

**DOCUMENTATION IN SUPPORT OF
A SUBMISSION OPPOSING**

PROPOSED BYLAW 35-2012 TO AMEND LAND USE BYLAW 20-2009

By:

Sandy L. Clark
Redacted Information

INDEX

Seba Beach Site

1. Emails regarding initial complaint and resulting responses
 - a. Unsightly mess at "Culmac site" owned by the Summer Village of Seba Beach; and
 - b. Parkland County's payment of ½ of the cost of the south boundary fencing of this private property;
2. Site Photos
3. Summer Village of Seba Beach Minutes and 2012 Newsletter
 - a. Minutes of Regular Council Meeting of Summer Village of Seba Beach - August 19, 2010;
 - b. Minutes of Regular Council Meeting of Summer Village of Seba Beach - October 21, 2010;
 - c. Minutes of Regular Council Meeting of Summer Village of Seba Beach - November 18, 2010;
 - d. Minutes of Regular Council Meeting of Summer Village of Seba Beach - December 29, 2010;
 - e. Summer Village of Seba Beach Newsletter May 2012
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6. Lake Wabamun; A Review of Scientific Studies and Environmental Impacts - Dr. David W. Schindler; December 2004;
7. Alberta Environment
 - a. Cyanobacterial Toxicity;
 - b. Cyanobacterial Blooms in Surface Waters;
 - c. Trophic State of Alberta Lakes
 - d. Edmonton Journal article "Control Phosphorus To Save Lakes: water expert (Dr. David Schindler

Composting Guidelines and Regulations

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 - a. Composting 101.com
 - b. "Rats and Mice"
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13. Waste Alberta Landfill and Composting Facility Operator Certificate Guideline;
14. Parkland County Hydrogeological Assessment - Revised November 1999

RE: Culmac Road, Seba Beach

From: **Sandy Clark** Redacted Information

Sent: June-08-11 6:30:53 AM

To: Karen Kormos (kkormos@parklandcounty.com)

Karen, here are some photos I took last night. The yard waste at the front gate (twigs, branches, etc.) is stuff that has been dumped over the gate by someone. This is also where we see numerous bags of "stuff" dumped each weekend. The boat hoists have been sitting there for at least 5 years. Any questions, call me at work between 7 and 2 at Redacted Information. Thanks for your help on this matter.

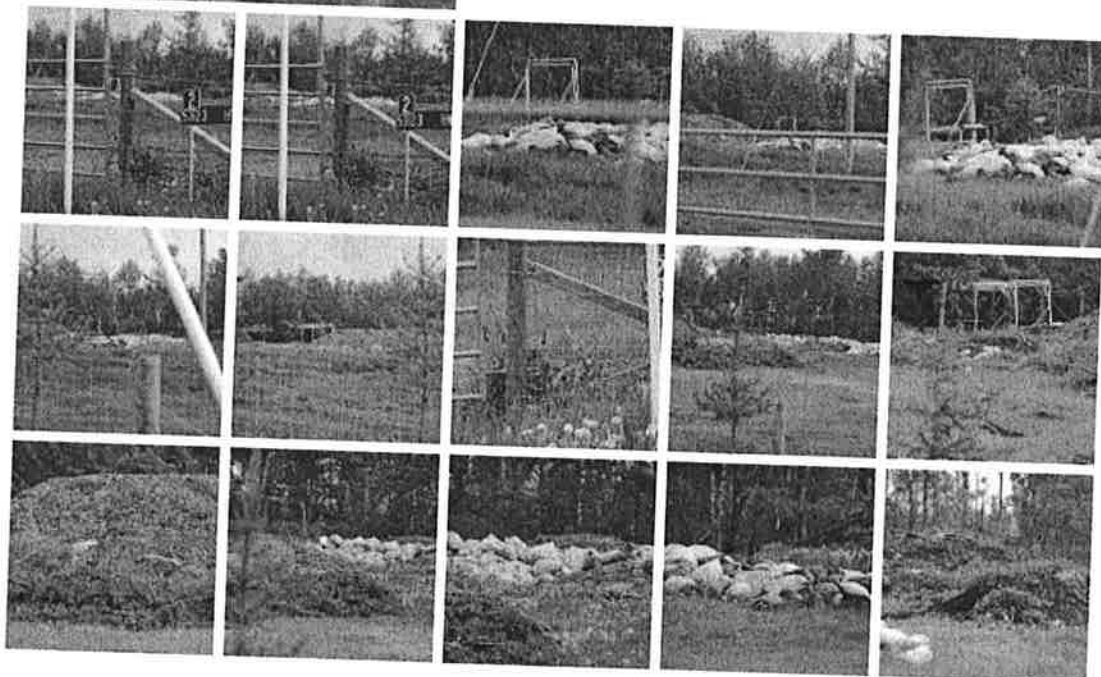
Sandy L. Clark

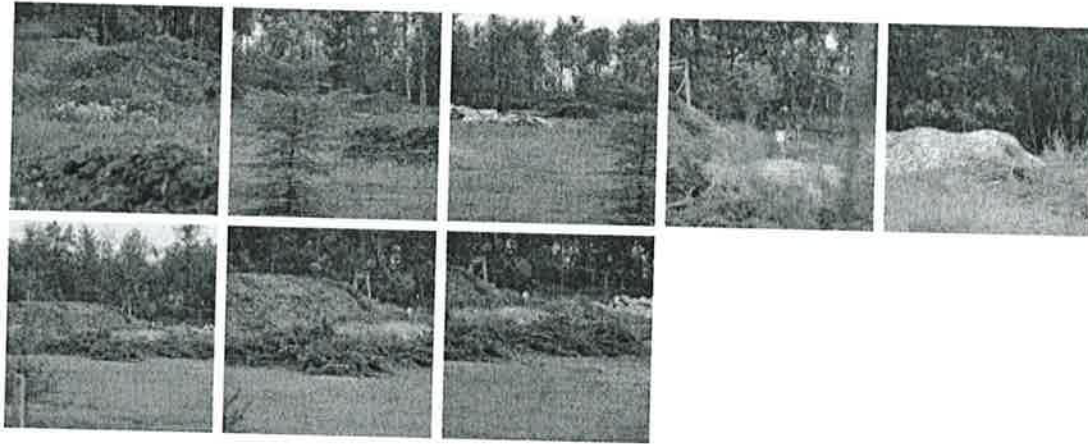


Culmac Road, Seba Beach

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This online album has 24 photos on SkyDrive.





From: kkormos@parklandcounty.com
To: Redacted Information
Subject: RE: Culmac Road, Seba Beach
Date: Mon, 6 Jun 2011 18:52:22 +0000

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thanks

Karen

From: Sandy Clark Redacted Information
Sent: Monday, June 06, 2011 12:13 PM
To: Karen Kormos
Subject: Culmac Road, Seba Beach

Karen

The link for Seba Beach is www.sebabeach.ca

The August 19, 2010 minutes of the Seba Beach Council talk about the "Culmac Site" being "compromised" and a suggestion of fencing being made.

The September 23, 2010 Minutes said that the Administrator has gotten an agreement with Parkland County to cost share the fence.

The October 21, 2010 Minutes again speak to cost sharing of the south portion of the fencing on the Culmac Site.

The November 18, 2010 Minutes confirm installation of the fence and gates and that tree planting will take place with Parkland County providing a tree spade.

