

HORSESHOE LAKE MANAGEMENT COMMITTEE AGENDA

5:00 P.M. - THURSDAY, FEBRUARY 12, 2015

Woodland Police Station - Council Chambers
200 East Scott Avenue
Woodland, WA 98674

- I. Call to Order
- II. Approval of **Minutes for October 9, 2014** (November, December, January cancelled)
- III. Continued Business
 - A. Goals & Priorities
 - Grant Opportunities
 - DOE Water Quality Grant**
 - Milfoil Eradication
 - 2014 Carp Purchase**
 - Pollution Control
 - B. Water Quality Testing
 - **Water Quality Testing Graphs**
 - C. Pump & Lake Update
 - **Lake/River Tracking Report - Nov 2014, Dec 2014, & Jan-Feb Comparisons**
 - D. Committee Vacancy
 - E. 2015 Budget
- IV. New Business
 - A. **Goals & Priorities Review**
- V. Other
- VI. Adjourn - Next Meeting March 12, 2015 at 5:00 P.M.

CITY OF WOODLAND
HORSESHOE LAKE COMMITTEE MINUTES
OCTOBER 9, 2014

The regular meeting of the Horseshoe Lake Management Committee (HSLMC) was held on the above date, at the Woodland Police Station - Council Chambers, 200 East Scott Avenue, Woodland, WA 98674.

Chairman Tom Golik called the meeting to order at approximately 5:07 p.m. Roll call found the following:

COMMITTEE MEMBERS:

Tom Golik, Chairman
Mike Curry
Bill Dunlap (Absent)
Terry Jones
Francis Patnode (Absent)
Pat Rychel
Neil Van Horn
VACANCY

MAYOR/COUNCIL/OTHER:

Scott Perry, Councilmember

STAFF:

Jody Bartkowski, Engineering Technician

MINUTES

The September 11, 2014 minutes were approved.

CONTINUED BUSINESS

A. Goals and Priorities. The following items were discussed:

Weed (Milfoil) Eradication. Councilmember Perry updated the Committee on progress towards purchasing grass carp. Open discussion was held. The Committee agreed to continue Lake testing throughout the winter as long as a boat was available and to request follow-up information from Stacie Kelsey, Washington State Department of Fish & Wildlife (WDFW) regarding chemical applications.

Grant Opportunities. Discussion ensued regarding the September presentation by Cowlitz County. Staff reported that the agreement was reviewed and submitted. Further discussion was held regarding involvement by WDFW, testing procedures at Silver Lake, and writing of the Quality Assurance Project Plan (QAPP).

Pollution Control. Discussion was held regarding the need to continue research started by Walt Church.

B. Pump and Lake Update. Discussion was held regarding the Public Works Director's e-mails with the Washington State Department of Transportation (WSDOT), existing permits, screen conditions, benefits of continuing talk with WSDOT, benefits of increasing River depth, the 1950's letter requiring WSDOT to prevent stagnation, and pursuing the need to clear out weed growth.

C. Water Quality & Sampling. Staff reported that September test results have not been

received. Committee members discussed the appearance of an algae bloom in the mornings that appears to blow off by afternoon.

NEW BUSINESS

- A. Rules and guidelines for holding or cancelling a meeting.** Chair Golik introduced the topic and called for discussion. A decision was made to continue with monthly meetings unless a situation arises requiring cancellation.
- B. Vacancy.** Chair Golik announced that Walt Church submitted his resignation. Discussion ensued regarding Walt’s service and years dedication, the number of committee members, and the possibility of leaving the position vacant. The vacancy will be advertised with the goal of finding a replacement beginning in January.
- C. 2015 Budget.** Councilmember Perry requested budget input to present to City Council. Discussion was held regarding handicapped fishing docks, an ADA approved example by Topper Floats, docks at Draino and Cress Lakes, the type being used by WDFW, grants, and requesting bids for cost estimates. A determination was made to propose \$7,500 to be used for carp in an attempt to decrease milfoil and for testing not covered by the new DOE grant.

ADJOURNMENT

The meeting was adjourned at approximately 6:20 p.m. The next regular meeting will be held Thursday, November 13, 2014, at 5:00 p.m. at the Woodland Police Station - Council Chambers, 200 East Scott Avenue, Woodland WA 98674.

Tom Golik - Chairman

Date

Jody Bartkowski - Secretary

Date



Agreement WQC-2015-CwCoHH-00129

Water Quality Combined Financial Assistance AGREEMENT BETWEEN THE
STATE OF WASHINGTON DEPARTMENT OF ECOLOGY AND
THE COWLITZ COUNTY HEALTH AND HUMAN SERVICES
DEPARTMENT

This is a binding Agreement entered into by and between the State of Washington, Department of Ecology, hereinafter referred to as "ECOLOGY" and Cowlitz County Health and Human Services Department, hereinafter referred to as the "RECIPIENT" to carry out with the provided funds activities described herein.

GENERAL INFORMATION

Project Title: Water Quality Testing & Improvement at Two
Cowlitz County Lakes

Agreement No: WQC-2015-CwCoHH-00129
Project Title: Water Quality Testing & Improvement at Two Cowlitz County Lakes
Recipient Name: Cowlitz County Health and Human Services Department

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Total Cost: \$143,028
Total Eligible Cost: \$143,028
Ecology Share: \$107,271
Recipient Share: \$35,757.00
The Effective Date of this Agreement is: 07/01/2014
The Expiration Date of this Agreement is no later than 07/01/2016
Project Type: Nonpoint Source Activity

Comment [Ukr1]: Season, please verify this is still a good start date

Project Short Description:

This project will provide the data necessary to evaluate the health of two major lakes in Cowlitz County, and to plan long-term actions by both the communities.

