Red Lake Watershed District
Pine Lake Area Project Work Team
Meeting Notes
May 15, 2015

The meeting was convened by Myron Jesme, Administrator, Red Lake Watershed District (RLWD) at 9:00 a.m. The following Project Team members (or their alternates) were present:

Myron Jesme (RLWD)
Nate Dalager (HDR)
Cory Gieseke (HDR)
Chad Severts (BWSR)
Matt Fischer (BWSR
Larry Puchalski (Corps)
David P Rave (DNR)
Gene Tiedemann (RLWD)
Terry Sorenson (Landowner)
John A. Nelson (County Commissioner)
Larry Peterson (Pine Lake Twp/Sportsman's Club)
Les Roos (Landowner)
Ken Schmalz (Landowner)
Mark Larson (Landowner)
Terry Vonasek (Landowner)

Myron Jesme and Nate Dalager gave a recap of the last Project Team Meeting and review of the meeting notes.

Dalager stated that he will present updated information on the Pine Lake outlet structure and 7 potential sites and will present the same information to the RLWD Board in the near future. Dalager suggested scheduling a field visit with the permitting agencies.

Dalager gave an overview of the hydraulic information on the Pine Lake Outlet Structure, stating that his office looked at the existing structure and three alternatives. All structures they are proposing, would be gate operated with a walkway structure for accessibility.

SUMMER OPERATING PLAN

Existing Structure (Approximate)
- Initial Stoplog Crest: 1283.50
- Remove all Stoplogs: 1284.00 -1284.30
  - Varies by event intensity, modeled as 1284.20
- Reinsert all Stoplogs: ~1283.75
  - Varies by year

Proposed Structure (Preliminary)
- Stoplog Crest: 1284.00
- Open Gate: 1284.20
- Close Gate & Insert Stoplogs: 1284.10

SPRING/RUNOFF OPERATING PLAN

Existing Structure (Approximate)
- Initial Stoplog Crest: 1282.50
- Remove all Stoplogs: 1283.80 - 1284.20
  - Varies by event intensity, modeled as 1284.20
- Reinsert all Stoplogs: ~1283.75

Proposed Structure (Preliminary)
- Initial Stoplog Crest: 1282.50
- Fully Open Gate: 1283.50
- Close Gate & Insert Stoplogs: 1284.10
  - Leave slight opening in gate to provide constant low-flow to Lost River

Dalager stated that the goal of the proposed changes to the structure should include no negative effect to existing downstream conditions even though lake elevations could be raised by up to 6 inches. There is limited availability to claim Flood Damage Reduction (FDR) credit. 100-year maximum lake elevations for all alternatives are pretty similar. Summer elevation is where we would see some differences. The current summer lake elevation normal pool is 1283.5, with the new proposed elevation being 1284 or thereabouts, which is a ~6" increase. District staff would open the gates at 1284.2 after a significant runoff event Dalager stated that the lake level could vary one way or another in extreme conditions but the goal has always been to avoid any increase in flooding along the lakeshore or downstream.

Dalager stated that if we simply replace the outlet with the proposed structure without upstream retention, it could result in about a 10% increase in the discharge (outflows) from Pine Lake during a 100-year runoff event if the permanent level of the lake is raised a full 6". Because we would theoretically have given up the storage and if the lake rises there will be larger volume of water that will go downstream in a shorter period of time. There is some FDR value in the spring due to the Fall drawdown, but then a potential negative in the summer based on maintaining higher lake levels in the summer. The preliminary modeling estimates the amount of lake level raise that will not increase associated flooding is 4" instead of 6".

Discussion was held on high water elevations increasing erosion along the lakeshore. In general, the lake fluctuates now, most landowners have put in shoreline stabilization practices. Les Roos stated that he does not feel the landowners would experience anything different in regard to erosion due to a slightly higher elevation. Roos stated that they would update the landowners over a Memorial Day weekend meeting that is planned for all cabin owners.

Dalager stated the following benefits of a new outlet: operation flexibility and better access, higher summer/fall lake level, discharges lower Dissolved Oxygen (DO) water from the lower water column, through the gate.

Terry Vonasek stated that there several lake lots being developed by the outlet structure. He also stated that it is disheartening to see when lake levels are low and we see water being released by the dam under the existing configuration.