The December 29, 2010 Minutes speak to the fact that access to the Culmac Site is limited to those key holders.

Thanks so much for your help. Will send you pictures later in the week.

Sandy L. Clark

RE: Culmac Road, Seba Beach

From: **Sandy Clark** Redacted Information

Sent: June-08-11 8:26:30 AM

To: Karen Kormos (kkormos@parklandcounty.com)

Karen; you will also note that most of the bags in the piles are "faded" as they have been there since last year

Sandy L. Clark

From: kkormos@parklandcounty.com

To: **Redacted**

Subject: RE: Culmac Road, Seba Beach

Date: Wed, 8 Jun 2011 14:12:49 +0000

Thanks Sandy, pictures help.

Karen

From: Sandy Clark Redacted Information

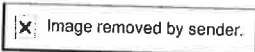
Sent: Wednesday, June 08, 2011 6:31 AM

To: Karen Kormos

Subject: RE: Culmac Road, Seba Beach

Karen, here are some photos I took last night. The yard waste at the front gate (twigs, branches, etc.) is stuff that has been dumped over the gate by someone. This is also where we see numerous bags of "stuff" dumped each weekend. The boat hoists have been sitting there for at least 5 years. Any questions, call me at work between 7 and 2 at Redacted. Thanks for your help on this matter.

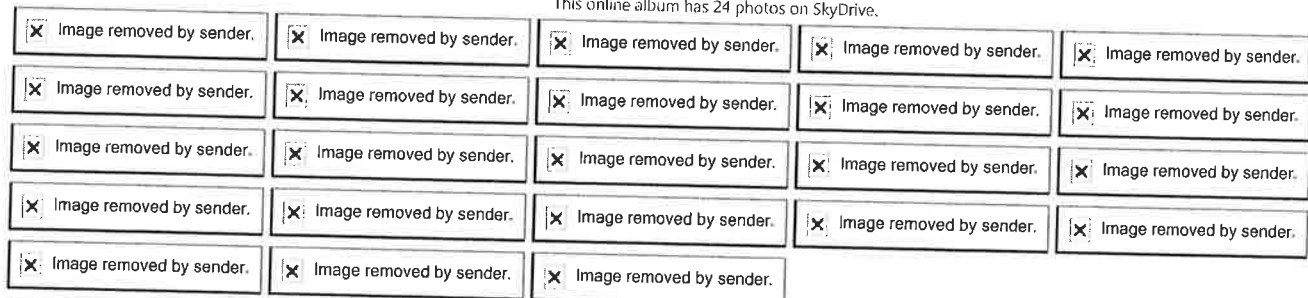
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Sandy L. Clark

RE: Culmac Road, Seba Beach

From: **Sandy Clark** Redacted Information
Sent: July-12-11 4:10:24 PM
To: Karen Kormos (kkormos@parklandcounty.com)

Karen, as per our discussion, you had indicated that Sue from the Village Office had indicated that the boat hoists would be removed by the following Monday, about mid-June. The boat hoists are still on the property and the garbage haulers have started leaving bags again at the "compost heap"

What has the manager decided about proceeding with the governance of this matter. I have spoken to another resident on Culmac and they too are enraged about Parkland County paying 1/2 of the cost of the fencing on this private property.

Please update me as soon as possible failing which I think a contingency will be attending an upcoming Council meeting to discuss this further.

Thanks in advance
Sandy L. Clark

From: kkormos@parklandcounty.com
To: Redacted Information
Subject: RE: Culmac Road, Seba Beach
Date: Thu, 16 Jun 2011 20:16:07 +0000

Sandy,

We have had a discussion with Sue from Seba Beach and she indicated that the boat hoists will be removed and the bags will be opened and composted. I have also had a discussion with my manager to decide where we go from here.

Karen

From: Sandy Clark Redacted Information
Sent: Thursday, June 16, 2011 9:02 AM
To: Karen Kormos
Subject: RE: Culmac Road, Seba Beach

Karen; I notice that there has been no clean-up as of this past Monday morning. Can you tell me if you are making any progress with this issue?

Sandy L. Clark

From: kkormos@parklandcounty.com
To: Redacted Information
Subject: RE: Culmac Road, Seba Beach
Date: Wed, 8 Jun 2011 14:12:49 +0000

Thanks Sandy, pictures help.

Karen

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Sandy L. Clark

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Culmac Road, Seba Beach

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Thanks so much for your help. Will send you pictures later in the week.

Sandy L. Clark

RE: Culmac Road, Seba Beach

From: **Sandy Clark** Redacted Information
Sent: December-21-11 8:32:44 AM
To: Jane Sloan (jsloan@parklandcounty.com)

Jane, it has now been another two months without an update on how this is being dealt with from Councillor Melnyk.

Could you please advise if the Village of Seba Beach has reimbursed Parkland County for this erroneous payment of the fencing on this private property as well as what is happening with compliance on the "recycle", compost situation. As of the last visit, the Village appeared to be continuing to haul in yard material from the garbage pickup of the Village residences.

Sandy L. Clark

From: jsloan@parklandcounty.com
To: Redacted Information
Subject: RE: Culmac Road, Seba Beach
Date: Mon, 31 Oct 2011 16:52:39 +0000

Thanks Sandy. I have received all 3 emails. I will follow up with Councillor Melnyk.

Jane

Jane Sloan, | Executive Assistant, Council | Parkland County
53109A HWY 779 | Parkland County | AB | Canada | T7Z 1R1
Office: 780-968-8402 | Fax: 780-968-8430
jsloan@parklandcounty.com | www.parklandcounty.com

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From: Sandy Clark Redacted Information
Sent: Monday, October 31, 2011 10:49 AM
To: Jane Sloan
Subject: FW: Culmac Road, Seba Beach

Jane

As per our discussion (three emails forwarded in total)

Sandy L. Clark

From: Redacted Information
To: tmelnyk@parklandcounty.com; pvincent@parklandcounty.com
Subject: Culmac Road, Seba Beach
Date: Thu, 4 Aug 2011 10:58:53 -0600

Tracey; here is a copy of the emails back and forth between myself and Karen Kormos of Planning and Development regarding the property on Culmac Road owned by the Summer Village of Seba Beach which is being used as a compost dump for the summer village's residents. They also used it as their dumping ground for snow removal through the winter.

By separate email, I will send you a copy of the email containing the pictures as well as the last email I sent to Karen Kormos, which, to date, has not had a response. As per your request, I have also forwarded this to Pat Vincent. Thanks for your assistance in looking into this matter.