Project Long Description:

The project will create a reliable data bank in a format that is useable by water quality professionals for later analysis and making long-term mitigation, education and restoration efforts. RECIPIENT will engage the public in the process together with all of the interested Agencies, and thereby establish experience and positive inertia for developing a continuing lake management plan for both lakes.

Overall Goal:

The long-term project goal is to improve the natural quality of both major lakes in Cowlitz County for the public's health and recreational benefit, minimizing the health risks posed by toxic algae growth events and controlling non-native noxious weeds that limit the recreational potential of each lake. Noting that maintaining lake health must be a continuous process, the immediate goal of this project is to provide the data and site-specific experience necessary to plan, execute and evaluate continuous improvement actions. The plan also includes the addition of site-specific supporting data (e.g. rainfall, lake level, outflow) plus the coordination of toxic algae testing and other results. The process and training developed for both lakes, and all data collected, will be publicly available via a web site and blog.

Agreement No: WQC-2015-CwCoHH-00129
Project Title: Water Quality Testing & Improvement at Two Cowlitz County Lakes
Recipient Name: Cowlitz County Health and Human Services Department

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RECIPIENT INFORMATION

Organization Name: Cowlitz County Health and Human Services Department

Federal Tax ID: 91-6001310

DUNS Number: 081967292

Mailing Address: 900 Ocean Beach Hwy, Suite 1-B
Longview, Washington, 98632

Physical Address: 900 Ocean Beach Highway
Suite 1-B

Organization Email: harrisonc@co.cowlitz.wa.us

Contacts	
Project Manager	Season Long Environmental Health Specialist 2 207 Fourth Ave North Kelso, Washington, 98626 Email: long.season-season@co.cowlitz.wa.us Phone: (360) 577-3052
Billing Contact	Carole Harrison Administrative Manager 900 Ocean Beach Hwy, Suite 1-B Longview, Washington, 98632 Email: harrisonc@co.cowlitz.wa.us Phone: (360) 414-4499
Authorized Signatory	Carole Harrison Administrative Manager 900 Ocean Beach Hwy, Suite 1-B Longview, Washington, 98632 Email: harrisonc@co.cowlitz.wa.us Phone: (360) 414-4499

Agreement No: WQC-2015-CwCoHH-00129
Project Title: Water Quality Testing & Improvement at Two Cowlitz County Lakes
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ECOLOGY INFORMATION

Mailing Address: Department of Ecology
Water Quality
PO BOX 47600
Olympia, WA 98504-7600

Physical Address: Water Quality
300 Desmond Drive
Lacey, WA 98503

Contacts

Project Manager	Tammy Riddell Washington State Dept. of Ecology Southwest Regional Office PO Box 47775 Olympia, WA 98504-7775 Email: tammy.riddell@ecy.wa.gov Phone: 360-407-6295
Financial Manager	Laurie Webster Washington State Dept. Of Ecology Water Quality Program PO Box 47600 Olympia, WA 98504-7600 Email: laurie.webster@ecy.wa.gov Phone: 360-470-6542

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BUDGET

Funding Distribution

Funding Title: Centennial
Funding Effective Date: 7/1/2014
Funding Source: Centennial SFY 2015
Funding Type: Grant
Funding Expiration Date:
Recipient Match %: 25
InKind Interlocal Allowed: Yes
InKind Other Allowed: Yes
Is this Funding Distribution used to match a federal grant?
No

Agreement No: WQC-2015-CwCoHH-00129
 Project Title: Water Quality Testing & Improvement at Two Cowlitz County Lakes
 Recipient Name: Cowlitz County Health and Human Services Department

SCOPE OF WORK

Task Number: 1 Task Cost: \$28,392.00

Task Title: Project Administration/Management

Task Description:

A. The RECIPIENT will administer the project. Responsibilities will include, but not be limited to: maintenance of project records; submittal of requests for reimbursement and corresponding backup documentation, progress reports and recipient closeout report (including photos); compliance with applicable procurement, contracting, and interlocal agreement requirements; application for, receipt of, and compliance with all required permits, licenses, easements, or property rights necessary for the project; and submittal of required performance items.

B. The RECIPIENT must manage the project. Efforts will include: conducting, coordinating, and scheduling project activities and assuring quality control. Every effort will be made to maintain effective communication with the RECIPIENT's designees; ECOLOGY; all affected local, state, or federal jurisdictions; and any interested individuals or groups. The RECIPIENT must carry out this project in accordance with any completion dates outlined in this agreement.

Task Goal Statement:

Properly managed project that meets agreement and ECOLOGY's administrative requirements.
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Task Expected Outcome:

- * Timely and complete submittal of requests for reimbursement, quarterly progress reports and recipient closeout report.
- * Properly maintained project documentation

Recipient Task Coordinator: Season Long

Project Administration/Management

Deliverables

Number	Description	Due Date
1.1	Progress Reports	
1.2	Recipient Draft Closeout Report	Insert expiration date
1.3	Project Final Report	Insert expiration date

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Task Number: 2 Task Cost: \$114,636

Task Title: Water Laboratory Sampling and Testing

Task Description:

Prior to initiating water quality monitoring activities, the RECIPIENT must prepare a Quality Assurance Project Plan (QAPP). The QAPP must follow ECOLOGY's guidelines. The RECIPIENT must submit the QAPP to ECOLOGY's Project Manager for review, comment and approval before starting the environmental monitoring activities.

