

AGENDA

2015 April 9

Regular Meeting: 6 pm
Lincoln City, Council Chambers
801 SW Hwy 101, 3rd Floor



Devils Lake Water Improvement District

Post Office Box 974, Lincoln City, Oregon 97367
Phone: (541) 994-5330 Fax: (541) 994-6040
www.DLWID.org

Quick Look:

- Public Hearing

- Dam Replacement and Water Rights

- Board Deliberations

I. Roll Call

II. Consent Agenda

- a. Minutes of the Previous Meetings
- b. Financial Report

III. Resolution: Registered Office and Registered Agent

IV. Comments from Citizens Present on Agenda/Non-Agenda Items:

This is an opportunity for members of the audience to bring to the District's attention any item not listed on the agenda for public hearing. Comments are limited to five (5) minutes per citizen and the Board of Directors may use the light system. Speakers may not yield their times to others, and as a general rule this is not a time for exchange of questions. At the conclusion of this agenda item, a board member may discuss or raise questions regarding an item presented by a citizen. The Chair has the authority to reduce the time allowed for comment in accordance with the number of persons present and signed up to speak.

V. Special Order of Business

- a. Public Hearing: The Devils Lake Water Improvement District is holding a Public Hearing as part of its April 9, 2015 meeting. The purpose of the public hearing is for the board to take public input on the potential replacement of the impoundment structure otherwise known as the dam and the overall managed use and/or continuance of the District's Water Right Certificate 69267, Permit to Appropriate the Public Waters 52672 (also identified as S52672), Permit to Store the Public Waters R-11968, Water Right Certificate 89980, and all permits or certificates that may originate from Devils Lake Water Improvement District water right applications identified by Oregon Water Resources Department as S71813, R74720, or R71703.
 - i. Opening of the Public Hearing, Introduction & Hearing Procedures
 - ii. Staff Report & Presentation
 - iii. Questions & Comments from Board
 - iv. Public Comment Period: Please be concise and courteous, and limit comments to time outlined by Chair.
 - v. Close of the Public Hearing
- a. Board Deliberations: Potential replacement of the impoundment structure otherwise known as the dam and the overall managed use and/or continuance of the District's Water Right Certificate 69267, Permit to Appropriate the Public Waters 52672 (also identified as S52672), Permit to Store the Public Waters R-11968, Water Right Certificate 89980, and all permits or certificates that may originate from Devils Lake Water Improvement District water right applications identified by Oregon Water Resources Department as S71813, R74720, or R71703.

(Agenda Support Item A)

VI. Unfinished Business

- a. The Devils Lake Plan
 - i. Septic / Sewer
 - ii. Save our Shoreline
 - iii. Vegetation Management
- b. Communications Report
- c. Safety Report
- d. MidCoast TMDL

Devils Lake Water Improvement District
Staff Reports: 2015-04-09

- e. East Devils Lake Road
- f. Harmful Algal Blooms

VII. New Business

(Agenda Support Item B)

VIII. Non-agenda Items

IX. Additional Comments from Citizens Present on Non-Agenda Items: *This is an opportunity for members of the audience to bring to the District's attention any item not listed on the agenda for board discussion. Comments are limited to five (5) minutes per citizen, and the Board of Directors may use the light system. Speakers may not yield their times to others, and as a general rule this is not a time for exchange of questions. At the conclusion of this agenda item, a board member may discuss or raise questions regarding an item presented by a citizen. The Chair has the authority to reduce the time allowed for comment in accordance with the number of persons present and signed up to speak.*

X. Board Comments & Announcement

XI. Adjournment

Meetings of DLWID are handicapped accessible under the ADA.

If special accommodations are needed, please contact the District Office at (541) 994-5330 48 hours prior to the meeting.

**Staff Reports 2015-04-09
Robertson**

Consent Agenda:

- Minutes of the Previous Meeting
- Financial Report

Resolution 2015-02

Registered Office and Registered Agent

Whereas the Devils Lake Water Improvement District is a municipal corporation and shall provide the Oregon Secretary of State notice of designations of its Registered Office and Registered Agent, and whereas the District provides to its Lake Manager duties and responsibilities which often require administrative actions,

Be it Resolved that the Board of Directors of the Devils Lake Water Improvement District hereby recognizes its Registered Office as the following:

Physical Address:

Devils Lake Water Improvement District
3788 SE High School Drive
Lincoln City, Oregon 97367

Mailing Address:

Devils Lake Water Improvement District
PO Box 974
Lincoln City, Oregon 97367

Further Be it Resolved that the Board of Directors of the Devils Lake Water Improvement District recognizes its Lake Manager, Paul Robertson, as its Registered Agent, and he is hereby authorized to serve as and sign as the authorized agent for the District on matters delegated to him through his position as Lake Manager and on any other matters authorized by the Board of Directors.

Dated this 8th day of April 2015.

Brian Green, Board Chair

Kent Norris, Secretary/Treasurer

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Staff Report:

The impoundment structure and the water rights the District possess have been a topic of considerable deliberation and have been an agenda item periodically of the District in one form or another since at least 2007 as shown. The interest in the topic of water impoundment in the last decade at least began shortly after the repair of the leaky impoundment structure in March 2006 when the District for the first time in many years was actually holding water securely throughout the impoundment period. Upon subsequent investigation by Oregon Water Resources - triggered by a complaint from the Oregon Parks and Recreation Department (the campground) - it was determined that the District while seemingly working within its permits and certificate, was in fact violating the storage right. A new calculation was conducted and the maximum impoundment height was set at 9.53' MSL, reflective of the 1360 Acre Feet maximum impoundment volume.

In 2010, with interest in the assessing whether the impoundment was detrimental to the District's investment in shoreline revegetation improvements through its SOS program, the District had a Shoreline Erosion Study done (report linked below). In 2012, following two public hearings on the lake level and the water rights (see links below), the District set a policy to impound only in the summer (target day of June 15th, but no earlier than June 1st, and then only if the lake level was less than 9.0') through to October 15th at the latest, and to a maximum level of 9.0'.

Recently in 2014 when the lake suffered a major late winter - early spring Harmful Algal Bloom significant concern was raised by the public that the lake was not allowed to flush as fully as possibly because of the Water Impoundment Structure, negatively impacting water quality. Others postulated that not raising the lake level to its full extent the previous summer caused the wintertime bloom. Overall significant concerns were brought forth generating a desire to take direct actions to combat Harmful Algal Blooms, which the District has proceeded on.

On aspect of understanding that work was to hold a workshop where a Professional Hydrologist and Certified Lake Manager, Joe Eilers of Max Depth Aquatics was asked to present information on Harmful Algal Blooms and Devils Lake's water quality. Scientific fact as highlighted by Mr. Eilers in HABS workshop last year (See 2014-04-19 below) would support that the negative effects associated with Harmful Algal Blooms are aggravated by impounding additional water as a reservoir. The impoundment increase the residence time of the lake (the time the same water stays in the lake which is growing blue-green algae) and reduces the flushing of the lake. This then helped bring back into question the impacts of District's water impoundment structure and the management and continued use of the water rights.

Later in 2014, the topic of potentially replacing the dam including the cement sub-base with a truly temporary, summertime only structure has been raised. The District has been tasked with developing an understanding if such a structure is feasible and may be permitted. Additionally, in determining the best course of action forward concerning the management of the lake level and/or continued use of the District's water rights, the District also seeks input on and has provided on the agenda an opportunity for subsequent board deliberations on the overall managed use and/or continuance of the District's water rights. It is these combined objectives then that this Public Hearing is aimed.

When this Public Hearing was agreed upon and then first noticed and for the nearly preceding two decades the District had one water right certificate and two water right permits, which coincidentally and to significant surprise changed when Oregon Water Resources Department (OWRD) signed and sent us a Notice of Certificate Issuance on March 20, 2015 for a newly perfected water right from the District's 1991 application. This however is only a third step in the existing Application R-71703 which already led to the issuance of the Permit R-11968 on October 10, 1996, which the new certificate is based on. No change in the methodology, timing, or any way the implementation of the water impoundment occurred or could occur as a result of this new certificate, it was just the delayed paperwork trail from OWRD subsequent to the District's filing of a Claim of Beneficial Use from 2000 which was required as part of the application to permit to certificate process. This then triggered the District to amend is previous notice to include the newly received certificate,

As there also was identified a duplicated numbering/naming system for one of the District's water permits on OWRD online water right search, the District has as stated issued and published online and in the local paper, through its listserv, and on its agenda for this meeting an amended Public Notice. This public notice is substantially similar in nature to the original. The amended public notice includes the additional water certificate received, a reference to the duplicate permit name on the Oregon Water Resources Department website, and includes reference to all the applications the District has on file with the Department, should additional paperwork flow from OWRD relevant to these proceedings.

Notably copies of the previously existing permits and certificate have been on the District's website since at least 2012, and the new certificate #89980 was similarly added upon its availability. OWRD on March 31, 2015 issued its weekly Public Notice of Water Use Reports which included notification of the Devils Lake Water Improvement District Certificate #89980. This though again is only a perfected water certificate and does not change the method of impoundment, constraints to impoundment, or change the amount of impoundment within the water rights as the certificate basically replaces the impoundment permit and has no impact on how the District could manage the lake impoundment.

OWRD Notice Webpage: http://apps.wrd.state.or.us/apps/misc/wrd_notice_view/?notice_id=21
Note: A short tutorial on navigating through OWRD website in search of water rights is shown below.

For this hearing, staff provides this report highlighting newly gathered information and will provide a presentation which will seek to provide a general synopsis to date. Staff highly recommends the Board and public review previous key meetings and meeting materials for expanded detail and information as shown here:

Key Meetings & Materials

Links to Documents can also be on DLWID's Project's page under Lake Level or Erosion Study
http://www.dlwid.org/Projects.html#Lake_Level
<http://www.dlwid.org/Projects.html#Erosion>

Water Right Information

[Certificate of Water Right: 69267](#)
[Map of Certificate](#)
[Water Permit R-11968: Volume](#)
[Water Permit 52672: Flow](#)
[Certificate of Water Right: 89980](#)
[DLWID Annual Report WY 1997](#)
[WRD Technical Review 1993-04-19](#)
[WRD Period of Use 1996-07-30](#)
[Beneficial Use Report 2000-09-29](#)

Materials & Reports

PBS Engineering + Environmental, Technical Memorandum Schematic Options for Modification of Impoundment Dam Facility D River, Lincoln City, Oregon
http://www.dlwid.org/Projects/Lake_Level/PBS_Technical_Memorandum_D_River_Impoundment_Dam.pdf
[Staff Presentation 2012-05-10](#)
[Staff Report 2012-12-13](#)
[Staff Presentation 2012-12-13](#)
[Director Presentation 2010-04-01 UPDATED](#)
[Director Presentation 2010-04-01](#)
[Shoreline Erosion Study: Tetra Tech, Inc.](#)
[FAQ Lake Level Handout](#)

Meetings of particular interest (Available: <http://www.dlwid.org/Board%20Directors.html>)

2012-05-10 Public Hearing on Lake Level and the Water Rights.
2012-06-07 Public Hearing on Lake Level and the Water Rights, Board Deliberations
2012-12-13 Meeting: Lake Level Monitoring
2014-04-10 Meeting: “Harmful Algal Blooms” –Physical Treatments – Natural Hydrology
2014-04-19 Harmful Algal Bloom Workshop

Recent meetings of related interest: To find the related information to a meeting visit DLWID Meetings Page and scroll down to the dates to see links to Agenda, Staff Reports, Minutes and Video for each of the meetings as may be available. In some cases the updates may be short and only relay ongoing efforts or brief details, but have been included for continuity. In addition to this list there has been frequent public comment on these and related topics which are recorded in the meeting minutes throughout, and most recently of possibly of particular interest since 2014-04-10.