Sandy L. Clark

> From: Redacted Information
> To: kkormos@parklandcounty.com
> Date: Thu, 16 Jun 2011 20:30:28 +0000
> Subject: Re: Culmac Road, Seba Beach
>
> Karen. The point is it is not a landfill, not zoned as such and while composting for the individual landowner may be allowed it doesn't allow the village to bring in their residents' compost material. I will not be satisfied until this is shut down and cleaned up and any costs paid by my tax dollars reimbursed. The village wouldn't put up with this mess within their own boundaries and if the Parkland County is going to pay for 1/2 of the fence then I would like the same courtesy. I know you are merely the messenger but I will not let this slide any longer. Thanks. Sandy Clark.
> Sent on the TELUS Mobility network with BlackBerry
>
> -----Original Message-----
> From: Karen Kormos <kkormos@parklandcounty.com>
> Date: Thu, 16 Jun 2011 20:16:07
> To: Redacted Information
> Subject: RE: Culmac Road, Seba Beach
>
> Sandy,
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> Sandy L. Clark

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> -----
>
> From: kkormos@parklandcounty.com
> To: Redacted Information
> Subject: RE: Culmac Road, Seba Beach
> Date: Mon, 6 Jun 2011 18:52:22 +0000
>
> thanks
>
>
> Karen
>
>
>
>
> From: Sandy Clark Redacted Information
> Sent: Monday, June 06, 2011 12:13 PM
> To: Karen Kormos
> Subject: Culmac Road, Seba Beach
>
> Karen

>
> The link for Seba Beach is www.sebabeach.ca <<http://www.sebabeach.ca/>>
>
> The August 19, 2010 minutes of the Seba Beach Council talk about the "Culmac Site" being "compromised" and a suggestion of fencing being made.
>
> The September 23, 2010 Minutes said that the Administrator has gotten an agreement with Parkland County to cost share the fence.
>
> The October 21, 2010 Minutes again speak to cost sharing of the south portion of the fencing on the Culmac Site.
>
> The November 18, 2010 Minutes confirm installation of the fence and gates and that tree planting will take place with Parkland County providing a tree spade.
>
> The December 29, 2010 Minutes speak to the fact that access to the Culmac Site is limited to those key holders.
>
>
> Thanks so much for your help. Will send you pictures later in the week.
>
> Sandy L. Clark
>

Seba Beach lot - Culmac Road, Seba Beach

From: **Sandy Clark** Redacted Information

Sent: March-28-12 8:29:56 AM

To: Tracey Melnyk (tmelnyk@parklandcounty.com); Pat Vincent (pvincent@parklandcounty.com); amccully@parklandcounty.com

Thank you for meeting with me on February 13, 2012 to discuss my concerns regarding the failure by the Summer Village of Seba Beach to abide by the Land Use Bylaws of Parkland County in relation to their 10 acre parcel at #2, 53123 - Hwy 31 (Culmac Road).

I was encouraged by the interaction we shared and was pleased that there were discussions taking place between Parkland County and Sue Evans of the Summer Village of Seba Beach to find resolution to the issues surrounding the Village's lot on Culmac Road.

This turned to sadness and dissolutionment on Saturday when I arrived at the lake to find that the Village had once again been hauling snow onto the land, obviously from the most recent snowfalls and the result of roadway clearing. It seems quite apparent that the Village has little or no regard for the impact that they have on the land or their surrounding neighbours. Hauling road waste has an obvious detrimental impact on the environment and could ultimately impact the aquifers that we use to obtain our drinking water. I have now reported this to the Environmental people and hope that they take stern steps to stop this apparent lack of respect and/or regard for the land and the surrounding lake.

Please feel free to contact me anytime to discuss this further. Redacted Information

Sandy L. Clark

From: pvincent@parklandcounty.com
To: Redacted Information
CC: tmelnyk@parklandcounty.com
Subject: RE: Seba Beach
Date: Wed, 30 May 2012 13:53:30 +0000

Sandy,

Thanks for your patience as I have provided the follow up in the matter. I am pleased to be able to share the following with you as a result of my meeting with Sue Evans, CAO, Summer Village of Seba Beach on May 11th.

1. Snow removal and storage – we have confirmed that there is not the appropriate approvals in place to use the existing location as a snow storage site. Based on our meeting we have confirmed the Summer Village will cease to utilize this site for that purpose. Further, we have jointly identified another acceptable and appropriate site at which the Summer Village can and will utilize for that purpose.
2. Composting – the current site is approved and acceptable for a composting operation. The Summer Village has graciously offered to Parkland County residents use of the site - both to dispose of compostable material as well as to help oneself to the compost for individual and personally use. One needs only to contact the Summer Village office to make the arrangements which they would please to assist to make it as convenient as possible.
3. Recycling – the Summer Village has agreed to extend their recycling program and service with provision to pick up any house recycling for Parkland County residents who live along Culmac Road. In order to proceed with accepting this offer we simply need confirmation from residents along Culmac Road of their interest in taking advantage of this offer and service.

I trust we have able to address the concerns and issues that had been identified and have brought this matter to an acceptable conclusion.

Pat

From: Sandy Clark Redacted Information
Sent: Wednesday, May 02, 2012 12:17 PM
To: Pat Vincent
CC: Tracey Melnyk

Subject: RE: Seba Beach

Thanks Pat,

I appreciate being kept informed of the progress you are making.

As I indicated before, I don't want to cause angst between neighbours but there seems to be some very blatant issues which don't seem, in my humble opinion, to be of great concern to the Village of Seba Beach simply because they are outside of their boundaries.

I note in their newsletters and council minutes they make very definite endeavors to curtail any contravention of Alberta Environment issues as well as their own Bylaws but they don't seem too interested in complying with the bylaws, acts and rules put in place by the County and/or the Alberta Government and in particular Alberta Environment when it comes to their Culmac Road property.

I have now reviewed the Code of Practice for Compost Facilities as well as the Snow Disposal Guidelines for the Province of Alberta and there are a number of issues that they are contravening and which must be taken into consideration, in particular the potential impact of their actions on the aquifers from which the Culmac residents obtain their potable water.

The original issues, the fact that the County paid for 1/2 of the south boundary fencing and the unruly appearance of the site because of the composting seem to have been lost by a number of much more important and more impactful issues, that being the environmental issues that are coming directly from the composting and the snow removal. The fact that the snowmelt may increase the generation rate of landfill leachate, which poses a threat to groundwater as well as the metals, hydrocarbon residues, salts, and sand found in waste snow which can also pollute, is much more concerning.

I look forward to your update.

Sandy L. Clark

> From: pvincent@parklandcounty.com
> To: Redacted Information
> CC: tmelnyk@parklandcounty.com
> Subject: FW: Seba Beach
> Date: Wed, 2 May 2012 16:59:30 +0000

>

> Good morning Sandy,

>

> Further to my email on April 30th I indicate I would contact you and provide an update on the meeting I was having with the CAO from the Summer Village of Seba Beach on May 1st.

>

> I had a chance to only have a brief conversation with Ms. Evans last evening prior to and after the Wabamun Lake Mayors/CAOs meeting which was insufficient to cover all of the matters that need to be discussed - including your particular concern.

>

> As a result, we have scheduled a meeting on May 11th at 1:00 PM to provide ourselves (myself and GM of Infrastructure Services) enough time to deal with this and other issues Parkland County needs to address with the Summer Village.

>

> I will be very pleased to share with you all of the information we gather at that meeting and the measures which all be taken to address the respective issues and concerns.

>

> Thanks.

>

> Pat

>

> ----- Original Message -----

> From: Pat Vincent

> Sent: Monday, April 30, 2012 09:00 AM

> To: Tracey Melnyk; Redacted Information

> Subject: RE: Seba Beach

>

> Sandy,

>

> We have scheduled a meeting with the CAO from the Summer Village of Seba Beach for this Wednesday afternoon at 5:00 PM. I will be in a better position following that meeting to be able to respond to the issues you raised and provide confirmation on what operational practises and approvals are in place and appropriate.

> Look forward to responding further it the matter following our meeting on Wednesday.