The RECIPIENT will conduct monitoring following the ECOLOGY approved QAPP.

RECIPIENT will submit samples to the accredited lab. Once the data is received back from the lab, the RECIPIENT will catalog results and make the data available to the public on the Internet via a community web site and Blog.

The RECIPIENT will submit all data to ECOLOGY using the Environmental Information Management System (EIM) once per year at the end of each full year of sampling.

The RECIPIENT will compile a report summarizing the results of the data and submit to ECOLOGY's Project Manager.

The following equipment will be eligible for purchase through this project: Hydro Lab; Secchi Disc, and Water Jar Sampler. The total cost of all equipment purchased under this project will not exceed \$12,900.00. Changes in equipment type must have prior approval from ECOLOGY's Project Manager.

The laboratory and in-situ tests are proposed to be monthly from October through-May, and bi-monthly in June, July, August, and September. Additional data will be recorded on at least a weekly basis for rainfall, water temperature at-depth, and lake outflow. During the summer months, Toxic Algae testing is proposed to be conducted on a weekly basis for four Silver Lake sites and two Horseshoe Lake sites.

Task Goal Statement:

The primary goal of the monitoring is to provide a reliable data bank with a reasonable number of data points water quality scientists and engineers can use to evaluate the health of Silver Lake and Horseshoe Lake and can plan long-term actions by both lake communities and their government agencies to improve water quality.

A secondary goal of performing the sampling using community volunteers, and making the data publicly available, is to inform both local citizens and other lake users. Meeting this goal will lead to an increase in visibility of lake water quality, and encourage a local discussion and understanding of how individuals can have a positive effect, such as maintaining their septic systems, minimizing the incursion of fertilizers and grass clippings, controlling non-native plants, managing water inflows and outflows, and boating carefully.

The primary goal of adding water temperature and flow data to the performed testing is to allow future estimating of the lake flushing and filling cycles, and to possibly correlate water inflows with changes in water quality. Algae blooms that occur along the shoreline after periods of heavy rain could indicate nutrients added to the lake via groundwater, while algae blooms across the lake after periods of wind could indicate nutrients being mixed into the lake water from the sediment bottom.

Task Expected Outcome:

Water quality monitoring following an approved QAPP will be conducted on Silver Lake and Horseshoe Lake over a two year period. The data will be cataloged, made available to the public, and submitted to ECOLOGY through

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 Project Title: Water Quality Testing & Improvement at Two Cowlitz County Lakes
 Recipient Name: Cowlitz County Health and Human Services Department
 the EIM database. A numerical and trending analysis of the data will be completed.

Water Quality Monitoring

Deliverables

Number	Description	Due Date
2.1	Complete a QAPP for ECOLOGY review and approval.	
2.2	Complete water quality monitoring following ECOLOGY approved QAPP.	
2.3	Submit water quality monitoring data to ECOLOGY through EIM.	
2.4	Make data available to the public, on the Internet via a community web site and Blog .	
2.5	Complete a numerical and trending analysis of the data and submit it to ECOLOGY's Project Manager.	

Comment [tkr2]: Season, we need to get an approximate timeline for submittal of draft QAPP

Comment [tkr3]: Twice a year at end of sampling year, can you provide dates?

Comment [tkr4]: Add in expiration date

Comment [tkr5]: Add in expiration date

Funding Distribution Summary

Recipient / Ecology Share

Funding Distribution Name	Recipient Match %	Recipient Share	Ecology Share	Total
Total	25%	\$35,757	\$107,271	\$143,028

AGREEMENT SPECIFIC TERMS AND CONDITIONS

N/A

SPECIAL TERMS AND CONDITIONS

N/A

SECTION 1: DEFINITIONS

Unless otherwise provided, the following terms will have the respective meanings for all purposes of this agreement: "Administration Charge" means a charge established in accordance with Chapter 90.50A RCW and Chapter 173-98 WAC, to be used to pay Ecology's cost to administer the State Revolving Fund by placing a percentage of the interest earned in an Administrative Charge Account.

"Administrative Requirements" means the effective edition of ECOLOGY's ADMINISTRATIVE
 WQC-2015-CwCoHH-00129

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REQUIREMENTS FOR RECIPIENTS OF ECOLOGY GRANTS AND LOANS at the signing of this loan.

“Annual Debt Service” for any calendar year means for any applicable bonds or loans including the loan, all interest plus all principal due on such bonds or loans in such year.

“Average Annual Debt Service” means, at the time of calculation, the sum of the Annual Debt Service for the remaining years of the loan to the last scheduled maturity of the loan divided by the number of those years.

“Centennial Clean Water Program” means the state program funded from various state sources.

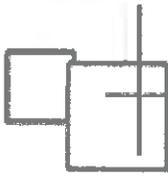
“Contract Documents” means the contract between the RECIPIENT and the construction contractor for construction of the project.

“Cost Effective Analysis” means a comparison of the relative cost-efficiencies of two or more potential ways of solving a water quality problem as described in Chapter 173-98-730 WAC.

“Defease” or “Defeasance” means the setting aside in escrow or other special fund or account of sufficient investments and money dedicated to pay all principal of and interest on all or a portion of an obligation as it comes due.

“Effective Date” means the earliest date on which eligible costs may be incurred.