DLWID Meetings Page: <http://www.dlwid.org/Board%20Directors.html>

2007-07-05 “Lake Level Management”
2009-01-08 “Lake Level Update”
2009-02-05 “Lake Level Discussion”
2009-03-05 “Lake Level Discussion”
2009-04-02 “Lake Level Decision”
2009-05-07 “Lake Level”
2009-06-05 “Lake Level”
2009-07-02 “Lake Level”
2009-08-06 “Lake Level”
2009-09-03 “Lake Level”
2009-10-01 “Lake Level”
2009-11-05 “Lake Level”
2009-12-03 “Lake Level”
2010-01-07 “Lake Level”
2010-02-04 “Lake Level”
2010-03-04 “Lake Level”
2010-04-01 “Lake Level”
2010-05-06: “Lake Level” “Save our Shoreline” Initiation of Erosion Study
2010-06-03: “Lake Level”
2010-07-01 “Lake Level – Evaporation Calculation”
2010-08-05 “Lake Level” & “Erosion Study RFP” *
2010-09-02 “Lake Level” & “Erosion Study RFP”
2010-10-07 “Lake Level” & “Erosion Study RFP”
2010-11-11 “Lake Level” & “Erosion Study RFP”
2010-12-02 “Lake Level” & “Erosion Study RFP”
2011-01-06 “Lake Level” & “Erosion Study”
2011-02-03 “Lake Level” & “Water Rights” & “Erosion Study”
2011-03-03 “Erosion Study”
2011-04-07 “Erosion Study”
2011-05-05 “Erosion Study”
2011-05-09 Budget Hearing
2011-06-02 “Erosion Study”

- 2011-07-07 “Erosion Study”
- 2011-08-04 “Erosion Study”
- 2011-09-01 “Erosion Study”
- 2011-10-06 “Erosion Study”
- 2011-11-03 “Erosion Study”
- 2011-12-01 “Erosion Study” – Presentation
- 2012-01-05 “Erosion Study”
- 2012-02-02 “Erosion Study”
- 2012-03-01 “Erosion Study”
- 2012-04-05 “Erosion Study” – Finalized – Presentation
- 2012-05-10 “Public Hearing: Lake Level and Oregon Water Right Certificate #69267, Permits 52672 & R-11968” & “Lake Level and Water Right Certificate #69267, Permits 52672 & R-11968 Board Discussion and Decision”
- 2012-06-07 “Public Hearing: Lake Level and Oregon Water Right Certificate #69267, Permits 52672 & R-11968” & “Lake Level and Water Right Certificate #69267, Permits 52672 & R-11968 Board Discussion and Decision”
- 2012-08-09 “Lake Level Monitoring”
- 2012-09-13 “Lake Level Monitoring”
- 2012-10-11 “Lake Level Monitoring”
- 2012-12-13 “Lake Level Monitoring” (Report)
- 2014-04-10 “Harmful Algal Blooms” –Physical Treatments/Controls – Natural Hydrology
- 2014-04-19 Harmful Algal Bloom Workshop [Eilers Presentation](#): Slide 22 How to Reduce Algae (Cyanobacteria)? Decrease residence time by keeping lake at minimum stage
- 2014-11-20 “Replacement of the Impoundment Structure (The Dam)”
- 2014-12-11 “Replacement of the Impoundment Structure (The Dam)” (cancelled)
- 2015-01-08 “Replacement of the Impoundment Structure (The Dam)”
- 2015-02-12 “Replacement of the Impoundment Structure (The Dam)”
- 2015-03-05 “Replacement of the Impoundment Structure (The Dam)”
- 2015-04-09 “Public Hearing: Potential replacement of the impoundment structure otherwise known as the dam and the overall managed use and/or continuance of the District’s Water Right Certificate 69267, Permit to Appropriate the Public Waters 52672 (also identified as S52672), Permit to Store the Public Waters R-11968, Water Right Certificate 89980, and all permits or certificates that may originate from Devils Lake Water Improvement District water right applications identified by Oregon Water Resources Department as S71813, R74720, or R71703.” & “Board Deliberations: Potential replacement of the Water Impoundment Device (The dam) and overall managed use and/or continuance of the District’s Water Rights.”



For the benefit of the public here I have included a short explanation on how to access all the water rights in the state, and specifically those owned by the District.

To access documents held by the state follow these links and search instructions or contact OWRD for assistance. Phone: 503-986-0900

Oregon Water Resources
Department (OWRD) Water Right
Information Search:
<http://www.oregon.gov/owrd/pages/WR/wris.aspx>

From Link above Click “[Water Right Information Query](#)” >>>>
Select “Search by Name” tab >>>>
Set Company Name to “Devils Lake Water Improvement District”
>>>>> Click Search >>>>>
rendering the first screenshot which clicking “select” on each of the three rows opens additional information as shown by sample below in the second screenshot. Here you can peruse, which have links to pertinent documents.

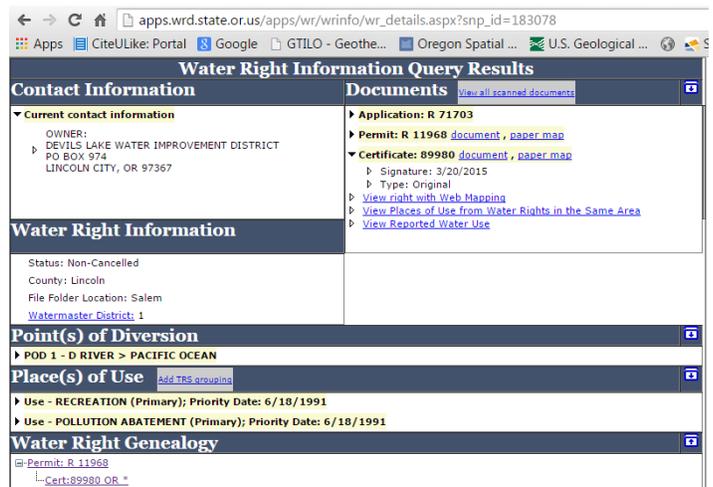


Water Rights Information Query Results

Records/Page: 10

Contacts	Application	Permit	Certificate	Claim	Decree	Transfers	Status
Select OWNER: DEVILS LAKE WATER IMPROVEMENT DISTRICT PO BOX 974 LINCOLN CITY, OR 97367	S71813	S52672					NC
Select OWNER: DEVILS LAKE WATER IMPROVEMENT DISTRICT PO BOX 974 LINCOLN CITY, OR 97367	R74720		69267				NC
Select OWNER: DEVILS LAKE WATER IMPROVEMENT DISTRICT PO BOX 974 LINCOLN CITY, OR 97367	R71703	R11968	89980				NC

Download: [Point of diversion data](#), [Place of use data](#), [Stakeholder data](#)
[Return to WRIS Query](#)



[View Water Rights in same Family](#)
[Report Errors with Water Right Data](#)
[Return to WRIS Query](#)

Potential Replacement of the Impoundment Structure:

Objective: Significantly modify or remove the cement sub base of the dam in favor of a truly temporary summer impoundment.

Assumptions: From 2015-01-08 Staff Report (Director Weldon)

Removing the impediment of the concrete foundation would allow for a faster flowing, deeper channel with the following benefits.

- Increased velocity in the river allows more sand to be transported back to the beach in the winter.
- The lake level would recede faster, reducing flooding issues and shoreline erosion.
- Lower winter lake levels would reduce saturation of low lying septic tanks and drain fields.
- Improved habitat for wild Coho salmon and other species traveling in and out of the lake.
- Increased lake turnover which is a benefit in fighting Harmful Algae Blooms.
- Reduction of the sandbar east of the bridge will limit the seagull gathering during the summer which will reduce the *e coli* warnings and improve water quality.
- Reduction of the sandbar could reopen the river to paddle boards and kayaks.

Professional input on original assumptions:

Support of project and concurrence of the likely benefits by Professional Hydrologist and Certified Lake Manager, Joe Eilers, specifically addressing the improvements to the hydrology and sediment transport back towards the ocean from removal of the cement.

Support for the project and professional opinion from US Forest Service Hydrologist, Kami Ellingson stating that she anticipates considerable improvements to water quality fish habitat and the hydrology.



December 3, 2014

Randy Weldon
Board Member
Devils Lake Water Improvement District
Lincoln City, Oregon

Dear Mr. Weldon:

As per your request, I reviewed the recent staff report (Nov 2014) posted on the DLWID website. I examined your proposal to remove the concrete base of the structure at the outlet of Devils Lake. I believe that your proposal has merit and wish to offer my support for your concept. I have noticed in my years of work on Devils Lake that sediment, primarily comprised of sand, continues to accumulate at the terminus of the lake. This process will continue so long as there is a structure at the outlet that slows the flow of water and allows sediment to be deposited.

You are well aware that the capacity of flowing water to carry sediment is a function of its velocity. I don't need to provide you with detailed mathematical support or complex modeling for this process as you can observe it with you own eyes at the outlet. You identify a number of likely benefits from this action and I concur with your assessment.

Good luck with your proposal.