> Thanks for your patience.

>

> Pat Vincent

> CAO

>

> -----Original Message-----

> From: Tracey Melnyk

> Sent: Sunday, April 29, 2012 5:56 PM

> To: Redacted Information

> Cc: Pat Vincent

> Subject: Re: Seba Beach

>

> Sandy,

> I will ask Pat in the morning and get back to you.

>

> Tracey

>

> ----- Original Message -----

> From: Sandy Clark Redacted Information

> Sent: Sunday, April 29, 2012 02:56 PM

> To: Tracey Melnyk

> Subject: Re: Seba Beach

>

> Hi Tracey. Wondering if there is any update on this?

>

> Sent from my iPhone

>

> On Apr 13, 2012, at 3:12 PM, Sandy Clark Redacted Information wrote:

>

> > Hi Tracey. Thanks for the update and I hope on my next visit that I find a "cleaned up" lot and no further non-compliance. Thanks for your support on this.

> >

> > Sent from my iPhone

> >

> > On Apr 13, 2012, at 12:52 PM, Tracey Melnyk <tmelnyk@parklandcounty.com> wrote:

> >

> >> Sandy

> >>

> >> My last contact with Pat Vincent indicated that he would be following up on the Seba issue with Alberta Environment, however Redacted Information

Redacted is not scheduled to return until March 23rd

> >>

> >> I will be following up on this issue and support your position in regards to the environment

> >>

> >> Tracey

























MINUTES OF THE REGULAR MEETING OF THE COUNCIL
OF THE SUMMER VILLAGE OF SEBA BEACH IN THE
PROVINCE OF ALBERTA HELD IN THE VILLAGE OFFICE
ON THURSDAY, AUGUST 19TH, 2010 AT 7:00 P.M.

PRESENT Mayor Doug Thomas, Councillor Gary Schultz and Administrator Susan Evans.

APPROVAL OF MOTION # 1 - Moved by Councillor Schultz that the agenda
AGENDA be approved as presented.

MOTION CARRIED

CONFIRMATION MOTION # 2 - Moved by Mayor Thomas that the minutes
OF PREVIOUS of the last regular meeting of Council held Thursday July 15th
MINUTES 2010 be confirmed as published.

MOTION CARRIED

MOTION # 3 - Moved by Councillor Schultz that the minutes of
the organizational meeting of Council held Thursday July 22nd,
2010 be confirmed as published.

MOTION CARRIED

DATE OF NEXT MOTION # 4 - Moved by Mayor Thomas that the date of the next
MEETING regular meeting of Council be scheduled for Thursday September
16th 2010 at 7:00 p.m.

MOTION CARRIED

LAW ENF Council reviewed the regular law enforcement report and shift
schedule a copy of which is on file.

MSI Grant The administrator advised that the Municipal Sustainability
Initiative grant application for Peace Officer Protection
Enhancement funding has been approved in the amount of
\$ 10,865.00.

FIRE DEPT Incident response - 37 calls to date.

Training Members have recently completed the "Boat Rescue for First
Responders Course".

Donation The administrator advised that TransAlta Utilities has provided the
fourth installment (\$ 5,000.00) of their total funding commitment
of \$ 25,000.00, which will be complete in June of next year.



ADMINISTRATION The monthly financial reconciliation prepared by the administrator indicated a balance of \$ 643,909.94 as at July 31st, 2010. Council reviewed the list of cheques # 0034 - 0099. As at August 18th, 2010 investment of \$ 200,000.00 was made. 16 months non redeemable @ 2.25% maturing 16th December, 2011 with \$ 5,979.45 interest.

Financial

MOTION # 5 - Moved by Mayor Thomas that the July 2010 financial reconciliation and list of cheques be approved.

MOTION CARRIED

Mtg Attendance Council reviewed and approved the regular monthly meeting attendance.

ICRP MOTION # 6 – Moved by Councillor Schultz that the Summer Village of Seba Beach participate in an application for the Intelligent Community partnership component of the Regional Collaboration Program;

And further, that the Summer Village of Seba Beach agrees to be a participant and abide by the terms of a Conditional Grant Agreement and agrees that Parkland County be designated the managing partner for the purposes of receiving, administering, allocating, reporting and accounting for the grant funds on behalf of the partners.”

MOTION CARRIED

Lagoon The administrator advised that subsequent to the July 19th meeting with Parkland County and Abydos Environmental the summer village is waiting for an engineering analysis report confirming that Alberta Environment feels that the Abydoz proposal is a viable option.

Transfer Station Councillor Schultz requested that the administrator research the cost of purchasing a used garbage compactor truck.

896 – 1 Ave N. Council considered a request from a resident to address the length of the recreation pier located at 896 – 1 Avenue North. Council agreed that any concerns with respect to the pier length should be taken up with Transport Canada, Navigable Waters Branch.

Federal Wharf Council requested that the administrator contact Dean Calder, Small Craft Harbors and notify him that as part of the divestiture program the summer village would like the option of floating docks with the piles and further would like the chain link fence removed and stock piled for use by the municipality.



Annexation

The administrator advised that Alberta Municipal Affairs has provided a copy of the Order In Council approving the annexation of certain lands from Parkland County to the Village of Seba Beach. Minister Goudreau commended the parties on the co-operation displayed during the application process stating that it is through these co-operative efforts that local ratepayers receive the greatest efficiencies from local government.

Culmac Site

The administrator advised due to the number of persons that are hauling compost, brush, etc. up to the Culmac Site, the area is becoming compromised. Unfortunately residents from other communities are using the site as their dumping grounds. Council discussed and agreed that the administrator proceed with the installation of a gated access to ensure the integrity of the site.

Bullrush Nomination

MOTION # 7 – Moved by Councillor Schultz that the summer village nominate Kelly Aldridge for the Association of Summer Villages Bullrush Award.

MOTION CARRIED

ASVA

Council reviewed minutes from the Association of Summer Villages meeting held July 19th meeting a copy of which is on file.

The matter of attendance at the ASVA Conference October 15th and 16th was tabled for discussion at the September meeting.

Regatta Mtg

Mayor Thomas advised that at the Regatta wind-up meeting the committee decided that they would like to donate a possible \$ 5,000.00 toward the preservation of the Heritage Pavilion.

MOTION # 8 – Moved by Mayor Thomas that the summer village set up a "Pavilion Heritage Fund" for the purpose of future development and sustainability of the Seba Beach Heritage Pavilion.

MOTION CARRIED

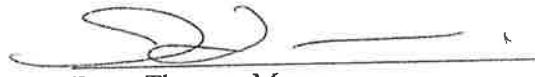
Through further discussion it was agreed that the administrator arrange for a comprehensive inspection to ascertain the stability of the structure of the Seba Beach Heritage Pavilion and upon completion of the inspection, Council will develop a strategy for the preservation of same.

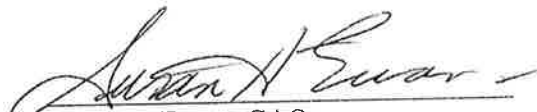
BBQ / Golf

The annual staff/volunteer bar bq and golf tournament will be held September 11th at 2:00 p.m.