“Effective Interest Rate” means the total interest rate established by Ecology that includes the Administrative Charge.



Account Activity

Reference	Vendor Name	Fiscal Description	Date	Amount	Number
Transaction Notes		Detail Notes		Relationship	
101-000-000-576-80-49-20	Horseshoe Lake Management				
Budget					
2014 - BA Ordinance No. 1311		2014		\$5,335.00	
					COA Detail
Total Budget				\$5,335.00	
Invoice					
18932	BSK Associates	2014 - June - First Half	5/31/2014	\$351.75	<u>46557</u>
Horseshoe Lake Testing		05/08/14			COA Detail
V140014	BSK Associates	2014 - June - Second Half	6/20/2014	\$351.75	<u>46612</u>
06/04/2014- 4 Qtray & 5 Phosphorus		Changed Coding 07/14/2014			COA Detail
V140215	BSK Associates	2014 - July - Second Half	7/16/2014	\$351.75	<u>46757</u>
07/02/14					COA Detail
V140454	BSK Associates	2014 - August - Second	8/20/2014	\$351.75	<u>46869</u>
08/13/14 Water Samples					COA Detail
Total Invoice				\$1,407.00	
Total 101-000-000-576-80-49-20		Budget	\$5,335.00	Actual	\$1,407.00

Tested

5/8	1
6/4	2
7/2	3
8/13	4
9/19	5
10/17	6
11/26	7
12/12	8

$\$351.75 \times 8 = \2814.00

\$2,186.00

< \$300.00 >
test kits =

\$1,886.00
FOR CARRP

101 576 80 49 20



Opaline Aqua Farm LLC
8847 Fish Pond Lane
Owens Hot Springs
Idaho 83441

586461

CUSTOMER'S ORDER NO.		DEPARTMENT		DATE	
				DEC 8 2014	
NAME City of Woodlana					
ADDRESS					
CITY, STATE, ZIP WOODLANA WA.					
SOLD BY		CASH	C.O.D.	CHARGE	ON ACCT.
QUANTITY	DESCRIPTION			PRICE	AMOUNT
1	80	14" TRIPLEX GRASS		25 ⁰⁰	2000 ⁰⁰
2		CAP			
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15		DELIVERY			100 ⁰⁰
16					
17					
18					2100 ⁰⁰
RECEIVED BY					