Best Regards,

Joseph Eilers
Prof. Hydrologist-WQ (registration #1475)

MaxDepth Aquatics, Inc.
Email: j.eilers@maxdepthaq.com

64110 Harris Way,
www.maxdepthaq.com

Bend Oregon 97701
541-390-2911





Siuslaw National Forest

To: The Board of Directors of the Devil's Lake Water Improvement District
From: Kami Ellingson, Watershed Program Manager, Siuslaw National Forest
CC: Paul Robertson, Catherine Pruett, Randy Weldon
Date: 12/10/2014
Re: Site visit to D River

Comments: My name is Kami Ellingson. I am a hydrologist with the USFS with 20 years of field experience in physical hydrology. For the past 8 years I have been the Watershed Program Manager for the Siuslaw National Forest. I visited the D River site at the bridge and believe that the water quality, fish habitat/access and overall hydrology of the D River system would be considerably improved with the removal of the dam/sill. I understand that there are needs that will demand some outlet control during the summer low flows and I believe that there are a number of options that will provide the desired lake elevation through the summer months. Such options will meet the elevation needs of the users, while allowing improved hydrologic conditions the remainder of the year. Currently the dam or sill that remains in place year round is trapping sands, which alters the low flow channel and reduces the storage capacity of the lake during high flow events. High levels of deposition at the river mouth, has altered the hydrology at low flows. The deposit or sand bar spreads the flow into sheet flow across the channel. Salmonids have trouble navigating through sheet flow. They are exposed to predators and altered velocities. The deposition at the mouth also impacts the natural lake flushing that should occur seasonally. This impacts water quality. Temperatures increase and conditions will be optimal for hazardous algal blooms. In the winter with the dam/sill foundation in place, sand deposition will continue. This will reduce the amount of storm water the lake can hold, as well as the rate at which the flood waters recede. Projections for climate change and sea-level rise in all likelihood will exacerbate these problems for the D River system. Summer low flow periods may extend into the fall and winter tides and precipitation events are projected to increase.

I believe that it is important to reflect on the objective of the dam. Why was it built in the first place? Do we have the same needs now? Is the current structure meeting our needs? Is there a better option that will maximize the benefits for more of the resources that depend on this system?

Thank you for your time.



.....
Water Right Implications: None. See correspondence between Oregon Water Resources NW Region Manager, Mike McCord and DLWID Director Weldon

----- Original Message -----
From: MCCORD Mike L
To: 'randy@dlwid.org'
Sent: Tue Nov 25 9:27
Subject: Fwd: RE: DLWID water impoundment structure

Good morning Randy. As we discussed, I do not see any issue with using a different method for creating the dam since this dam is non statutory. Being non statutory, the District is not required to submit engineered plans and specifications when it makes alterations to the dam. Although it is not required, it is not a bad idea to consult with an engineer when making changes to a dam.

, OWRD
Permit R-11968 does have some specific language regarding board heights. These elevations were put into the permit to address fish passage. Please make sure that whatever type of structure you put in place is able to be consistent with these elevations. If you have not done so already, I recommend that you coordinate with ODFW to ensure that you are satisfying the fish passage requirements of the permit. It is better to work this out ahead of time rather than trying to address it later. As we previously discussed, continue to maintain the measurement devices that are in place.

Please let me know if you have any further questions or need more information.

Thanks

Mike McCord
NW Region Manager
503 986-0893

From: Randy Weldon [<mailto:randy@dlwid.org>]
Sent: Wednesday, November 05, 2014 6:27 PM
To: MCCORD Mike L
Cc: lake.manager@dlwid.org
Subject: DLWID water impoundment structure

Mike McCord

Northwest Region Manager

Oregon Water Resources Department, Water Masters

Mr. McCord

I would like to thank you for spending time on the phone with me a few weeks ago. We discussed in length the Oregon Water Resources Departments view on the Devils Lake Water Improvements Districts idea of utilizing a different type of an impoundment

structure instead of our current concrete and wooden boards. Our water rights are R-11968 & 52672.

After our phone conversation it is my understanding that the OWRD is not concerned about what type of impoundment structure we use only that we adhere to the volume, elevation and other conditions spelled out in our permits.

Conditions such as the following, maximum volume is 1360 acre feet, maximum area submerged is 680 acres, maximum depth is 21 feet, maximum lake elevation during summertime impoundment is 9.53 feet above sea level. This 9.53 foot elevation was determined by an OWRD review and full survey after a complaint filed by the Oregon State Parks in 2009. Also continue the daily height data collection and to follow fish passage requirements and also the required draw down in lake levels for evaporation in August and September every year.

The top of the concrete base of the dam sits at 8.03 feet above sea level. This creates a catch basin behind the dam when the strong winter storm swells push up the river into the lake multiple times each winter. This reversal of the D-river brings sand with it and deposits it on the east side of the concrete base. The sandbar now extends over 100 yards up the river east of the dam. This increases in volume every year. Much of this sandbar is well over 9 feet in elevation now. The DLWID used to budget for and spent tens of thousands of dollars over the years to dredge out the river channel on the east side of the dam. This was discontinued over the last couple of decades.

Our idea is to remove the concrete foundation and return the D-River to a natural state except for the 3-4 months in the summer when the district would utilize a different type of impoundment structure. This could be accomplished by using something as simple as a few rows of sandbags and or possibly some new style flood control tubes or bladders or some other temporary similar device.

Below are the benefits we expect to see by removing the permanent concrete base.

- 1) We have as a district tackled the summertime erosion issue by not impounding our full amount of water the last 3 summers. By raising the lake to 9.0 instead of 9.53 we have reduced summertime shoreline erosion from heavy boat wave action. We have been so far unable to mitigate wintertime erosion. If we remove the concrete base in the river it will allow the sandbar to start flushing out of the river back to the beach during heavy rain events. This will lower the height of the sandbar. A lower sandbar will allow more water to exit the lake faster reducing the average wintertime lake level. A lower lake level during the winter will reduce erosion as the upper shoreline will have less saturation and wave impact.
- 2) Reducing the sandbar size and elevation will reduce the summertime gathering of seagulls. The districts DNA tests have shown that *e coli* problems in the river come from avian species. Reducing the bird congregation on the sandbar in the summer will reduce the repeated *e coli* warnings that we have to post about the river. DLWID is very concerned for the health of kids and others who play in the river and out on the beach at the rivers exit.

3) Increasing the volume of flow of water out of the lake in the winter will keep the lake lower on average which will reduce saturation of low lying septic tanks and drain fields. This will help water quality.

4) Increasing the volume of flow of water out of the lake in the winter will increase flushing of the nutrients and algae out of the lake and will be replaced with rainfall and runoff. This is known as lake turn over. Lake turnovers is a big positive factor in reducing Harmful Algae Blooms (HABS)

5) Flooding issues are a problem for some lakefront homeowners. A deeper unimpeded river channel in the winter will allow more volume of water to exit the lake faster which will create a lower lake stage on average. This will also allow more capacity of rainfall before flooding becomes a problem.

6) Wild Coho salmon and other native species traveling into and out our lake will benefit in the winter time from an unimpeded and deeper river channel in the form less stress on the fish having to cross the shallow sandbar after coming up the beach and river. They will also benefit in safety in not being so exposed to predators.

We have looked long and hard to try to identify any negative aspects. There will be some the small costs in removing the concrete foundation and in purchasing sandbags, flood tubes, or bladders etc. Other than that it seems to be a positive in most aspects.

We do have a small group of lake front home owners who will probably oppose the DLWID on this matter even though I made it very clear at our October meeting this has nothing to do with summer time lake level decisions which is a very passionate topic with them.

Once again I thank you for your time the other day. Taking over Greg Beamans responsibilities on top of your own job must be challenging. Could you please send me a reply to this email with any concerns or corrections I should know about. Once again thank you for your time.

Sincerely,

Randy Weldon, Director, Devils Lake Water Improvement District

Permitting:

Directors Weldon, Norris, and myself met for a multi-agency pre-application meeting for the project in March in Salem. Project will require Oregon DSL Removal Fill Permit & US Army Corps removal Fill Permit. ODFW supports the project and will support the new temporary only dam installation and removal which would be outside of the “in-water” work period. US ACE suggested could be done under one of their programmatic permits as long as it fits into SLOPES, which are criteria within the Corps essentially pre-approved project list. The US Army Corps of Engineers and Division of State Lands Joint Permit can take up to 120 days to complete. DEQ suggested to insure the use of

biological components to any bank stabilization as otherwise it might not fit with SLOPES. This would be part of what the District would propose.

Feasibility of Temporary Structure:

PBS Engineering + Environmental were retained to provide a Technical Memorandum Schematic Option Development for Modification of Impoundment Dam Facility D River, Lincoln City, Oregon.

Download Available:

http://www.dlwid.org/Projects/Lake_Level/PBS_Technical_Memorandum_D_River_Impoundment_Dam.pdf

Here is a summary of the three feasible options in their report:

SCHEMATIC OPTION A

FULL REMOVAL AND TEMPORARY SANDBAGS (SEE FIGURE 2)

Pros

- Full removal of concrete footing
- Natural river state created with potential for dynamic wintertime river scouring action
- Sandbags adaptable to changing riverbed configuration year to year
- Sandbags inexpensive to purchase
- Appears to meet OWRD permit conditions

Cons

- Footing demolition cost and permitting (one-time cost)
- Bank restoration cost and permitting (one-time cost)
- Sandbag dam not as secure, subject to vandalism
- Sandbag dam may not be visually appealing
- Sandbag filling and installation labor intensive
- Storage and transport of sandbags

SCHEMATIC OPTION B

FULL REMOVAL AND TEMPORARY CONCRETE BLOCK (SEE FIGURE 3)

Pros

- Full removal of concrete footing
- Natural river state created with potential for dynamic wintertime river scouring action
- Concrete blocks and water barrier configuration adaptable to changing riverbed configuration year to year
- CMU blocks can be placed by hand
- Alternate large concrete blocks not subject to vandalism
- Appears to meet OWRD permit conditions

Cons

- Footing demolition cost and permitting (one-time cost)
- Bank restoration cost and permitting (one-time cost)
- CMU block and water barrier dam not as secure, subject to vandalism

- CMU block and water barrier dam may not be visually appealing
- CMU block installation labor intensive
- Storage, handling and transport of CMU blocks

