf (pages 4-17)

Road Commissioner Greenan said in terms of the hydraulic system, there are some issues with the existing system he feels should be corrected but do you take a 20-yearold system and try to update that and continue to use that system. There is a limited life on equipment no matter what it is. If we have to pull one pump or motor out first then we have to find a replacement and likely take hydraulic system out of service for a period of time while repairs are made and there is a period we cannot adjust the dam. Greenan said he would like to see actual replacement of hydraulic system with all seals, new pumps and motors that are serviceable for hopefully the next 20-years. Greenan said he has designed pump systems for water/sewer in the past and typically those would have two pumps and either is able to operate the total system, so if one goes out, you operate the other pump. It appears that may be a more reliable way to have our system designed.

Discussion between Authority members and Coppins continued.

MOTION BY GREENAN THAT THE LELAND DAM AUTHORITY TO GO OUT FOR BIDS FOR A PARKER 3H HEAVEY DUTY REPLACEMENT CYLINDER, 7.00" BORE, 58" STROKE (1" STOP TUBE), #20 SAE PORTS. SECONDED BY ROSS.
Discussion – Brief discussion about hose replacement and seal kits that can fit into maintenance cost.

AYES – 5 (Greenan, Ross, Thompson, Warner, Christensen)
NO – 0 **MOTION CARRIED.**

Coppins stated that traditionally you need to develop the spec to give to the people to do the design but it is normal in the hydraulic system industry for them to make a schematic to present with their proposal as they are absorbing the price of the design in hopes of you making the order.

Commissioner Ross asked Coppins if he had a ball park figure for a new system, and he said perhaps $40,000.00 or maybe less than the cost of a new car. Coppins said he would recommend to be sure to detail out the changes you want to make the system more reliable and easier to maintain, and also suggested looking at adding a secondary containment for oil.

Additional discussion continued.

Leland Dam Walkway:
https://leelanau.gov/downloads/12132023_lda_rs_pkt_opt.pdf (pages 18-28)

Christensen reviewed the packet information from Spicer Group, Inc. where they were able to snap some photos and do measurements that facilitated an analysis of the walkway. Daniel Zeddies, P.E. reports that the bridge is in good condition, and has plenty of capacity in the walkway. Beam sizes will be determined at next inspection.

Discussion regarding the items of signage at the walkway, board replacement, and clarification needed regarding the safety railing were all touched on briefly.

Lake Leelanau Lake Levels – Sensor Calibration:
https://leelanau.gov/downloads/12132023_lda_rs_pkt_opt.pdf (page 29)

Rick Thompson has been in contact with Dave Fisher over the past few months and Fisher is the electronics guru for the lake level sensors. The data collected with some of the readings done over the last few months, staff gauge readings in feet and electronic gauge readings as well.

Thompson's handout can be seen here:
https://leelanau.gov/downloads/sensor_calibration12132023_r_thompson.pdf

The readings are in both feet and inches that show the variations between the staff gauge readings and the electronic sensor. Page 3 is for the Dam, and the average difference was about 8/10 of an inch. Page 4 is same information for South Lake, that data shows about 3.67" delta between the sensor and staff gauge. A couple of data points did not get good readings even though Thompson said he was only doing the readings in calm weather.

Dave Fisher used a quadratic formula to redraw the graphs to adjust the electronic sensors to match the staff gauges. So, at South Lake and Dam he adjusted about 8/10" at the Dam and about 3.6" at South Lake. That shows for now we are relatively consistent between the staff and electronic gauges. Fisher's recommendation is to collect data throughout the year and include the Narrows at some point to verify the data is accurate based on the surveys of the

staff gauges. Fisher would like to add a few more staff gauges and sensors; but at this point, Thompson said he personally doesn't feel it is necessary.

Thompson said this is just the calibration by Fisher, it is not in the Lake Leelanau graphs that are available through the lake association. Fisher can add these data points to that if we want him to.

Commissioner Ross said she is in favor of more information and asked if there would need a lot of explanation on the website, and if Thompson was going to continue doing these readings himself.

Thompson said he would like to get a few more volunteers to help with gathering the data. Jim Wysor of the Lake Leelanau Lake Association was in the audience and stated he was sure there would be no trouble getting volunteers from the Lake Association to help do that.

Consensus to have the staff gauge data points added to the Lake Leelanau charts/graphs.

Brief additional discussion ensued regarding possibly adding another staff gauge at North Lake at the mouth of the river at some point.

Christensen said as far as lake levels they had been holding just below midpoint of court order at the Dam. They are at winter level and will be there for a while.

Chairman Christensen reminded members that the next scheduled meeting is on the calendar for January 10, 2024 at 10:00 a.m. There will be an Organizational Session followed by a Regular meeting and they will be setting the 2024 meeting dates at the Organizational Session. Christensen asked members to think about if scheduling additional regular meetings would be beneficial, and they could always be cancelled if not needed.

Update on Sensor Calibrations:
This update was covered with the above agenda item.

Public Comment (*5 minutes*):
None.

Authority Member Comment:
None.

Adjournment:
Move to adjourn by Ross.

Chairman Christensen adjourned the meeting at 12:09 p.m.

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Steve Christensen, Drain Commissioner Chairman, Leland Dam Authority	Alison Middleton, Administrative Deputy Clerk for Michelle L. Crocker, Leelanau County Clerk