KEEP THIS SLIP FOR REFERENCE

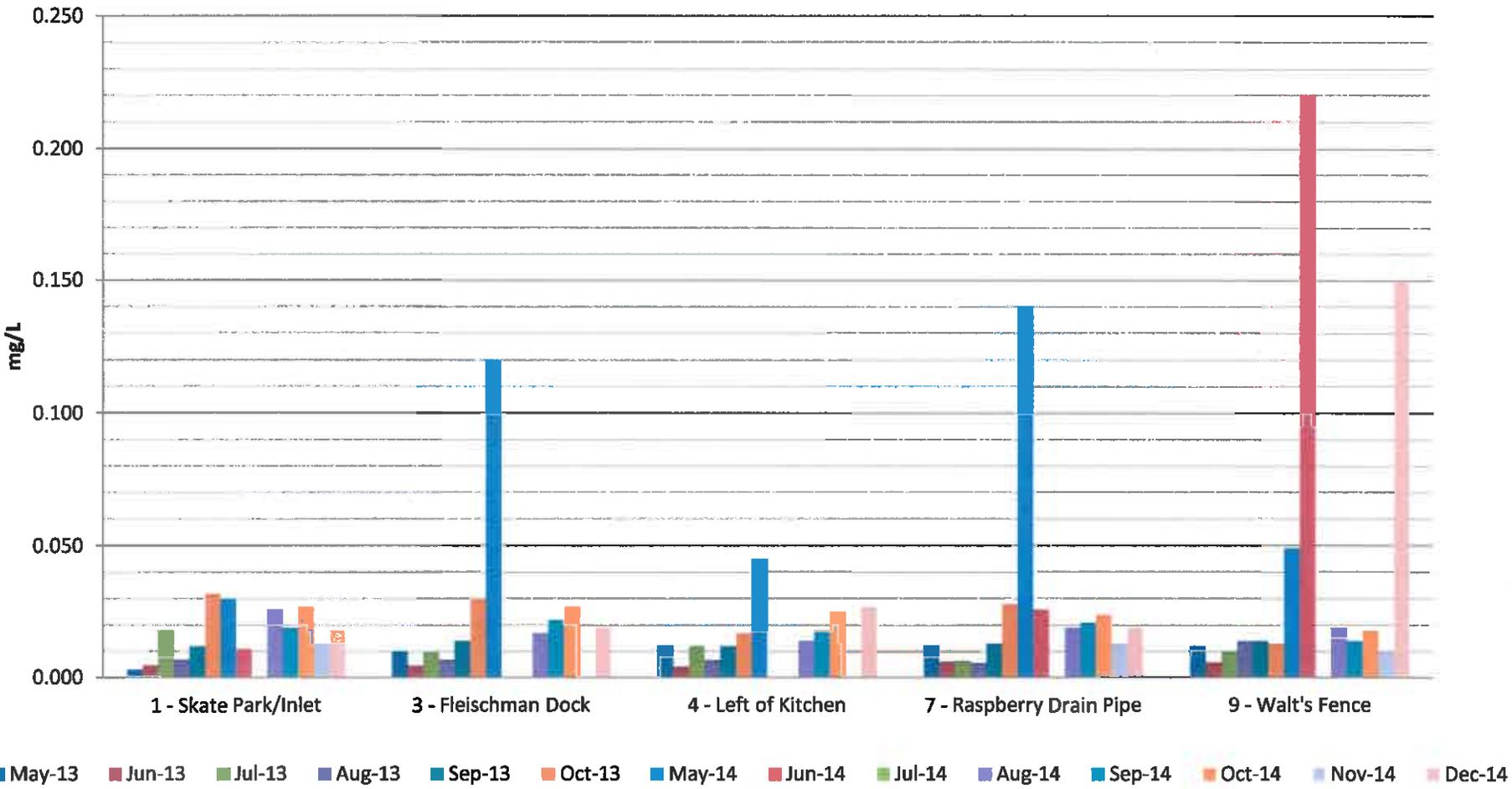
Bart Stepp 12/10/14 gms

Horseshoe Lake
Addy Lab Tests - Phosphorus

	1 - Skate Park/Inlet	3 - Fleischman Dock	4 - Left of Kitchen	7 - Raspberry Drain Pipe	9 - Walt's Fence
Aug-12	0.012	0.013	0.011	0.013	0.014
Sep-12	0.009	0.008	0.008	0.006	0.008
Oct-12	0.034	0.030	0.030	0.017	0.026
Dec-12	0.027	0.019	0.015	0.019	0.012
Jan-13	ND	0.004	0.005	0.002	ND
Feb-13	0.002	0.006	ND	ND	ND
Mar-13	0.003	0.004	0.005	0.005	0.009
Apr-13	0.009	0.011	0.011	0.010	0.014
May-13	0.003	0.010	0.012	0.012	0.012
Jun-13	0.005	0.005	0.004	0.006	0.006
Jul-13	0.018	0.010	0.012	0.006	0.010
Aug-13	0.007	0.007	0.007	0.006	0.014
Sep-13	0.012	0.014	0.012	0.013	0.014
Oct-13	0.032	0.030	0.017	0.028	0.013
May-14	0.03	0.120	0.045	0.140	0.049
Jun-14	0.011	ND	ND	0.026	0.220
Jul-14	ND	ND	ND	ND	ND
Aug-14	0.026	0.017	0.014	0.019	0.019
Sep-14	0.019	0.022	0.018	0.021	0.014
Oct-14	0.027	0.027	0.025	0.024	0.018
Nov-14	0.013	ND	ND	0.013	0.01
Dec-14	0.018	0.019	0.027	0.019	0.15

Units mg/L

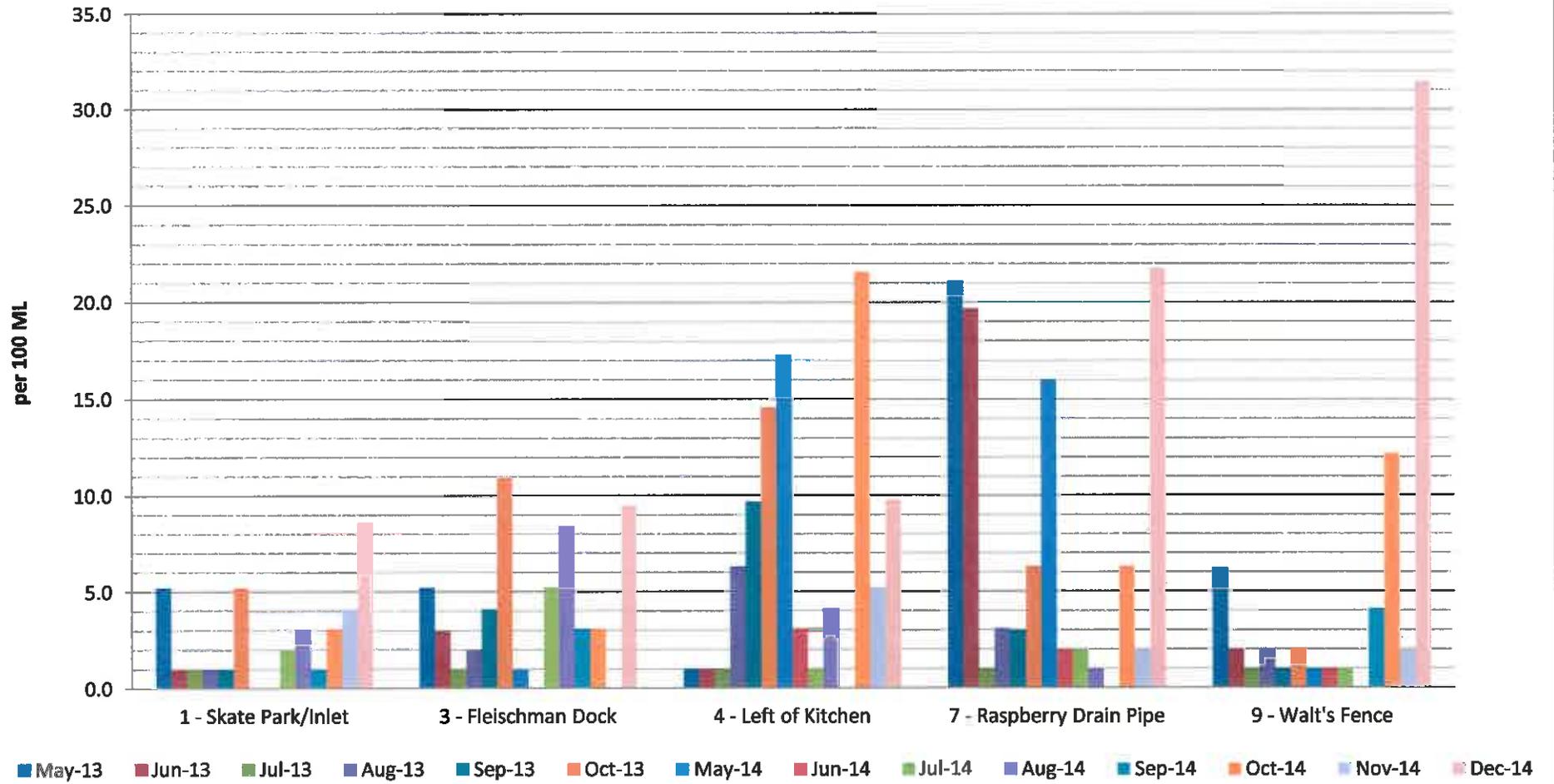
Horseshoe Lake Addy Lab Test Results Phosphorus