- AUMA Conf The administrator advised that the AUMA Convention will be held November 23 – 25th at the Shaw Conference Centre in Edmonton.
- Caution Hill Councillor Schultz requested that administration look into the possibility of the installation of regulatory signage to reduce speed at the intersection of 1st Avenue (Seba Beach) and RR 55A (Parkland County).
- LIBRARY The administrator advised that Library Manager Cathy Lillico has tendered her resignation due to a change of residence. The position has been advertised for replacement on or before September 1st.
- The administrator provided a copy of the summer reading program report a copy of which is on file.
- The administrator advised that the appropriation for municipalities in 2011 will be \$ 4.30 per capita; this amount is unchanged from 2010.
- ADJOURNMENT MOTION # 9 - Moved by Mayor Schultz that the meeting be adjourned at 9:00 p.m. MOTION CARRIED


Doug Thomas, Mayor


Susan H. Evans, CAO

MINUTES OF THE REGULAR MEETING OF THE COUNCIL
OF THE SUMMER VILLAGE OF SEBA BEACH IN THE
PROVINCE OF ALBERTA HELD IN THE VILLAGE OFFICE
ON THURSDAY, OCTOBER 21ST, 2010 AT 7:00 P.M.

PRESENT	Mayor Doug Thomas, Councillors Gary Schultz and Randy Swiniarski, and Administrator Susan Evans.
APPROVAL OF AGENDA	MOTION # 1 - Moved by Councillor Swiniarski that the agenda be approved as amended to include waste management items. MOTION CARRIED
CONFIRMATION OF PREVIOUS MINUTES	MOTION # 2 - Moved by Councillor Swiniarski that the minutes of the last regular meeting of Council held Thursday, September 16th, 2010 be confirmed as published. MOTION CARRIED
DATE OF NEXT MEETING	MOTION # 3 - Moved by Mayor Thomas that the date of the next regular meeting of Council be scheduled for Thursday, November 18th, 2010 at 7:00 p.m. MOTION CARRIED
LAW ENF	Council reviewed the regular law enforcement report and shift schedule a copy of which is on file.
Radar replacement	The administrator advised that the laser unit suffered permanent damage during a vehicle stop. Laser unit covered by insurance (\$1,000 deductible) has been ordered at a replacement cost of \$ 3925.00.
Camera unit	Council considered and approved a request for use of the outdated camera system in the animal control vehicle at no cost to the municipality
FIRE DEPT	Incident response - 44 calls to date.
ADMINISTRATION Financial	The monthly financial reconciliation prepared by the administrator indicated a balance of \$ 363,684.56 as at September 30th, 2010. Council reviewed the list of cheques # 0165 - 203. MOTION # 4 - Moved by Mayor Thomas that the September 2010 financial reconciliation and list of cheques be approved. MOTION CARRIED
Mtg Attendance	Council reviewed and approved the regular monthly meeting attendance.

DS

Legal fees	The administrator advised that legal fees to date with respect to the creek lot Plan 1991HW Block 2 Lot 7 are \$ 4562.83. Further, the administrator has requested written confirmation from the property owners allowing the summer village access to the property for the purpose of maintaining the steam pipes for the winter months.
Lagoon	Waiting for additional information, tabled.
Transfer Station	Parkland County upgrading bins and implementing blue box recycle program scheduled for completion in three months. Tabled for discussion and planning at that time.
Culmac Site	Council discussed the matter of fencing the Culmac compost area / tower site. Parkland County has offered to cost share fencing the entire south boundary of the site with paige wire / one strand barb on top c/w double swing steel gate at a cost of \$ 4142.25. MOTION # 5 – Moved by Councillor Swiniarski that the summer village 50/50 cost share with the county \$ 4142.25 for the fencing and installation of gates at the Seba Beach Culmac site. MOTION CARRIED
Federal Wharf	MERX – Small Craft tender for removal of Seba Beach wharf advertised for tender closure October 21 st , 2010.
ASVA	The administrator provided an overview of the highlights of the 52 nd Annual Conference of Summer Villages of Alberta. Congratulations were given to the Summer Village of Seba Beach on our 90 th birthday since incorporation and accolades were given to Sue Evans for work contributing to the success of the Ministers Municipal Sustainability Strategy and further contribution to the Lake Stewardship Guide.
Traffic Control at Y	Parkland County has agreed that the transition from 60 to 30 km/hr at the 1 st Avenue and Rge Rd 55A intersection is extreme, especially without warning. They have agreed to install a 30 km/hr sign on the County road (Range Road 55A) prior to the intersection along with a 30 km ahead sign. It was agreed that this should slow traffic down before they enter the area of the intersection.
CRASC	Mayor Thomas and the administrator will be attending the November 10 th annual general meeting for the Capital Region Assessment Services Commission.

[Handwritten signature]

8th Street Access The administrator advised that public works have done an excellent job in completing the development of an access path at the east end of the 8th street alley providing pedestrian (foot traffic) access onto 1st Avenue South.

Light Up Your Life MOTION # 6 - Moved by Councillor Schultz that the municipality provide a donation in the amount of \$ 200.00 to the 2010 Light Up Your Life Campaign.

MOTION CARRIED

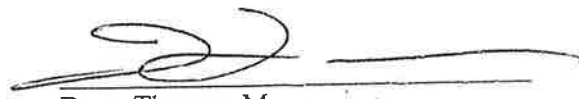
Holiday Season It was discussed and agreed that the annual staff and volunteer holiday season party be scheduled for December 11th, 2010.

Pavilion Inspection The administrator advised that resident engineer, Roy Berg has been commissioned to provide a comprehensive inspection to ascertain the stability of the Seba Beach Heritage Pavilion structure. Further, the matter of replacing the roll shutters will be tabled until completion of same.

Library The administrator advised that the library has planned a community Halloween party for the 30th of October. The existing board table chairs have been replaced for a more modern version.

ADJOURNMENT MOTION # 7 - Moved by Mayor Thomas that the meeting be adjourned at 7:40 p.m.

MOTION CARRIED


Doug Thomas, Mayor
Susan H. Evans, CAO

MINUTES OF THE REGULAR MEETING OF THE COUNCIL
OF THE SUMMER VILLAGE OF SEBA BEACH IN THE
PROVINCE OF ALBERTA HELD IN THE VILLAGE OFFICE
ON THURSDAY, NOVEMBER 18TH, 2010 AT 7:00 P.M.

PRESENT Mayor Doug Thomas, Councillors Gary Schultz and Administrator Susan Evans.

APPROVAL OF AGENDA MOTION # 1 - Moved by Councillor Schultz that the agenda be approved as presented.

MOTION CARRIED

CONFIRMATION OF PREVIOUS MINUTES MOTION # 2 - Moved by Councillor Schultz that the minutes of the last regular meeting of Council held Thursday, October 21st, 2010 be confirmed as published.

MOTION CARRIED

DATE OF NEXT MEETING MOTION # 3 - Moved by Mayor Thomas that the date of the next regular meeting of Council be scheduled for Thursday, December 16th, 2010 at 7:00 p.m.

MOTION CARRIED

LAW ENF Council reviewed the regular law enforcement report and shift schedule a copy of which is on file.

Office video/audio system tabled

Officer Welin provided Council with a lazer demonstration.

Officer Young provided a verbal report on anti-bullying program "Beyond The Hurt".

Mayor Thomas thanked Officers Young and Welin for attending and participating in the wreath laying at the Remembrance Day Service held at the Seba Beach Seniors.