SCHEMATIC OPTION C

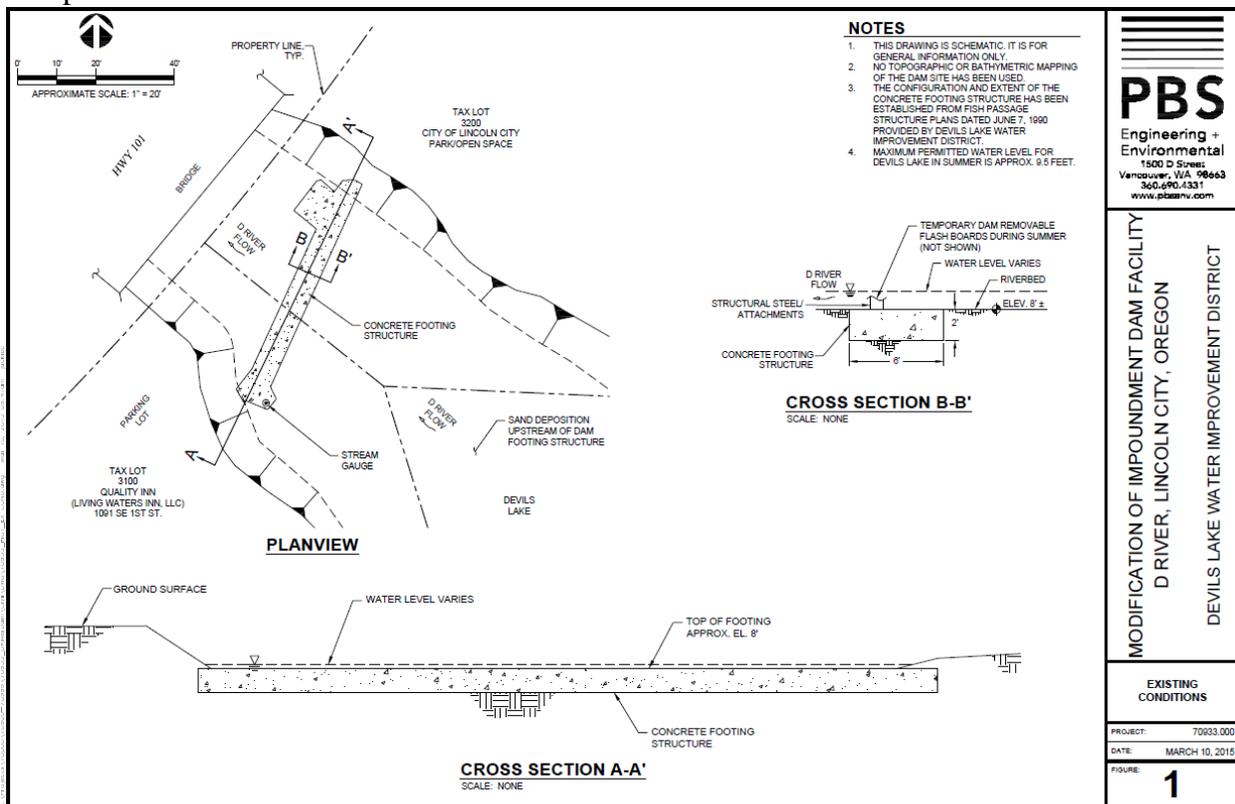
PARTIAL REMOVAL AND TEMPORARY OPTIONS (SEE FIGURE 4A/4B)

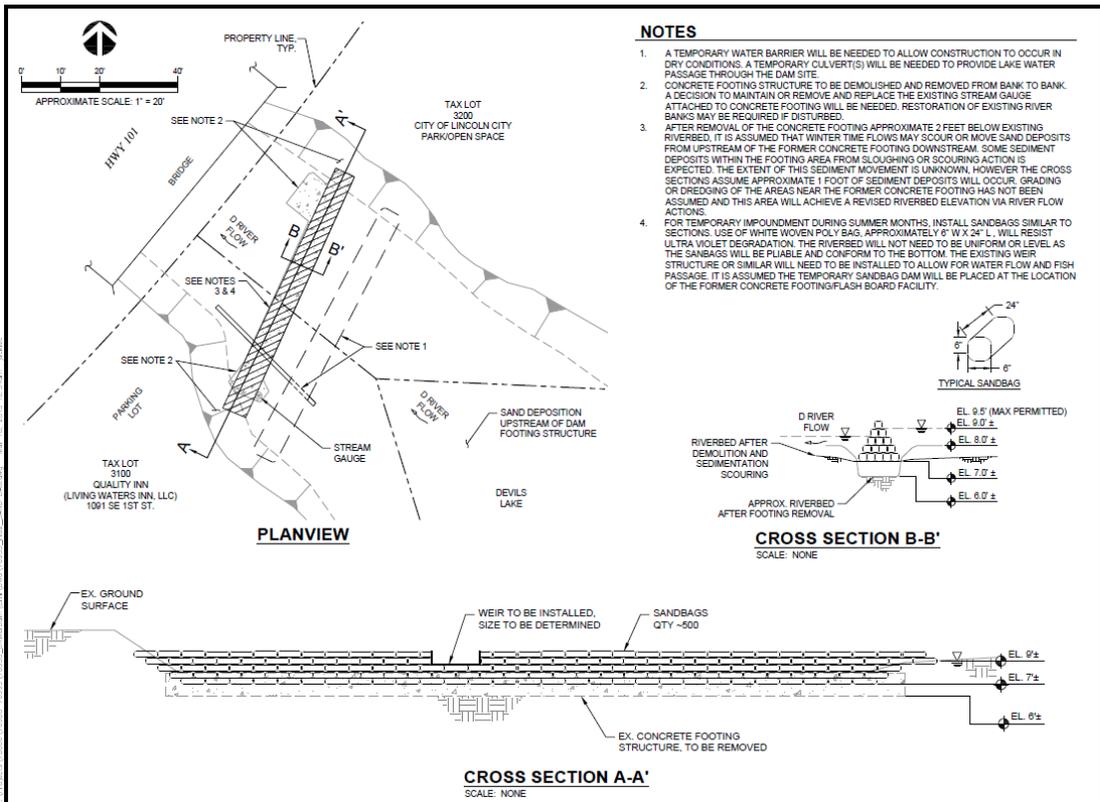
Pros

- Partial removal of concrete footing
- Natural river state created through footing opening with potential for dynamic wintertime river scouring action
- Temporary impoundment facility of sandbags or concrete blocks will be adaptable to changing riverbed configuration year to year
- No disturbance of banks or stream gauge
- Appears to meet OWRD permit conditions

Cons

- Partial footing removal not full river width, may still be a restriction
- Footing demolition cost and permitting (one time cost)
- Temporary impoundment facility of sandbags or concrete blocks not as secure, subject to vandalism, may not be visually appealing, installation is labor intensive and storage & transport



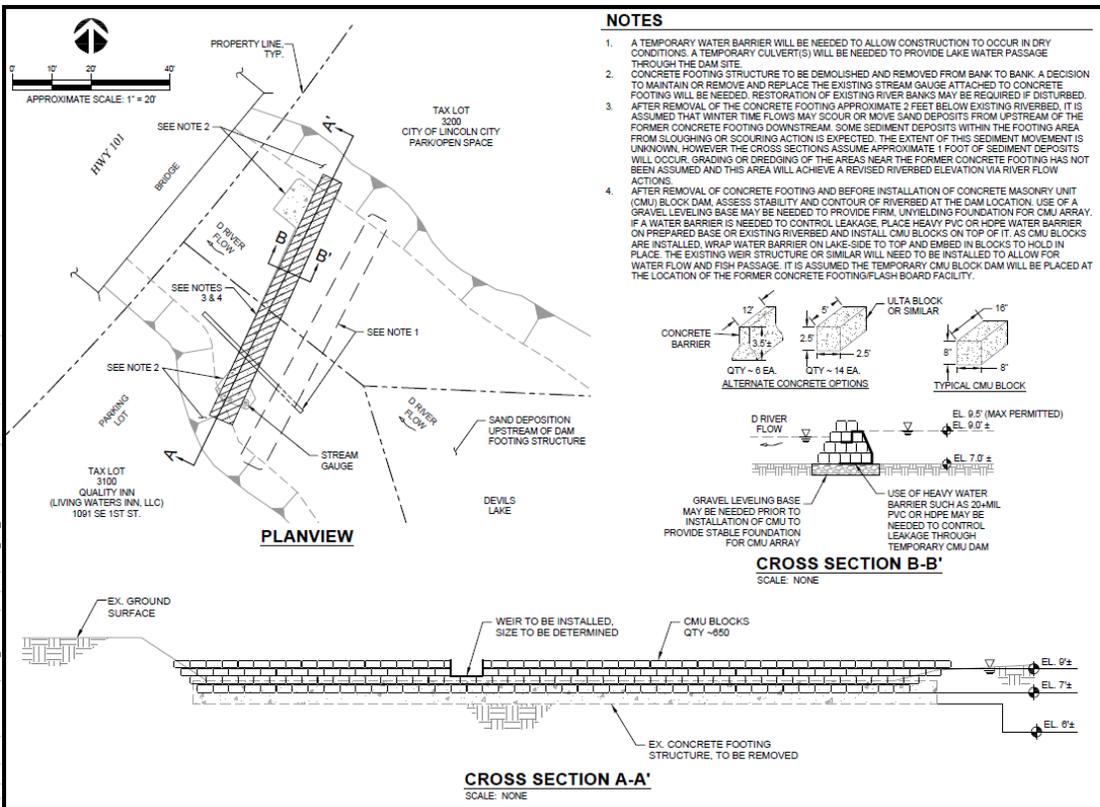


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Engineering + Environmental
1500 D Street
Vancouver, WA 98663
360.690.4331
www.pbsenv.com