**Horseshoe Lake
Addy Lab Tests - E. Coli**

	1 - Skate Park/Inlet	3 - Fleischman Dock	4 - Left of Kitchen	7 - Raspberry Drain Pipe	9 - Walt's Fence
Feb-13	0.0	0.0	3.1	8.4	9.8
Mar-13	1.0	0.0	2.0	1.0	0.0
Apr-13	0.0	0.0	1.0	0.0	1.0
May-13	5.2	5.2	1.0	21.1	6.2
Jun-13	1.0	3.0	1.0	19.7	2.0
Jul-13	1.0	1.0	1.0	1.0	1.0
Aug-13	1.0	2.0	6.3	3.1	2.0
Sep-13	1.0	4.1	9.7	3.0	1.0
Oct-13	5.2	11.0	14.6	6.3	2.0
May-14	0.0	1.0	17.3	16.0	1.0
Jun-14	0.0	0.0	3.1	2.0	1.0
Jul-14	2.0	5.2	1.0	2.0	1.0
Aug-14	3.0	8.4	4.1	1.0	0.0
Sep-14	1.0	3.1	0.0	0.0	4.1
Oct-14	3.1	3.1	21.6	6.3	12.2
Nov-14	4.1	0.0	5.2	2.0	2.0
Dec-14	8.6	9.5	9.8	21.8	31.5

Horseshoe Lake Addy Lab Test Results E. Coli



**HORSESHOE LAKE TRACKING
2014**

Date	River Level 8:00 AM	Days High Temp	Lake			Valve Status (Turns Open)	Pump (GPM)	Comments
			Level	Temp	Visibility			
1-Nov-14	13.53	55°	-30	58°	6'	Closed		
2-Nov-14	13.36	53°				Closed		
3-Nov-14	12.04	56°				Closed	3,421	
4-Nov-14	13.64	58°				Closed		
5-Nov-14	13.21	59°				Closed		
6-Nov-14	12.86	61°				Closed		
7-Nov-14	13.06	61°				Closed		
8-Nov-14	11.48	59°				Closed		Level projected.
9-Nov-14	11.55	59°				Closed		Level projected.
10-Nov-14	12.84	54°				Closed	3,016	
11-Nov-14	12.68	58°				Closed		
12-Nov-14	12.57	48°				Closed		
13-Nov-14	11.35	43°				Closed		
14-Nov-14	9.74	39°				Closed		
15-Nov-14	9.72	47°				Closed		COLD - low 25.
16-Nov-14	9.48	48°				Closed		COLD - low 26.
17-Nov-14	9.47	48°				Closed		
18-Nov-14	9.36	43°				Closed	2,713	
19-Nov-14	9.10	50°				Closed		
20-Nov-14	8.96	46°				Closed		
21-Nov-14	10.73	42°				Closed	2,574	
22-Nov-14	11.06	49°				Closed		
23-Nov-14	11.34	51°	-20	45°	6'	Closed		
24-Nov-14	11.41	51°				Closed	2,830	
25-Nov-14	10.51	59°				Closed		
26-Nov-14	11.29	62°				Closed	2,586	Tested water quality (LOTS OF ALGAE).
27-Nov-14	10.63	62°				Closed		Level projected.
28-Nov-14	13.67	55°				Closed		
29-Nov-14	16.00	43°				Closed		
30-Nov-14	16.06	42°	-18	43°	6'	Closed		COLD - low 25.