Dalager stated that after he completed the retention sites evaluation, he felt the Project Team would see the value of doing both the retention sites and outlet structure

Mark Larson stated that the discussion has been about the Pine Lake landowners and discharge on the downstream side, he asked about on the reverse side and how any type of structure near his property would affect him. Dalager stated that if we are going to retain water on the landscape as you see it now, we are going to affect landowners, but also knowing that the landowners will be compensated for it with the landowner's permission. Landowner support is needed. Dalager stated that retention is for the greater good of the watershed and the goals benefitting all landowners and the environment downstream.

Dalager stated that with the 7 sites that were evaluated, 10 different criteria was used on each site to determine sites that were more feasible. Several of the criteria were: miles of stream impact,

miles of road impact, volume of embankment required, maximum embankment high, acres of wetland impacted, acre-feet of storage, inches of runoff captures, homes or structures impacted, number of landowners impacted and flooded footprint acres. All these factor were considered in the evaluation of the 7 sites. The sites were then ranked on all the categories. A ranking of 1 is more favorable and ranking of 7 is less favorable with respect to a particular criteria. Dalager stated that this gives us a guidance of how they came up with these sites.

Rating Multiplier		x 1		x 1		x 1.5		x 1		x 1.5		x 1.5		x 1		x 1		x 1		x 1			
Site	Drainage Area Sq. Miles	Miles of Stream	RANK	Miles of Roads	RANK	Volume of Embankment (CY)	RANK	Maximum Embankment Height (ft)	RANK	Acres of Wetlands Impacted	RANK	AC-FT Storage	RANK	Inches of Runoff Captured	RANK	Homes / Barns	RANK	Number of Landowners affected	RANK	Flooded Footprint acres	RANK	SUM	RANK
A	24.1	5.4	5	2.0	7	235400	4	17.0	2	194	3	4075	4	3.2	7	6	7	13	6	482	4	50.0	7
B	23.8	5.2	4	1.5	6	343500	5	21.8	3	209	5	4900	3	3.9	5	0	1	11	4	500	5	43.0	4
C	21.4	6.5	6	1.5	5	674700	7	32.5	5	206	4	7000	2	6.1	2	2	5	11	4	530	6	47.5	5
C-1	21.2	7.6	7	0.6	4	570800	6	35.1	7	326	6	7001	1	6.2	1	0	1	16	7	594	7	48.0	6
D	18.5	5.0	3	0.1	3	212700	3	32.1	4	93	2	3220	5	3.3	6	0	1	8	1	265	2	31.5	2
E	9.6	3.1	2	0.0	1	54600	2	34.6	6	74	1	3032	6	5.9	4	2	5	8	1	204	1	30.0	1
F	6.0	1.6	1	0.0	1	2600	1	9.5	1	359	7	1901	7	5.9	3	0	1	8	1	447	3	32.5	3

- 7 sites were broken up and ranked 1-7 based on 10 different criteria. A ranking of 1 is more favorable and a ranking of 7 is less favorable with respect to a particular criterion.
- The criteria that were deemed to be more influential with respect to site feasibility have a multiplier applied to that criterion.
- The ranking values are summed for each of the sites with the lowest score representing a more feasible site based upon this relative scale approach.

Jesme discussed Star Value that is used by the RRWMB and how the various categories would affect the ranking.

Discussion was held on features of various sites. Site D would be a sizeable structure. Gene Tiedemann asked about impacting of wetlands and whether we would destroy them or could we mitigate them. Larry Puchalski stated that they would evaluate each site based on the proposal. Discussion was held in impacting of a wetland does not necessarily mean it's a negative impact. Each site will have a pool elevation to determine what landowners would be affected. Eight landowners would be impacted on this site. Larson stated that one of the areas is a designated trout stream-Nessett Creek.

Jesme stated that flowage easements would be purchased to an identified elevation and a dollar amount would be negotiated with the landowners. There are various sources of farm program funding available that could also be used.

Vonasek stated that while everything that is being considered, are there no impacts being considered for structures along Pine Lake and how they have been impacted? Vonasek suggested that we could work with the cabin owners to hold more water ourselves since we would do the same on the retention part of the project upstream of Pine Lake. Dalager stated that at the 1284.5 elevation, there are a lot of cabin owners affected now. John Nelson asked if fill would need to be brought in for the cabin owners currently impacted. Discussion was held on zoning ordinances. Nelson will contact the Clearwater County Zoning Officer.

Dalager stated that site E would consist of 204 acres, 3,031 ac.ft. of storage, 8 landowners would be affected, but no buildings would be in the actual footprint.