FIRE DEPT Incident response - 46 calls to date.

ADMINISTRATION Financial The monthly financial reconciliation prepared by the administrator indicated a balance of \$ 256,363.46 as at October 31st, 2010. Council reviewed the list of cheques # 204 - 254.

MOTION # 4 - Moved by Mayor Thomas that the October 2010 financial reconciliation and list of cheques be approved.

MOTION CARRIED

Mtg Attendance	Council reviewed and approved the regular monthly meeting attendance.
9 th St Creek Lot	The administrator advised that in response to the request for written confirmation from the property owners (Dolanz) allowing the summer village access to the property for the purpose of maintaining the steam pipes for the winter months, consent has been denied. Further, they are requesting that the watercourse be removed within 30 days. Brownlee LLP will continue to represent the municipality through the legal proceedings.
Lagoon	The administrator reported that we are awaiting the final draft of the Abydoz report on the Seba Beach lagoon. There have been positive talks with Alberta Environment on the matter on which to dispose of effluent from the sewage lagoon through ground dispersion methods, an approach which is permitted under current regulation and is licensable. Once the report has been received, both Parkland County and Seba Beach will go over the report and discuss the strategy on moving forward.
Wharf tender	The administrator advised that Small Craft Harbors has awarded the wharf removal contract to Carmacks Enterprises out of Nisku, Alberta. They are anticipating a January start date with a kick-off meeting in early January.
Culmac Site	The administrator advised that the installation of the fence and steel gates is complete and a lock has been placed on the gate to regulate access. Trees will be planted along the fence line in the near future (Seba to provide trees and Parkland to provide tree spade).
Internet Tower	Parkland County General Manager of Community Services, Al McCully reports that the nine new communication towers are up and energized with power. They are located in the west region of the County at: Duffield, Burtonsville, Bamber, Seba, Tomahawk, Brightwood, Jackpine, Entwistle and Magnolia. Additional equipment has been added to the County existing Horen Tower on Highway 759. Testing of the tower equipment and backhaul system will be undertaken over the next 4 weeks and the system commissioned by the end of December. Negotiations are nearing completion with Wireless Internet Service Providers (WISPs) to lease space on the towers and provide high speed internet service to residents and businesses in the west

region. This service is expected to commence by early January. Residents in the west region of the County looking for high speed broadband service are invited to submit their email or mailing address to the County so they can be notified when the WISPs have been selected. Contact amccully@parklandcounty.com

CRASC

Mayor Thomas provided an overview of the November 10th annual general meeting for the Capital Region Assessment Services Commission. Mayor Thomas has been re-elected to the CRASC Chair for the 2011 term.

AUMA Resolutions

The administrator provided Council with a copy of the AUMA 2010 Convention Policy and Resolutions Handbook, a copy of which is on file.

MSI Report

The administrator provided Council with Municipal Sustainability Initiative documents provided by Municipal Affairs Minister Hector Goudreau for review/comments, copy of which is on file.

Farmers Market

Council reviewed the minutes from the Farmers Market Committee Meeting held October 21st, 2010, a copy of which is on file.

Pavilion Inspection

The administrator advised that Mr. Berg agreed that the comprehensive inspection of the Seba Beach Heritage Pavilion structure is scheduled for January or February of 2011.

WILD Water

Council reviewed the September 3rd and October 1st, 2010 minutes of the West Inter Lake District Regional Water Services Commission Board of Directors, copies of which are on file.

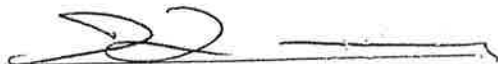
MOTION # 5 – Moved by Mayor Thomas that the Summer Village of Seba Beach participate with the 12 other member municipalities to cost-share the travel expenses incurred by our board representative in attending future board meetings.

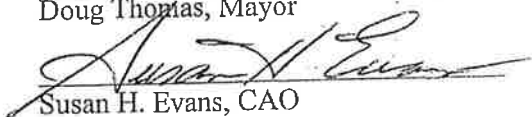
MOTION CARRIED

ADJOURNMENT

MOTION # 6 - Moved by Mayor Thomas that the meeting be adjourned at 8:00 p.m.

MOTION CARRIED


Doug Thomas, Mayor


Susan H. Evans, CAO

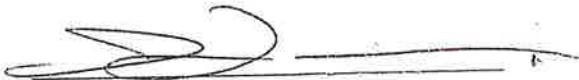
MINUTES OF THE REGULAR MEETING OF THE COUNCIL
OF THE SUMMER VILLAGE OF SEBA BEACH IN THE
PROVINCE OF ALBERTA HELD IN THE VILLAGE OFFICE
ON WEDNESDAY, DECEMBER 29TH, 2010 AT 7:00 P.M.

PRESENT	Mayor Doug Thomas, Councillors Gary Schultz and Administrator Susan Evans.
APPROVAL OF AGENDA	MOTION # 1 - Moved by Councillor Schultz that the agenda be approved as presented. MOTION CARRIED
CONFIRMATION OF PREVIOUS MINUTES	MOTION # 2 - Moved by Councillor Schultz that the minutes of the last regular meeting of Council held Thursday, October 21st, 2010 be confirmed as published. MOTION CARRIED
DATE OF NEXT MEETING	MOTION # 3 - Moved by Mayor Thomas that the date of the next regular meeting of Council be scheduled for Thursday, January 20th, 2010 at 7:00 p.m. MOTION CARRIED
LAW ENF	Council reviewed the regular law enforcement report and shift schedule a copy of which is on file.
FIRE DEPT	Incident response - 48 calls to date.
ADMINISTRATION Financial	The monthly financial reconciliation prepared by the administrator indicated a balance of \$ 243,402.79 as at November 30th, 2010. Council reviewed the list of cheques # 255 - 302. MOTION # 4 - Moved by Mayor Thomas that the November 2010 financial reconciliation and list of cheques be approved. MOTION CARRIED
Mtg Attendance	Council reviewed and approved the regular monthly meeting attendance.
9 th St Creek Lot	The administrator advised that the application for development with respect to Plan 1991HW Block 2 Lot 7 has been reviewed and documentation undertaken and the application has been deemed incomplete by the Summer Village of Seba Beach Development Authority. In order to review the application a Geotechnical and / or Hydrological Study prepared by a qualified engineer must be provided.

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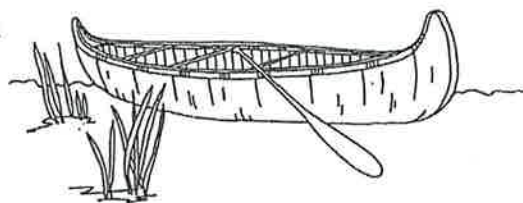
Lagoon	Tabled – no additional information available at this time.
Culmac Site	Trees have been planted along the fence line and access is limited to key holders.
Internet Tower	Tabled – no additional information available at this time.
Wharf/Carmacks	The floating docks will be delivered January 7 th , 2011. There will be 16 sections (22' x 8' x 26") each weighing 2500 lb c/w anchor pile connections. Arrangements have been secured for the offload of the units. A kickoff site meeting has been scheduled for the latter part of January and removal of the existing dock scheduled for February, 2011.
Pavilion Inspection	Tabled – inspection scheduled for January or February of 2011.
Regatta	Council reviewed the Seba Beach Regatta 2010 Financial Report, a copy of which is on file.
ASVA	Council reviewed the Association of Summer Village December 13 th minutes, a copy of which is on file.
ADJOURNMENT	MOTION # 6 - Moved by Mayor Thomas that the meeting be adjourned at 7:30 p.m.