**HORSESHOE LAKE TRACKING
2014**

Date	River Level 8:00 AM	Days High Temp	Lake			Valve Status (Turns Open)	Pump (GPM)	Comments
			Level	Temp	Visibility			
1-Dec-14	14.04	40°				Closed	3,547	
2-Dec-14	13.75	44°				Closed		
3-Dec-14	12.28	49°				Closed		
4-Dec-14	13.18	40°				Closed		
5-Dec-14	13.46	46°				Closed	3,491	
6-Dec-14	13.67	53°				Closed		
7-Dec-14	13.90	51°	-14	42°	8'	Closed		
8-Dec-14	13.83	50°				Closed	3,250	Screens cleaned.
9-Dec-14	13.75	58°				Closed		
10-Dec-14	13.91	63°				Closed		
11-Dec-14	13.10	62°				Closed		
12-Dec-14	14.00	54°				Closed		Level projected; tested water quality.
13-Dec-14	12.00	45°				Closed		
14-Dec-14	11.51	54°				Closed		
15-Dec-14	10.79	52°	-8	42°	8'	Closed	2,921	
16-Dec-14	10.41	51°				Closed		
17-Dec-14	10.28	47°				Closed		
18-Dec-14	10.68	48°				Closed	3,234	
19-Dec-14	9.80	51°				Closed		Level projected.
20-Dec-14	9.77	56°				Closed		Level projected.
21-Dec-14	10.38	56°				Closed		Level projected.
22-Dec-14	11.20	52°	-4	42°	8	Closed		Level projected.
23-Dec-14	12.78	49°				Closed		Level projected.
24-Dec-14		48°				Closed		
25-Dec-14		47°				Closed		
26-Dec-14		45°				Closed	3,712	
27-Dec-14		44°				Closed		
28-Dec-14		45°	2	42°	8	Closed		Time to open the valve!
29-Dec-14		46°				20	3,650	
30-Dec-14		37°				20		
31-Dec-14		39°				20		

HORSESHOE LAKE TRACKING 2015

Date	River Level 8:00 AM	Days High Temp	24-Hr Rainfall	Lake			Valve Status (Turns Open)	Pump (GPM)	Comments
				Level	Temp	Visibility			
1-Jan-15		39°	0.00				20		
2-Jan-15		38°	0.00				20	3,857	
3-Jan-15		42°	0.00				20		
4-Jan-15		50°	1.00	0	42°	8'	20		
5-Jan-15		53°	0.15				20	3,640	
6-Jan-15		45°	0.01				20		
7-Jan-15		45°	0.01				20		
8-Jan-15		40°	0.00				20		
9-Jan-15		48°	0.00				20	4,121	
10-Jan-15	13.74	43°	0.02				20		
11-Jan-15	11.75	44°	0.08				20		
12-Jan-15	11.70	49°	0.01	0	40°	8'	20	-	Mike-R'p'd Green stuff floating on top. Rec'd Complaint-Bart investigated green stuff at beach-not due to oil/grease or residue from local seeding. Algae cloud.
13-Jan-15	11.41	52°	0.00				30	3,161	Screens cleaned.
14-Jan-15	11.21	51°	0.01				30		
15-Jan-15	11.09	43°	0.62				30		
16-Jan-15	12.05	52°	0.02				Fully Open	3,957	
17-Jan-15	12.46	58°	1.28				Fully Open		
18-Jan-15	12.86	57°	0.23				Fully Open		
19-Jan-15	13.59	50°	0.00				Fully Open		
20-Jan-15	13.91	46°	0.00				Fully Open	4,279	PW requested pump be turned off.
21-Jan-15	13.75	48°	0.00				Fully Open	Off	
22-Jan-15	13.79	47°	0.00				Fully Open	Off	
23-Jan-15	13.36	46°	0.18				Fully Open	Off	
24-Jan-15	13.01	62°	0.03	-2	40°	9'	1/2 Open	Off	
25-Jan-15	12.71	49°	0.02				1/2 Open	Off	
26-Jan-15	12.47	51°	0.01				1/2 Open	Off	
27-Jan-15	12.44	48°	0.10				1/2 Open	Off	
28-Jan-15	11.91	56°	0.00				1/2 Open	Off	
29-Jan-15	11.60	54°	0.00				Closed	Off	
30-Jan-15	11.29	50°	0.01	-10	40°	9'	Closed	Off	
31-Jan-15	11.16	45°	0.00				Closed	Off	
1-Feb-15	11.14	46°	0.16				Closed	Off	
2-Feb-15	11.39	55°	0.38				Closed	Off	
3-Feb-15	11.80	51°	0.13				Closed	Off	
4-Feb-15	12.48	52°	0.09				Closed	Off	
5-Feb-15	12.77						Closed	Off	
6-Feb-15	12.84								Projected.
7-Feb-15	13.33								Projected.
8-Feb-15	14.28								Projected.
9-Feb-15	15.13								Projected.
10-Feb-15	15.09								Projected.
11-Feb-15							Closed		

HORSESHOE LAKE TRACKING

2014

Date	River Level 8:00 AM	Days High Temp	24-Hr Rainfall	Lake			Valve Status (Turns Open)	Pump (GPM)	Comments
				Level	Temp	Visibility			
1-Jan-14		43°		-8	45°	10'	Closed		
2-Jan-14		48°					Closed		
3-Jan-14		44°					Closed		
4-Jan-14		45°					Closed		
5-Jan-14	9.18	46°					Closed		
6-Jan-14	9.13	43°					Closed	3,222	
7-Jan-14	10.17	45°					Closed		
8-Jan-14		51°					Closed		
9-Jan-14		47°					Closed		
10-Jan-14	12.30	55°					Closed	3,193	
11-Jan-14	12.25	56°					Closed		
12-Jan-14	11.79	50°					Closed		
13-Jan-14	12.41	52°		-10	44°	10-11'	Closed	3,642	
14-Jan-14	15.86	47°					Closed		
15-Jan-14	13.94	44°					Closed		
16-Jan-14	12.43	43°					Closed		
17-Jan-14		38°					Closed		
18-Jan-14	10.97	48°					Closed		
19-Jan-14		47°					Closed		
20-Jan-14		50°					Closed		
21-Jan-14		46°		-10	44°	10'	Closed		
22-Jan-14		48°					Closed		
23-Jan-14		56°					Closed		
24-Jan-14		52°					Closed	2,581	
25-Jan-14		48°		-10	43°	10'	Closed		
26-Jan-14	9.81	49°					Closed		
27-Jan-14	9.77	41°					Closed	2,957	
28-Jan-14	10.81	43°					Closed		
29-Jan-14	11.73	52°					Closed		
30-Jan-14	12.12	47°					Closed		
31-Jan-14	11.05	46°					Closed	3,287	
1-Feb-14	12.16	50°					Closed		
2-Feb-14	10.67	45°					Closed		
3-Feb-14	10.62	44°					Closed	2,965	
4-Feb-14	10.25	39°					Closed		
5-Feb-14	10.02	30°					Closed		
6-Feb-14	9.69	24°					Closed		
7-Feb-14	9.72	30°					Closed		
8-Feb-14	9.71	33°					Closed		
9-Feb-14	10.60	33°					Closed		
10-Feb-14	10.81	41°		-7	44°	10'	Closed		Do NOT close the valve yet!
11-Feb-14	10.92	49°					Closed		