MODIFICATION OF IMPOUNDMENT DAM FACILITY
D RIVER, LINCOLN CITY, OREGON
DEVILS LAKE WATER IMPROVEMENT DISTRICT

SCHEMATIC OPTION A
FULL REMOVAL & TEMPORARY SANDBAGS

PROJECT: 70933.000
DATE: MARCH 10, 2015
FIGURE: **2**

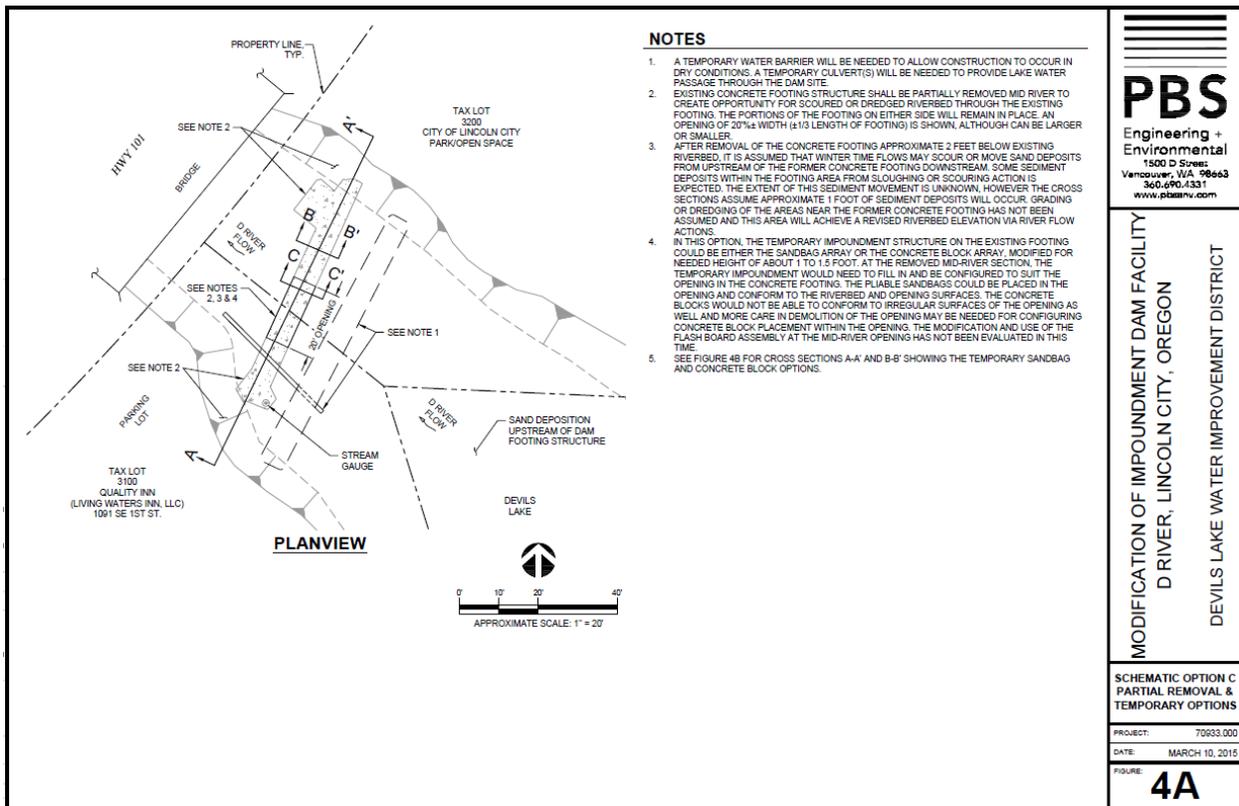


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SCHEMATIC OPTION B
FULL REMOVAL & TEMPORARY CONCRETE BLOCKS

PROJECT: 70933.000
DATE: MARCH 10, 2015
FIGURE: **3**



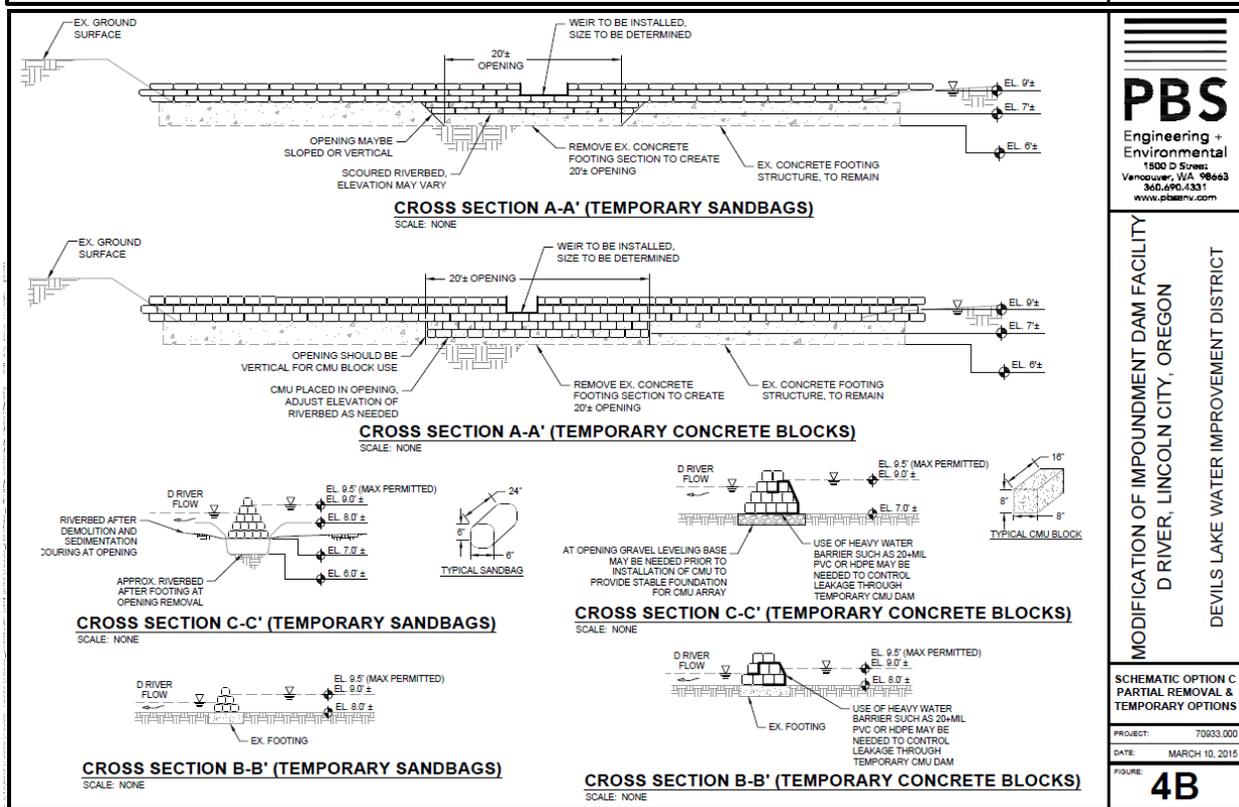
NOTES

1. A TEMPORARY WATER BARRIER WILL BE NEEDED TO ALLOW CONSTRUCTION TO OCCUR IN DRY CONDITIONS. A TEMPORARY CULVERT(S) WILL BE NEEDED TO PROVIDE LAKE WATER PASSAGE THROUGH THE DAM SITE.
2. EXISTING CONCRETE FOOTING STRUCTURE SHALL BE PARTIALLY REMOVED MID RIVER TO CREATE OPPORTUNITY FOR SCOURED OR DREDGED RIVERBED THROUGH THE EXISTING FOOTING. THE PORTIONS OF THE FOOTING ON EITHER SIDE WILL REMAIN IN PLACE. AN OPENING OF 20'± WIDTH (±1/3 LENGTH OF FOOTING) IS SHOWN, ALTHOUGH CAN BE LARGER OR SMALLER.
3. AFTER REMOVAL OF THE CONCRETE FOOTING APPROXIMATE 2 FEET BELOW EXISTING RIVERBED. IT IS ASSUMED THAT WINTER TIME FLOWS MAY SCOUR OR MOVE SAND DEPOSITS FROM UPSTREAM OF THE FORMER CONCRETE FOOTING DOWNSTREAM. SOME SEDIMENT DEPOSITS WITHIN THE FOOTING AREA FROM SLOUGHING OR SCOURING ACTION IS EXPECTED. THE EXTENT OF THIS SEDIMENT MOVEMENT IS UNKNOWN, HOWEVER THE CROSS SECTIONS ASSUME APPROXIMATE 1 FOOT OF SEDIMENT DEPOSITS WILL OCCUR. GRADING OR DREDGING OF THE AREAS NEAR THE FORMER CONCRETE FOOTING HAS NOT BEEN ASSUMED AND THIS AREA WILL ACHIEVE A REVISED RIVERBED ELEVATION VIA RIVER FLOW ACTIONS.
4. IN THIS OPTION, THE TEMPORARY IMPOUNDMENT STRUCTURE ON THE EXISTING FOOTING COULD BE EITHER THE SANDBAG ARRAY OR THE CONCRETE BLOCK ARRAY, MODIFIED FOR NEEDED HEIGHT OF ABOUT 1 TO 1.5 FOOT. AT THE REMOVED MID-RIVER SECTION, THE TEMPORARY IMPOUNDMENT WOULD NEED TO FILL IN AND BE CONFIGURED TO SUIT THE OPENING IN THE CONCRETE FOOTING. THE PLIABLE SANDBAGS COULD BE PLACED IN THE OPENING AND CONFORM TO THE RIVERBED AND OPENING SURFACES. THE CONCRETE BLOCKS WOULD NOT BE ABLE TO CONFORM TO IRREGULAR SURFACES OF THE OPENING AS WELL AND MORE CARE IN DEMOLITION OF THE OPENING MAY BE NEEDED FOR CONFIGURING CONCRETE BLOCK PLACEMENT WITHIN THE OPENING. THE MODIFICATION AND USE OF THE FLASH BOARD ASSEMBLY AT THE MID-RIVER OPENING HAS NOT BEEN EVALUATED IN THIS TIME.
5. SEE FIGURE 4B FOR CROSS SECTIONS A-A' AND B-B' SHOWING THE TEMPORARY SANDBAG AND CONCRETE BLOCK OPTIONS.

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SCHEMATIC OPTION C
PARTIAL REMOVAL & TEMPORARY OPTIONS
PROJECT: 70933.000
DATE: MARCH 10, 2015
FIGURE: **4A**



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SCHEMATIC OPTION C
PARTIAL REMOVAL & TEMPORARY OPTIONS
PROJECT: 70933.000
DATE: MARCH 10, 2015
FIGURE: **4B**

Costs:

Removal of the structure has already been acknowledge to not exceed \$25,000.

Devils Lake Water Improvement District
Staff Reports: 2015-04-09

Materials for a new structure are conservatively estimated to be \$1,044 for cement blocks. Sand bags are very conservatively estimated at \$980, plus cost of sand if not locally available or if permit requires otherwise, but could be as low as \$372, again exclusive of sand.

<http://www.esandbags.com/esandbags-empty-polypropylene-sand-bags-w-ties-pack-of-100-bags/>

Cost of installation as yet to be determined, but currently the District pays for the installation of the metal and wooden aspects of the dam each year. This contract which includes provision for daily lake level monitoring as needed for permit compliance, sign maintenance, as well as 20 hours additional services equals \$5,096 annually.

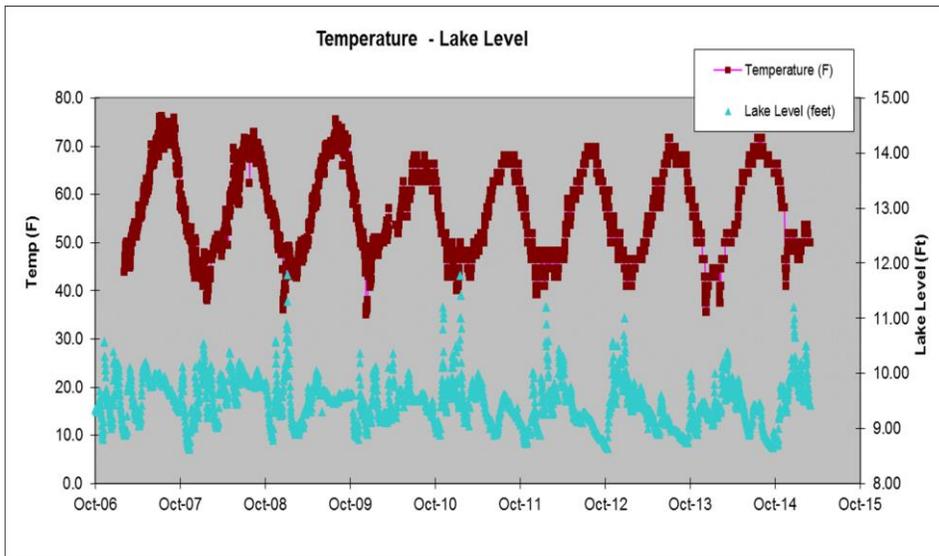
The official means by which the District may choose to impound should it decide to change to a truly temporary, summertime only means is yet to be formally decided and could impact the time and effort and thus cost of installation.