MOTION CARRIED


Doug Thomas, Mayor


Susan H. Evans, CAO





SUMMER VILLAGE OF SEBA BEACH NEWSLETTER MAY 2012

MAYORS MESSAGE - Doug Thomas

The completion of the annual budget is always one of the more difficult tasks we have to tackle each year. As your elected representatives we have a fiduciary responsibility to be fiscally responsible and, at the same time, make sure we continue to provide the services that we enjoy in this wonderful summer village of ours.

Sue Evans and her team work tirelessly in keeping costs reasonable at a time when the same costs continue to increase throughout the rest of the province. We have managed to keep our 2012 tax increase to a very modest 7.6%. This may seem like a lot but please remember that the school requisition portion of the tax increase, which we have no control over, is 11.1%. The school requisition, which we collect on behalf of the provincial government, amounts to almost half of our total budget which means that almost 70% of the 2012 tax increase is a direct result of the increase in the requisition.

Public Works had a busy winter trying to keep the very slippery conditions around the village safe for cars and pedestrians. They worked many hours spreading sand and gravel so if you get an opportunity please tell them how much we appreciate their efforts.

Peace Officers, Dean and Jason, continue to do an excellent job in keeping our village safe from criminal activity. Please remember to obey all of the speed limits and stop signs around the village so that our Peace Officers don't have to be writing any tickets to the residents. Dogs and cats, and the 'odd wild turkey' running at large continue to be one of our most common complaints within the village so please respect the bylaws and keep your pets on a leash and please make sure to clean up after them.

As a result of the winter's ice ridges it is likely that quite a few of the residents are planning repairs or changes to their shorelines to repair any damage that they may have experienced. Please remember that depending on the proposed activity approvals from Alberta Sustainable Resource Development (SRD) Alberta Environment and Waters (AEW) and Fisheries and Oceans Canada (DFO) may be required. A good rule of thumb is that impact to water requires approval from AEW; impact to the bed and shore of the lake requires approval from SRD; and impact to fish habitat requires approval from DFO. If you have any questions or would like to discuss the shoreline please contact Cody Nahirniak, Land Management Specialist with Alberta Sustainable Resource Development at cody.nahirniak@gov.ab.ca

I sincerely hope all of our residents have a safe and enjoyable summer.

Yellowhead Rural Crime Watch - Enclosed in this package is a YRCW brochure / membership application. Please consider joining and supporting your local Crime Watch Association and get involved. With each membership you will receive a telephone or email message advising of any crime activity taking place in your area.

Intelligent Community – Seba service start up and internet information

Fixed high speed broadband service is now available. Residents and businesses either needing access to high speed broadband, or those wanting faster speeds, are urged to contact the WISPs – Tera-Byte (1-866-960-7873) and Xplornet (780-963-9463 Starview Communications)

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Wabamun Watershed Management Council – Kelly Aldridge, Chair

It has been a very busy winter for WWMC. Neil Fleming, my neighbor at Seba has joined us on the Board. Welcome Neil! We have been working hard to prepare a State of the Watershed Report. It will establish in detail the current state of Lake Wabamun and its watershed and it is a necessary first step in preparing a Wabamun Watershed Management Plan. In January we sent out a request for proposals and we will accept the proposal of an environmental consultant at a cost of \$ 20,000.00. To pay for this we have saved nearly every penny of our membership dues and have applied for and been granted a total of \$ 11,000.00 in grants from Parkland County and the Land Stewardship Centre of Canada. So we now have approximately \$13,000.00 in the bank and committed to us in grants. However, we need to raise more money if we are to continue with our mandate.

We are planning a golf tournament this summer at Pine Ridge Golf Resort as a fund-raiser. It is tentatively scheduled for Friday August 10th in the afternoon. We hope to attract 80 golfers, and I know there are a lot of you out there! We will be sending out membership renewal notices in May. The annual membership fee will remain at \$ 10.00 for regular members and \$ 100.00 for corporate members, and we will be asking all members to please make a donation in addition to your annual membership dues. **Donations from individuals will be matched 100% by a grant from the Alberta Community Spirit Program!**

The Invasion has Started!!! Weeds that is!!! You might think weeds are just something to sneeze at, but that's not the case with some of the invasive weeds that are now starting to appear at our lake. In order to not be over-run by these aggressive plants we all need to work together to deal with them. To this end the **WWMC is organizing two Invasive Weed Workshops on June 16th: One at the Wabamun Seniors Centre from 10 to 11:30 and the other at the Seba Beach Heritage Pavilion from 2 to 3:30.** The Director of Alberta Invasive Plant Council will be presenting the main workshop focused on general awareness and identification, with the Supervisor of Agricultural Agronomics from Parkland County also expected to attend to explain what's being done locally to control invasive weeds.

I'll be around most of the summer, so if you have questions or concerns, drop by the cottage at # 591 – 1 Avenue North (beach road) or call me at (780) 953-2695. Have a great summer.

Don't forget to refer to the "2012 Business Directory" listing all local businesses and local contractors who currently hold a business licence in our municipality. Please support your local community and SHOP LOCALLY! The Directory can also be found on our website www.sebabeach.ca

ADMINISTRATION

Regular meetings of Council are generally held on third Thursday of each month. Meeting dates are posted at the administration office or call Sue for confirmation of dates. Everyone is welcome to attend. If you wish to address your Council, please call ahead and Sue will include your item of discussion on the agenda.

Municipal Taxes

Taxes are due on or before June 30th and there will be **no exceptions** made for late taxes. If your payment is received after June 30th a 12% penalty will be imposed. (see your tax notice for additional penalty date information)

The audited financial statement and auditors' certificate have been filed with Municipal Affairs. We are providing the Statement of Operations and Statement of Financial Position in this newsletter. Anyone wishing to review the entire statement please drop by the municipal office.

School Taxes

As you are aware municipalities have no control over school taxes. We are however directed by the Province to carry out the duties of the collecting authority. The 2012 Alberta School Foundation Requisition has increased from \$275,519.76 to \$307,100.32.

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The Administration Office is open to the public from 8:30 a.m. – 12:00 p.m. and 1:00 p.m. until 4:00 p.m. Monday through Friday. Office telephone number is (780) 797-3863 or Fax is (780) 797-3800 (use of the fax is available to the public at reasonable rates) and e-mail is svseba@telusplanet.net Seba's website is www.sebabeach.ca Please ensure that you provide the administration office with any change of address or new telephone numbers you may acquire.

Development Permits are required for most improvement developments affecting your property. **Tony Sonnleitner is the Development Officer** so if you have any questions just give him a call at 780 718-5479 or fax 866 363-3342 or email pcml@telusplanet.net If you wish to obtain a copy of the Land Use By-law, which should answer most of your questions concerning development in the village, copies are available at the village office for \$ 10.00 or you can contact Sue or Tony for an electronic version of the by-law.