Site F-Little Pine Lake WMA would affect some private landowners.

Dalager briefly reviewed Sites A-C1 and Site D at the request of Terry Sorenson.

Dalager displayed a graph for Sites D, E and F and how they would affect Pine Lake.

Discussion was held on Operating Plan. Dalager stated that he would propose a similar operating plan with or without retention for the Pine Lake outlet. The retention itself would have its own operating plan, but specific to Pine Lake, there would be a fall draw down and store water in the spring and ~1284 summer elevation. At the outlet they are the same results. Pine Lake flooding that is seen now would be greatly reduced if an upstream retention was in place, it would not necessarily be eliminated.

Larson asked if the District is thinking of building one structure or multiple structures. Jesme stated that although more storage is better from a FDR perspective, the District and PWT would have to look at each site to measure what FDR goals could be attained. Dave Rave stated that there is trade-offs for all of these sites.

Larry Peterson discussed his concern about aeration on Pine Lake, and fish and wildlife. Rave discussed emergent vegetation in regards to fish and waterfowl.

Dalager displayed a map of Pine Lake showing the area that is highly accessible to flooding due to the low flat topography. Discussion was held on the lake level and what it can mean for Pine Lake. Dalager stated that the water quality of Pine Lake is good, minus the issues with fish kill and occasional low lakes levels. Parameters that are measured for the most part do not exceed the standards. Dissolved oxygen goes below in the winter, ecoli and phosphorus is good on occasion it has exceeded. Turbidity on the lake is low. As it relates to winter kill raising the lake level by 6" will have no impact on winter kill. Peterson asked if we would still consider putting out pipes or dredge the channel. Dalager stated that the channel would be cleaned, but no pipes. Draw the dead water off the bottom to help the dissolved oxygen levels versus allowing top water which usually is your best water in terms of DO. Peterson discussed his concern with upstream vegetation coming into Pine Lake and eating up the dissolved oxygen. John Nelson discussed vegetation and the possibility of installing rocks to help with oxygenation. Dalager stated that a DNR permit would be required to do that, but Dalager will take this into consideration. Rave stated that he will discuss this issue with the MnDNR-Fisheries about cleaning the channel to allow better water in to the lake.

Dalager reviewed the problem/issue/opportunity identification: stream flows, trout streams, lake level fluctuation (primary) water quality-low DO-fish kills, flooding (FDR), loss of property/impacts to property, Pine Lake waterfowl value, drained wetlands, farm bill programs-easement programs, shallow inlet channel upstream of dam.

Jesme discussed several issues on the agenda that we have not covered (TEP, EAW, etc.).

What is our next step? Jesme stated that we need to get the TEP committee out to look at some of these sites. Jesme stated that he would like to see several landowners attend the TEP panel meeting/tour.

Dalager asked Larry Puchalski how do we come up with a purpose and need? Puchalski stated that the problem needs to be identified and how to solve it, what would be your solution to it. The first and third concurrence are pretty straight forward the 3rd one is more detailed which is the selective alternative. We need to come up with least environmentally damaging and sort thru the different alternatives and decide to concur or not. Matt Fischer stated to reduce the concurrence we do want to keep the Pine Lake and 20% FDR projects separate? Puchalski stated that the questions shifts to why did you pick this area to work in?

Discussion was held on early, middle and late water. The ultimate goal is to reduce the water levels to the Red River of the North, given the fact that we do look at local benefits. Crookston is used as a gage to get our 20% flow reduction to the Red River of the North, we have to reduce our flow peaks at Crookston by 35%. Puchalski stated this this is new to the Corps also, and they are working their way thru this process. Jesme stated that the Purpose and Need Statement came up in 2007 when the District built the Brandt and Euclid East Impoundments. The District had 5-6 locations and by the time the second meeting came around we narrowed it down to three sites and then it went down to two.

Nate asked if the following four categories items capture what we are talking about in terms of project goals: lake level fluctuations, lake water quality-low DO, fish kills, flooding (FDR). Roos asked if these should be ranked. Jesme stated that at this point, any project developed should have FDR first. If it is determined that our goals can't address FDR objectives, project we won't get FDR project acceleration grants. Vonasek felt we could combine DO and fish kills, and that POOPLA are helping to contribute money towards aeration.

Dalager stated that as we move forward these goals will be tailored around flooding and water quality and we will address fish kills.

Jesme stated that we will be in touch with the TEP panel to organize a tour of the area.