ODFW, Fish Biologist Derek Wilson suggested recently a temporary structure could be built out of series of tripods and tongue and groove planks which could be easier (certainly less heavy) to install which although not priced would likely be another inexpensive alternative.

Managed Use and/or Continuance of Water Rights:

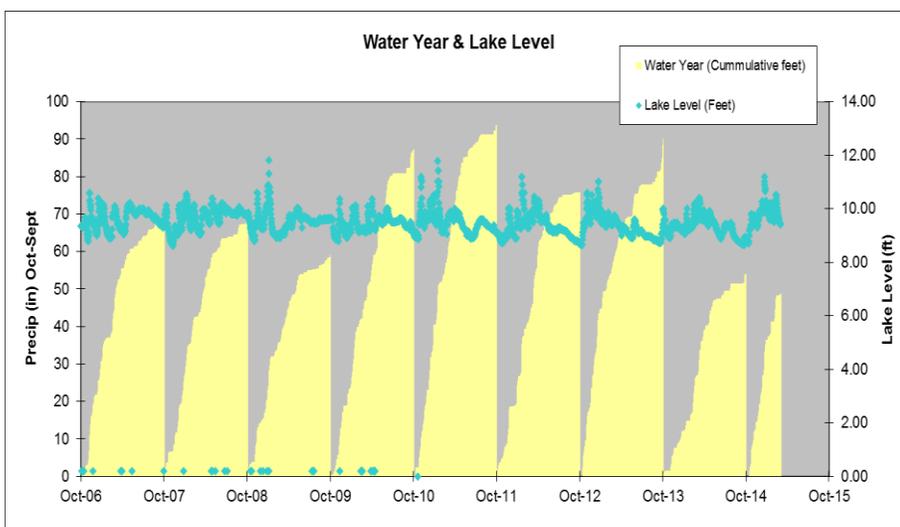
In addition to the potential dam replacement, the District is also again considering the management and/or continued use of the District's Water Rights. These water rights were applied for in 1991 originally, approved in 1996, and were first enacted in March 1997. As mentioned earlier the dam had come under disrepair less than 10 years into impoundment and was retrofitted in 2006, spawning a series of events. These included accolades, complaints, formal review, the Shoreline Erosion Study, the lake level monitoring, public hearings, board policy, Harmful Algal Bloom assessment, calls for removal of the dam, calls for a potential replacement of the dam, and now finally another hearing on the management and /or ongoing use of the water rights.

In the 2012 public hearings and still today, the issues around impoundment remain largely the same. We have however garnished additional professional insight from into the negative role impoundment plays on water quality. Increasing the residence time by impounding water favors blue-green algae reproduction, and decreased the flushing. We also through empirical evidence find no correlation between higher lake levels and lower temperatures as had been suggested. Higher lake levels if anything better match years with more intense HABS than lower lake levels, but neither show much of relationship.



Rather the amount of water from precipitation moving through the system maybe a useable indicator or severity of blooms. With higher lake levels held in summer, more rain has to fall before the volume of the lake is replaced, flushing out the system and the Harmful Algal Blooms (HABS).

From the Figure below, cumulative water year shown in yellow is a better indicator of bloom severity than lake level shown in green. In particular the lack of total precipitation between October 2013 and the bloom that started Mid-January of 2014 and crashed in April 2014 may be an indicator of problematic blooms. In the current water year (October 2014 to present) we have already nearly netted the total precipitation received the year before. Blooms in the lake while just now starting to form are almost non-existent compared to last year at this time. Unfortunately blue-green algae are resilient, and only require nutrients (nitrogen of which some can manufacture from the atmosphere) and sunlight to start growing, but certainly water residence time is a major factor in bloom dynamics and water quality, favoring lower lakes level or natural hydrology over impoundment.

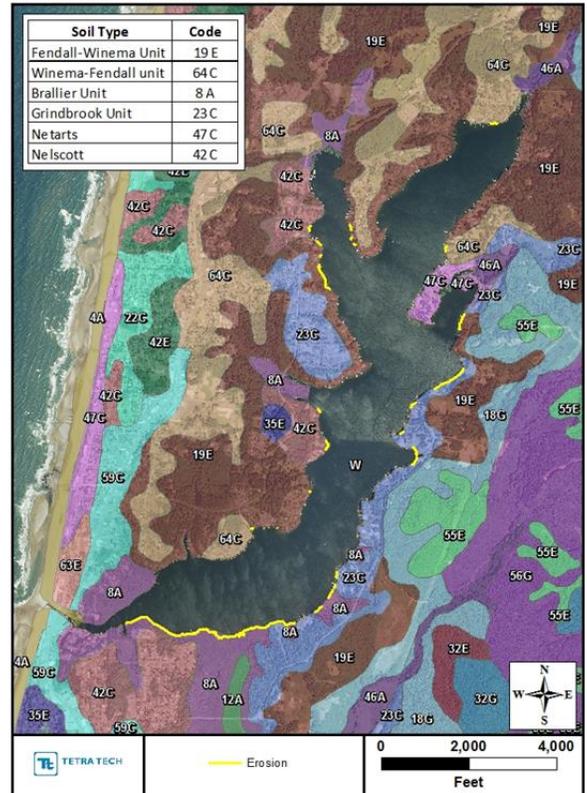


Official Bloom Years: 2008, 2009, 2013, 2014

We continue to understand fish passage and habitat as was presented in 2012 - more is better, essentially, but additionally should the cement be removed, USFS Hydrologist Kami Ellingson suspects a deeper channel is likely to form. Currently we have laminar flow created by the wide, flat cement base. This deeper channel would be better for fish as it provides better cover from predators (e.g. diving birds). The fish weir was replaced and moved to the center of the stream in 2013, which may have reduced the shade coverage over the exit, which may have provided additional cover for predators (e.g. warmwater fish such as bass or crappie), but was largely an improvement aimed at better control of the flow and movement of the exit point to the middle of the river for the albeit modest erosion concerns downstream towards the bridge footing.

The Shoreline Erosion Study summarized the impacts of inundation on shoreline vegetation, erosional energy of boat wakes verses wind derived waves, and recent trends in shoreline erosion. Key findings were such:

- Full impoundment = 27 additional acres of land inundated
- Operation of the dam reversed the natural hydrology
- Highest average lake level in May and June vs. winter
- With dam, wave energy focused on Narrow Bandwidth year-round
- Approximately 2 miles of shoreline is eroding
- Areas of highest erosion currently are areas most impacted by summertime wind waves
- Boat waves 18% total wave energy, but may be up to 49%
- Lake level has significant impact on the erosional characteristic of waves
- Artificially maintaining lake level, focuses waves energy, potentially increasing erosion on that point
- Dam has narrowed/focused the impact zone.
- Shallower water allows wave to break, dissipating the wave energy
- Increasing the lake level, increases the tendency for erosion
- Native vegetation has many benefits, challenges

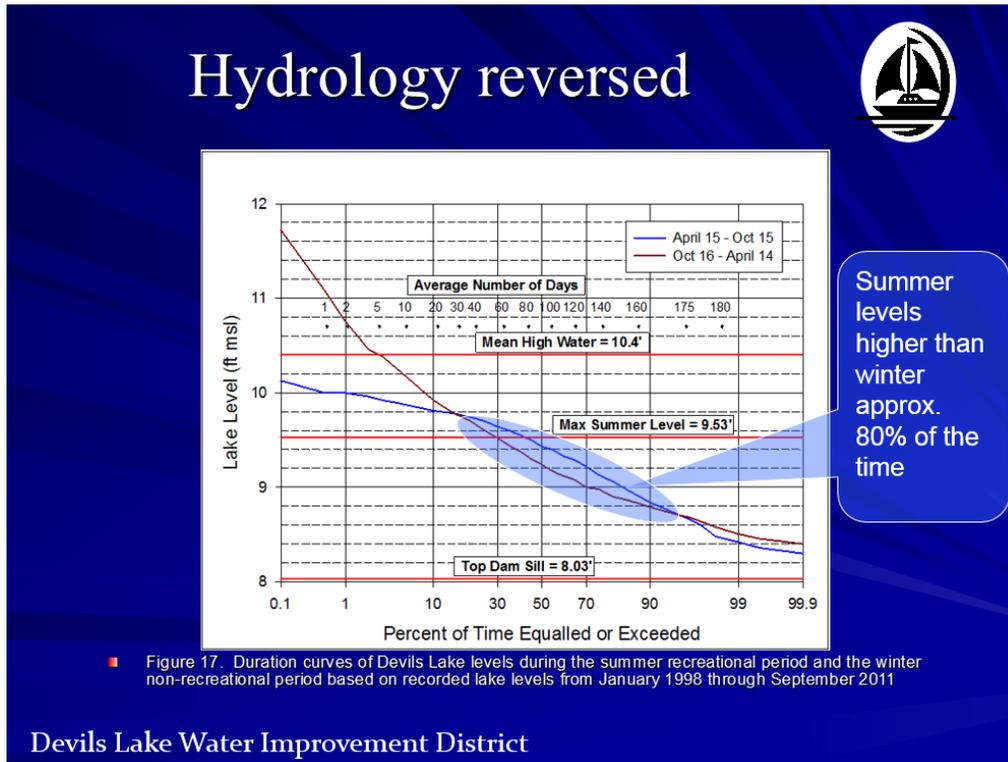


When retaining walls were considered for reflection of energy, undermining and over topping, Tetra Tech, Inc. reported the following:

Reflection: "...much of the wave energy that impacts the wall is reflected back into the lake and/or down the shoreline where it can combine with and enhance other waves."
Underneath: "The trough of the waves, however, exposes at least several inches of the unprotected shoreline below the wall to erosion."

Overtop: “Significant waves can also overtop some of the walls, absorbing, rather than reflecting that part of the wave energy and subjecting the unprotected areas behind the wall to erosion.”

Recommendations and considerations of the study were for active shoreline restoration and the fact that operationally the dam is limited to 18” window (8.03’ to 9.53’) to lessen erosion.



Recreation & Accessibility is largely unchanged since 2012, however certainly a few structures may have been added, decommissioned, or modified. We have learned from Oregon State Marine Board, that Regatta Grounds had improvements between 1978-1981 and East Devils Lake State Park in 1993-1995 both funded by state revenues. These improvements were designed for two foot variations, in lake level from ordinary low to high and were both constructed prior to the District receiving the right to impound water. As such they have ramps and floating docks well suited for natural variability in lake levels and are preferred launch sites for boaters. In contrast Holmes Road Park which was not part of the state funding pool has ramp improvements that do not match well with existing water impoundment rights or policy, nor naturally occurring lake levels high or low. At the ordinary high water of 10.4’, an estimated depth at the end of the ramp is as low as 17”. As such the ramp is not sufficient for but the smallest vessels when using trailers at even the winter high.