**HORSESHOE LAKE MANAGEMENT COMMITTEE
GOALS & PRIORITIES
MARCH 2012**

ITEM	MEMBER #1	MEMBER #2	MEMBER #3	MEMBER #4	MEMBER #5	MEMBER #6	MEMBER #7	MEMBER #8	MEMBER #9	AVERAGE
Pump repairs by WSDOT	1	1	1	1	1	1	1	1	1	1.0
Testing by WDFW - phosphorus, nitrate, etc. (per sampling plan, as budgeted)	3	3	3	2	3	5	2	2	2	2.8
Testing by WDFW - e-coli (not budgeted)	4	4	13	4	8	2	3		3	5.1
Testing by WDFW - carp count, fish health, plant typing	2	5	4	3	4	2	4	3	4	3.4
Pollution control - runoff, storm drainage, etc.	5	6	5	5	2	7	6	5		5.1
Otter removal	8	16	14	15	9	4	11			11.0
Erosion control - shoreline rebuild	6	12	5	8	11	9	7	4		7.8
Aeration device installation	16	15	11	16	15	15	12			14.3
Milfoil monitoring	7	7	12	7	5	8	9	6		7.6
Public involvement and education	13	13	6	13	10	10	13			11.1
Geese damage monitoring	14	14	8	16	14	13	10			12.7
Septic tank monitoring - involve Clark & Cowlitz Counties as necessary	9	8	7	9	9	11	14			9.6
Contact list for ex-officio members	12	9	2	6	13	3	15			8.6
Grant applications - contact CWCOG for assistance	11	10	10	10	6	6	5	7	5	7.8
Signage - consolidation, replacement and new	15	11	6	12	12	12	16		7	11.4
Extend inlet pipe further into the Lake - 1,650' per alum study	10	2	9	11	7	16	8		6	8.6
*Cormorant study							17			17.0
			**	***		****		*****	*****	

* Cormorant study. There are 100+ ducks that are out there eating fish like crazy and pooping in the lake.

** Combined pollution and erosion control as one combined issue. Combined public involvement and signage as one combined issue.

*** Includes two 16's and no 14.

**** Includes two 2's and no 14.

***** Only the top seven items were ranked.

- It seems to me that all priorities should be placed below establishing a consistent flow of water into Horseshoe Lake.

- Consider making two priority lists. One of things "we can control" and do with our own resources and the other of things "we cannot control" and have to rely on others to accomplish.

Or even consider a third list of items that are cost related such as aeration, pipe extension, or ecoli testing and include grant funding with it.

- Could long term projects be divided up and have specific committee members assigned to work on them? One committee member could make a progress report at the monthly meeting if any progress has been made.

- Can monthly agendas and meeting conversations be limited to project progress to limit discussions on things we can not change, allowing for more work time? For example, limit otter removal and erosion control discussion to only when needed, hold discussions regarding public involvement, geese monitoring, and septic tank monitoring to annually.

- The introduction of grass carp into the lake was a mistake, they represent a real threat to the beneficial aquatic vegetation that is important to the lake's overall health.

**HORSESHOE LAKE MANAGEMENT COMMITTEE
GOALS & PRIORITIES
MARCH 2012**

ITEM	RANK
Pump repairs by WSDOT	1.0
Testing by WDFW - phosphorus, nitrate, etc. (per sampling plan, as budgeted)	2.8
Testing by WDFW - carp count, fish health, plant typing	3.4
Pollution control - runoff, storm drainage, etc.	5.1
Testing by WDFW - e-coli (not budgeted)	5.1
Milfoil monitoring	7.6
Erosion control - shoreline rebuild	7.8
Grant applications - contact CWCOG for assistance	7.8
Contact list for ex-officio members	8.6
Extend inlet pipe further into the Lake - 1,650' per alum study	8.6
Septic tank monitoring - involve Clark & Cowlitz Counties as necessary	9.6
Otter removal	11.0
Public involvement and education	11.1
Signage - consolidation, replacement and new	11.4
Geese damage monitoring	12.7
Aeration device installation	14.3
*Cormorant study	17.0

Purpose: Effectively focus and direct Committee efforts based upon which issues are deemed to be the most pressing and/or important. Eliminate discussing the same thing time and again with little movement toward resolution.

What's next?:

- Document the steps to be taken and resources necessary to complete each project.
- Create a timeline for each project.
- Reassess priorities based on what can and cannot be accomplished.
- Track each project and evaluate progress to date as necessary.