In addition, the District did a comprehensive study of all the docks inside the lake’s meandered boundary as well as some also on private canals. While variability was significant and the intended use of the docks also variable and in many cases unknown

(fishing pier to boat house) the evidence would suggest that if water access was desired, water access has been achieved for decades by lake front property owners. The conservatively estimated mean depths of all 393 structures was 2.70 @ 8.60', 3.10' @ 9.0' and estimated 3.63' deep when the lake is at 9.53'. When considering the 175 structures which were reasonably assumed to be for larger motor boats the depths averaged 3.15', 3.55', and 4.08' for each of the estimated lake levels, respectively. The District also incorporated optional docking areas which added depth to all docks. Notably from DLWID records from 2003 lake levels have been observed in which the lake level was "while under impoundment" was 8.66' in peak summer.

Aug 7, 2003

Managers Report

Lake Level/Fish Control Structure

The lake level on 7/1 was 9.24 feet. The level since has dropped to 8.66 feet.

Table 1. Dock structure statistics by classification at primary and optional mooring sites. Data are conservative based on the data do not fully represent docks with greater than 5' of depth, and sample data were rounded down to the next lowest 3" increment for any dock in which the data acquisition was less confidently obtained.

	Depth 1 @ 9.53'			Depth 1 @ 9.0'			Depth 1 @ 8.6'		
	ALL 393 Structures						Optional Docking area		
Mean	3.63	3.10	2.70		Mean	3.72	3.19	2.79	
Median	3.65	3.12	2.72		Median	3.84	3.31	2.91	
Mode	3.90	3.37	2.97		Mode	4.65	4.12	3.72	
StDev	1.17	1.17	1.17		St Dev	1.18	1.18	1.18	
	175 Motor Boat Structures (all are Jurisdictional)						Optional Docking area		
Mean	4.08	3.55	3.15		Mean	4.17	3.64	3.24	
Median	4.13	3.60	3.20		Median	4.15	3.62	3.22	
Mode	4.65	4.12	3.72		Mode	4.65	4.12	3.72	
StDev	1.00	1.00	1.00		St Dev	1.00	1.00	1.00	
	114 Small Craft Docks (Jurisdictional & Non)						Optional Docking area		
Mean	3.08	2.55	2.15		Mean	3.12	2.59	2.19	
Median	2.93	2.40	2.00		Median	3.01	2.48	2.08	
Mode	2.71	2.18	1.78		Mode	2.71	2.18	1.78	
StDev	1.22	1.22	1.22		St Dev	1.26	1.26	1.26	
	91 Small Craft Docks (Jurisdictional)						Optional Docking area		
Mean	3.27	2.74	2.34		Mean	3.32	2.79	2.39	
Median	3.15	2.62	2.22		Median	3.15	2.62	2.22	
Mode	2.71	2.18	1.78		Mode	2.71	2.18	1.78	
StDev	1.18	1.18	1.18		StDev	1.23	1.23	1.23	
	14 Piers (all are Jurisdictional)						Optional Docking area		
Mean	3.40	2.87	2.47		Mean	3.40	2.87	2.47	
Median	3.15	2.62	2.22		Median	3.15	2.62	2.22	
Mode	2.65	2.12	1.72		Mode	2.65	2.12	1.72	
StDev	0.97	0.97	0.97		StDev	0.97	0.97	0.97	

Table 2 show the percentages docks with depth greater than 3.00', but measurement again are conservative rounding down to nearest 3" increment, yet the calculations are based on three significant figures out to 3.00" which biases the number towards suggesting there are more properties which fall outside of the design depth of 3.00' than can truly be said by the measurement accuracy. Key to understand all of these data are the highly variable intents, designs and uses of all the private structures, which is unknowable.

Table 2. Dock structures by number and percent of total that have depths to the sediment of less than 3' based on lake levels of 9.53', 9.0', and 8.6'. Categorization done as All Structures, Motor Boat Docks, Small Craft Docks, and piers with further analysis shown for jurisdictional waters and optional docking areas where available. Docks with less than 3' of water does not necessarily preclude recreational access.

	# Structures, Depths <3'	% Structures of sample
All structures (393)		
All at 9.53', less than 3'	110	28%
All at 9.0, Less then 3'	171	44%
All at 8.6, less than 3.0'	228	58%
All structures (393)		
All at Option at 9.53', less than 3'	102	26%
All at Option at 9.0', less than 3'	160	41%
All at Option at 8.6', less than 3'	216	55%

	# Structures, Depths <3'	% Structures of sample
Motor Boat docks (175 Total)		
Motor 9.53'	24	14%
Motor 9.0'	50	29%
Motor 8.6'	78	45%
Motor 9.53' Option	20	11%
Motor 9.0' Option	44	25%
Motor 8.6' Option	71	41%
Motor 9.53' Jurisdictional	24	14%
Motor 9.0' Jurisdictional	50	29%
Motor 8.6' Jurisdictional	78	45%

	# Structures, Depths <3'	% Structures of sample
Small Craft Docks (114 total)		
Small 9.53'	57	50%
Small 9.0'	76	67%
Small 8.6'	87	76%
Small 9.53' Option	43	38%
Small 9.0' Option	30	26%
Small 8.6' Option	36	32%
Small 9.53' Jurisdictional	41	36%
Small 9.0' Option Jurisdictional	56	49%
Small 8.6' Option Jurisdictional	65	57%
Small 9.53' at Option & Jurisdictional	29	25%
Small 9.0' at Option & Jurisdictional	19	17%
Small 8.6' @ Option & Jurisdictional	24	21%

	# Structures, Depths <3'	% Structures of sample
Piers (14 total)		
Piers 9.53'	5	36%
Piers 9.0'	10	71%
Piers 8.6'	10	71%
Piers 9.53' Option	5	36%
Piers 9.0' Option	10	71%
Piers 8.6' Option	10	71%

One additional finding from the 2012 assessment was the number of structures identified pre impoundment. Of the 393 structures 60 to 90 or 1 in 4 to 1 in 6 were likely built post 1992, and therefore sometime possibly since the water rights were obtained. As such the vast number of structures are likely built with a natural lake level in mind, but were certainly built pre impoundment as aerial photography will attest.

Table 3. From aerial photograph analysis details of structures likely built post 1992.

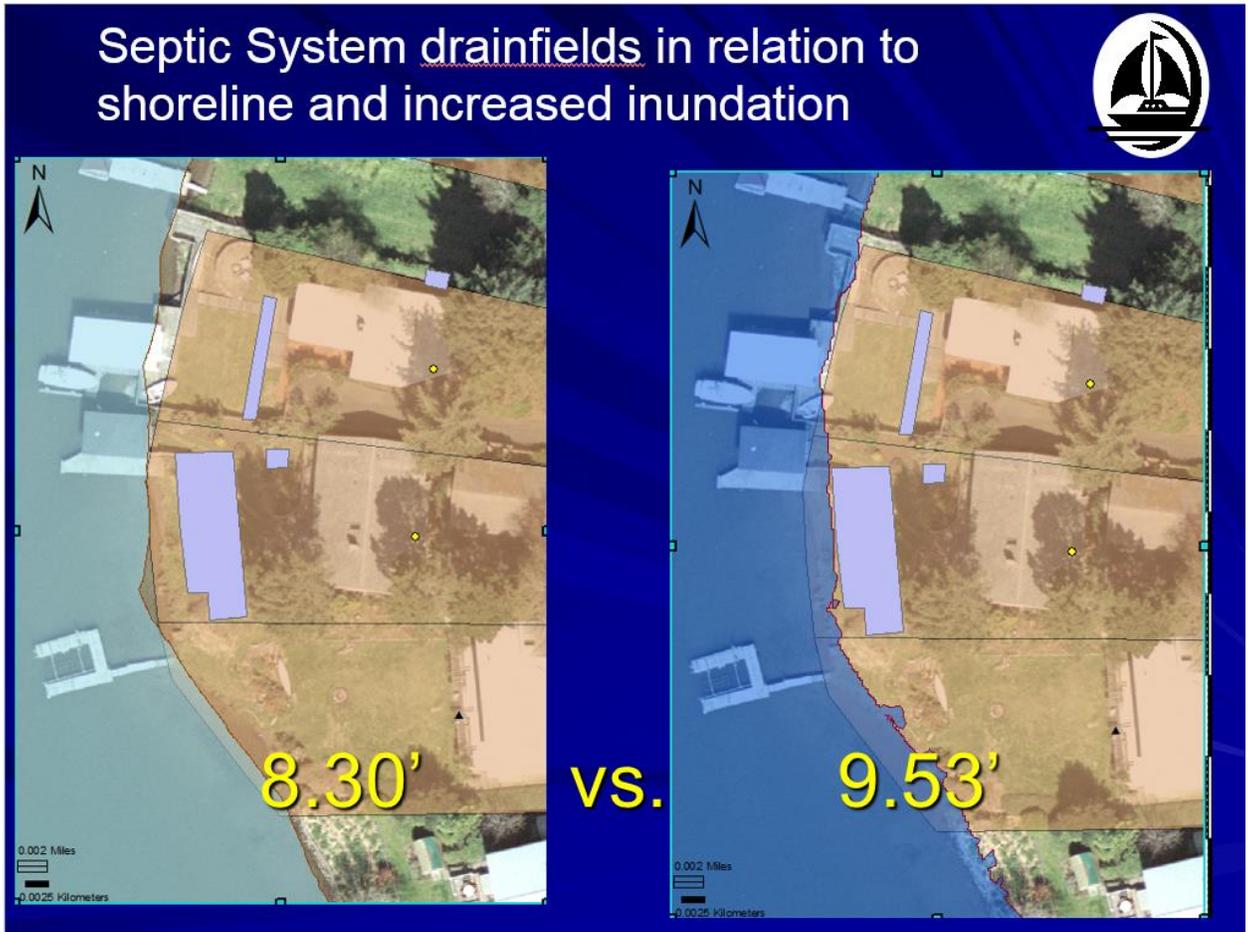
	# Structures, Depths <3'	% Structures of sample
Post 1992 at 9.53'	78	20%
Post 1992 at 9.0'	124	32%
Post 1992 at 8.6'	171	44%
Post 1992 at 9.53' MOTOR	16	9%
Post 1992 at 9.0' MOTOR	36	21%
Post 1992 at 8.6' MOTOR	56	32%
Post 1992 at 9.53' Small Craft	38	33%
Post 1992 at 9.0' Small Craft	51	45%
Post 1992 at 8.6' Small Craft	61	54%
Post 1992 at 9.53' Small Craft Juris	29	25%
Post 1992 at 9.0' Small Craft Juris	41	36%
Post 1992 at 8.6' Small Craft Juris	49	43%
Post 1992 at 9.53' PIER	2	14%
Post 1992 at 9.0' PIER	6	43%
Post 1992 at 8.6' PIER	6	43%

Details of septic systems and lake levels was covered in a very robust presentation and staff report from the previous DLWID Project Manager, Seth Lenaerts in 2012-12-13 and in other presentation on septics. The dam raises the saturation of soils, which occurs during peak use of many residences. Saturated soils reduce treatment effectiveness, and all of our native soils are all classified as very limited as suitable for septic systems. The biggest concern is likely the vast number of septic systems (1 in 3) that no record exists and that 1 in 2 are beyond the life expectancy or are undocumented leading to additional concerns of increasing the saturation zone by raising the lake level, particularly with drain fields that may already be feet away from the lake as in the comparison below of lake level at 8.30' vs. 9.53' and the drain field location shown in lavender color.

Distribution of Septic Systems
Devils Lake Watershed



- 685 septic systems in the Watershed
- 285 (42%) Border lake
- 104 (36%) No record
- 64 (23%) 20 years+
- At least 20 sand filters
- At least 10 ATT (Advanced Treatment Technology)



Lastly the riparian zone or shoreline was reviewed through a lake wide review of data collected during the Tetra Tech Shoreline Erosion Study and other historical data. Key to understanding shoreline response to inundation is maybe best represented by a photo from the D River bridge where the vegetation above 9.0' rebounded in the previously inundated zone of 9.53' from the years before. Wetland species growing along the shore are only capable of temporary (generally up to 2 weeks) worth of inundation, not summer long or year long. As a result vegetation is stunted or killed off in these saturated zones, as the plants are not evolutionarily equipped for the impacts of reservoir hydrology. Larger reservoirs (say Detroit Lake) exhibit much greater shorelines denuded of vegetation, but the same plays out on Devils Lake when the lake is artificially raised. Plants are adapted to growing towards the lake, stabilizing the shoreline in the summer, anticipating an erosive winter when they may get knocked back and there is less opportunity for photosynthesis.



- a. **The Devils Lake Plan:** A watershed based plan adopted by the Board in 2011 that seeks to address the root causes of nuisance aquatic vegetation and/or Harmful Algal blooms which are excessive nutrients.

Executive Summary excerpt:* “Devils Lake is a shallow, 680 acre coastal lake that has long suffered from the effects of inputs of excess nutrients. Most prominent of these effects was the domination of the lake by nuisance aquatic plants in the 1980’s. Aquatic weed infestations largely choked the lake covering over 60% of the surface. Recreation was greatly impacted, and property values were in decline. In 1984, a local government entity, Devils Lake Water Improvement District (DLWID), was formed with the purpose of improving water quality, improving the environment for fish and wildlife, and generally reestablishing beneficial uses, including safe navigation and public access.

“Current concerns in the watershed are ongoing inputs of nitrogen and phosphorus, increasing sedimentation, erosion, stormwater, annual cyanobacteria blooms, and the threat of the return of nuisance aquatic plants to the lake.”

*View the full document online: http://www.dlwid.org/Projects/Devils_Lake_Plan/Devils_Lake_Plan_v2.1.pdf

Projects within the scope of the plan are being worked on simultaneously and are listed on the Agenda and in this staff report as subheadings. Updates to the work on the projects are presented month to month as change happens and are left on the agenda until the project is complete. For a full background and all updates, please refer to previous staff reports and the Projects Page of the District’s Website under these headings: <http://www.dlwid.org/Projects.html>

i. Septic / Sewer

- <http://www.dlwid.org/Projects.html#Septics>
- <http://www.dlwid.org/Projects.html#Sewer>

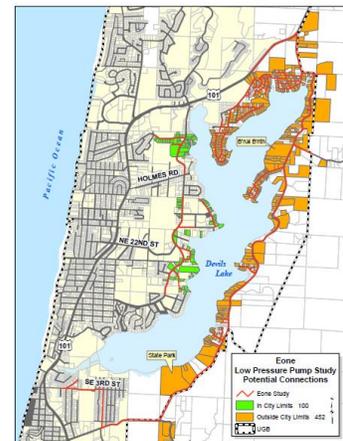
To Do and Pending Items:

- Mandatory Septic System Inspection Ordinance: Lincoln City
- Full buildable lands inventory: Lincoln County - Email from GIS Coordinator 2015-03-31, workload prohibits a timeline for anticipation of completion.
- Urban Growth Management Agreement: Lincoln City and Lincoln County, with FY 2014-2015, DLWID to provide comments to City
- Sewer Master Plan Update: Lincoln City – expected by April 2015
- Environmental Review of low pressure sewer backbone: City & DLWID expected by April 2015

Voyage LID: (Chair Green)

City of Lincoln City has continued a hearing on the Voyage Lake LID and Reimbursement District to Monday, March 9, 2015, 6pm meeting start time

Robertson: I have provided public comment and follow up written comment to the Voyage Lake LID. Next City Council Meeting is April 13, 2015, 6pm and it is expected to be on the agenda for council deliberation.



ii. Save our Shoreline (SOS)

- <http://www.dlwid.org/Projects.html#SOS>

1. Project agreement developed for project at north end of the lake. Complete shoreline restoration planned. DLWID \$750 match included in project.
2. Previous inquiry from last year reestablished and connected with Landscaper.
3. Other recently identified project moving forward per landowner.

iii. Vegetation Management

- <http://www.dlwid.org/Projects.html#Vegetation>

No Update

b. Communications Report

- Internet Streaming: Meetings the DLWID are now available for live streaming and/or recorded streaming on the internet. The internet feed can be accessed via the City's website: <http://www.lincolncity.org/> by clicking on Agenda, Packets & Video or from the following link: <http://lincolncityor.iqm2.com/citizens/default.aspx>
- Government Access Channel 4: The District's monthly meetings continue to be broadcast live and throughout the month repeatedly airs. This channel is available for Charter subscribers.
- Social Media: The District uses these social media components to reach the general public periodically.
 - YouTube: <http://www.youtube.com/user/DLWID>
 - Facebook: <https://www.facebook.com/DevilsLake.Oregon>
 - Twitter: https://twitter.com/Devils_Lake
- KBCH am 1400: The District has had a standing interview spot on the THIRD Tuesday of the Month from 7:30 – 8:00 am.
- 100 History of Devils Lake:
http://www.dlwid.org/Communications/Know_Your_Lake/100_Year_History.pdf
- Know Your Lake: The District, led by Chair Brian Green, has been publishing informational articles in the News Guard. The articles are meant to inform the public on the activities of the District. You can download copies of the articles from our website's Project Page: <http://www.dlwid.org/Projects.html>
- Devils Lake Radio 1610 am: Memory lost from possible power failure. Antenna repaired and broadcasting again. Update about Life Jacket Loan Station added. Additional audio updates to be added again once system stable. Tune in next time you are in Regatta Grounds or EDLSP.



- Clearwater E-Newsletter: Spring issue released in conjunction with equinox. <http://myemail.constantcontact.com/Clearwater-e-Newsletter--Spring-2015-edition.html?soid=1102761961457&aid=at52BELKxWA>
- Community Days & Lake Steward: to be awarded at Community Days Banquet – April 25, 2015 6pm. Also participating in many events throughout the week including Radio Days where we are sponsoring 30 sec ads read on KBCH 1400 am by local “celebrities”. Announcements will be used to promote the lake and DLWID programs (e.g. water quality monitoring, SOS), with proceeds going to charity. Tune in April 23, from 6 am to 4pm.
- Devils Lake Revival: Saturday, July 18th secured for the event at Regatta Grounds.
- Devils Lake "Birding by Boat": Awarding winning video presented at the Salem Audubon on March 10, to 50+ attendees. Video features interviews with Al Rice and Devils Lake Water District Manager Paul Robertson explaining the lake's ecology to paddlers on International Migratory Bird Day back in 2009. I attended per their request and was guest speaker following video.
- Sitka Kids Ecology Art Project: March 7, 10-12 - Participated in event at Lincoln City Cultural Center in accompaniment with Ian Keene, Open Space Coordinator, and SDCWC.
- Life Jacket Loaner Station: Ribbon cutting held March 20, 2015. Pretty good turnout considering the rain. Director Randy Weldon who spearhead the idea and did the leg works officially opening the station with Chamber Ambassador Sam Allen and Executive Director Nonni Augustine, and Councilor Susan Walkhe. Also in



attendance was Marianne McKenzie representative from Oregon State Marine Board her two kids on Spring Break, Randy’s daughter Brooke, City Councilor Noerikis,

DLWID Director Norris, the News Guard, and few others. Watch the News Guard Video highlighting the intrepid weather people were to come out in!

https://docs.google.com/file/d/0Bx_kOIQHdkSKY2NIakQyM1hDQkE/edit

- KCUP 1230 AM: Radio interview with Karen Richards. “What’s going on in Lincoln City” -- Tuesday March 24, 9-9:30 am
- Devils Lake Family Fishing Frenzy: Well attended event. Registered were 178 youth and another 140 family members. This was a big jump from the 104 youth and 84 adults last year. Families from all over (Philomath to Portland) in attendance and thus introduced to Devils Lake. Notable the Life Jacket Loaner Station got significant use as families took advantage of the new station during the event. DLWID assisted with traffic flow rerouting set up and break down as well as handled the permits for the event.



c. **Safety Report** (Robertson) No incidents or updates. Safety is no accident!

d. **MidCoast TMDL** (Robertson)

- <http://www.dlwid.org/Projects.html#TMDL>

Department of Environmental Quality (DEQ) has begun the planning process for developing an Implementation Ready - Total Maximum Daily Load (IR-TMDL) for 303(d) listed waterbodies in the Oregon Mid-Coast Basin. The initiation of this TMDL process has been a long-time in the works and the process itself will be lengthy stretching over the next 18 - 20 months. Devils Lake is listed for Weeds/Algae, Chlorophyll a and pH and Thompson Creek is listed for fecal coliforms, and thus as a local government we have been invited to participate. Notably, temperature listings are also proposed by EPA for the lake and one of its tributaries. Representatives from local, state and federal government, special districts, Tribal Nations, private industry, forestry, agriculture, conservation, NGOs, watershed councils, landowners, and others were also identified.

- Links to the DEQ’s website are posted below.
<http://www.deq.state.or.us/WQ/TMDLs/midcoast.htm>
<http://www.deq.state.or.us/WQ/TMDLs/midcoastLSAC.htm>

Stakeholder Meeting: No meetings since our last DLWID meeting. View the website for more information.

Bacteria Technical Working Group: Beach Water Quality data to be evaluated by May 1, 2015.

e. East Devils Lake Road: No additional updates

f. Harmful Algal Blooms: <http://www.dlwid.org/Projects.html#Aeration>

Aeration/Oxidation Project: Ongoing work into developing a direct appointment for the Aeration/Oxidation Project has been taking place. Update will be provided as may be available.