The Inspections Group is the Accredited Agency, which provides compliance monitoring pursuant to the Safety Codes Act of Alberta for building, plumbing, gas and electrical disciplines. Application forms are available at the municipal administration office or may be obtained directly from Inspections Group at 1-866-554-5048 or visit their website www.inspectionsgroup.com **Builder**, please be aware that you are responsible to meet all the Alberta Electrical Communication Utility Code requirements when constructing your new building.

Code 2-014 states: No persons shall construct or place buildings or other objects within the minimum clearances from overhead equipment or lines prescribed by this Code unless it is acceptable to the inspection authority having jurisdiction.

Please follow all safety regulations when working around power lines. All measurements for overhead power lines are to be taken by qualified personnel only or with a range finder from safe limits or approach distances as explained in the code.

SOME REMINDERS

Road Ban – A 75% road ban is in place on all municipal roads. Thank you for your consideration when arranging deliveries, etc.

Alberta 1 Call - 1-800-242-3447. Whether you are involved in a large excavation job or simply installing a fence or planting a tree – don't gamble on the unknown. Remember there are underground gas, electrical and telephone lines. It is a free service so call before you dig. 1st Call suggests you call at least two working days before you plan to dig.

Beach Cultivation – will take place during the month of May. Please ensure that any obstacles belonging to your property are not a hindrance to the tractor and keep areas clear. If your property is not accessible for public works to access with the tractor we do have a hand cultivator that you could borrow to cultivate your own beach area. If you would like to arrange for the use of the cultivator or you have piles of weeds to be hauled away give Sue a call at the village office.

Road Allowances – residents are reminded that all road allowances must remain open and accessible. Please remove and clear all hoists, pier sections and or any other debris from the access roads. Any obstacles remaining on municipal road allowances after June 30th will be hauled away.

VEHICLE RESTRICTIONS will be in place from May 22nd through September 30th. No person shall drive or park any vehicle or trailer on any portion of the lakeshore with the exception of the main pier area. Although the main pier area is not formally recognized as a "boat launch" it remains open for anybody who wishes to use it. Anyone who wants to launch a watercraft is encouraged to do so at the recognized boat launch at Wabamun where vehicles do not enter the water. At the present time the Sundance boat launch location remains closed to ensure the integrity of the water treatment plant after the oil spill.



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Ditches – It is an offence to put ashes, grass, debris, branches etc. in the ditches, lanes or streets. Spring cleanup should be bagged and public works will haul it away for you. **When you dump refuse in the ditches you impair drainage adding extra work and expense. Offenders will be charged.** Please do not throw rocks / yard waste in the ditches! – You may be removing these items from your property but you are simply creating more work for public works as they have to remove all discarded items from the ditches – Please help keep our ditches clean!!

LETS TALK Solid Waste / Transfer Station information

There are still many properties that do not have adequate garbage stands and containers. Municipal By-law 386 states that garbage containers must be fastened in such a way as to prevent insects and animals from reaching the contents of the containers and that each owner shall provide a suitable stand for his or her garbage containers that will hold them securely and prevent them being tipped over by animals. In the event that it is necessary for public works to clean-up scattered garbage from your property there will be a minimum \$ 50.00 charge for clean-up.

All garbage needs to be placed in a garbage can lined with a large garbage bag, not thrown in the cans loosely. Garbage cans full of small grocery sized bags will not be collected. Garbage bags should weigh no more than 35 lb or 16 kg. Cardboard boxes need to be broken down and flattened. Remove styrofoam and place in garbage bags. Ideally multiple boxes should be broken down and tied together. The recycle bin at the Parkland County Transfer Station has small openings so boxes will not fit until flattened down.

Parkland County / Seba Beach Transfer Station

Please see “guide to recycling and waste management” brochure enclosed in this mailing for your information. Please keep this guide handy so that you can take full advantage of the recycling options available to us.

Compost – In the interest of the environment please participate in our composting program for grass and leaves. This is the seventh year of this very well received program and we encourage all of our residents to continue to participate. **Clear plastic garbage bags are made available to residents to be picked up at the administration office.** Place your leaves and grass clippings in the clear bags and public works will pick them up and recycle them to the compost pile. Please feel free to utilize the compost in your gardens and flower beds this season. Contact the office and make arrangements for access if you wish to pick up compost. **Compost must be placed in clear bags only, not black, not green, not orange as they can be mistaken for household garbage. Again, bags should not weigh more than 35 lb or 16 kg.**

Garbage Pick-up - is Mondays, sometimes extending into Tuesdays. All garbage must be stored in proper garbage containers with lids, which are fastened to prevent offensive odor and to keep flies and animals out of the containers. All garbage containers must be kept in suitable garbage stands capable of keeping the containers from tipping over. Regulation size garbage cans must be used. **If you require a garbage stand to meet village requirements why not call one of our local contractors to build you one!**

Dogs are not allowed at large – Please keep pets on leash and respect other people’s property. Please clean up after your animals, this is an ongoing problem and we do want an attractive village and clean walking areas. **IRRESPONSIBLE PET OWNERS WILL BE CHARGED.**

Fire Permits – are required for the discharge of fireworks as well as open fires with the exception of regulation approved pits or containers. A pit shall be deemed to be approved if it is fully contained on all sides with a mesh screen over top. No opening within the mesh shall exceed 13mm. Permits may be issued by the Administrator or Constable. All fire pits must be constructed on property owner’s land. **NO OPEN FIRES ALLOWED ON BEACH OR ACCESS AREAS.**



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Family Fireworks (low hazard – do it yourself) are only allowed to be discharged with a permit at the following times:

- New Years 8:00 pm December 31st – 1:00 am January 1st
- Canada Day 8:00 pm – 11:59 pm July 1st
- Labour Day 8:00 pm – 11:59 pm on the first Monday of September

High hazard Fireworks also need a permit. Anyone wishing to discharge high hazard fireworks needs to have a qualified pyrotechnics contractor apply for a permit.

Don't forget the village owns the **tennis courts, camp shelter with cook stoves and playground equipment** located at the south end of the school grounds. If you wish to play tennis, have a cookout and / or enjoy the playground equipment this is an ideal place to go.

The restricted **swimming area** on the south side of the main pier and the restricted boating areas are registered with the Provincial and Federal Governments and will be marked with regulation buoys. Powerboats must keep outside the markers when towing skiers or cruising and proceed at **DEAD SLOW** when inside the buoys marking restricted boating areas. **Public Washrooms** located at the pavilion area are for the use of the general public.

LAW ENFORCEMENT - Happy Spring from Seba Beach Protective Services!

With the new season comes the usual reminder to ensure all residents work and play safe this summer in and around the village.

Safety on Highway 31. Over the past few months, we have encountered a significant increase in vehicles driving over 100 KPH through the village in our 50 KPH zone. This creates a severe risk to all drivers and pedestrians. Aside from the extreme speeds, we are seeing speeding vehicles continuing to come through Seba Beach. As such, we would encourage pedestrians to refrain from walking on the highway. Due to the lack of sidewalks on the crests of both hills, pedestrians are at risk. If you choose to walk along the highway, please exercise extreme caution. We would also recommend that drivers ensure they are entering the highway safely (ie: refrain from backing onto highway, stopping at stop signs and observing traffic flow before entering the highway. A note on the school zone: remember that the 30 KPH zone sign only refers to the prescribed times for school zones: 8:00am- 9:30am, 11:30am- 1:30pm, 3:00pm- 4:30pm; Monday – Friday on school days only. Although it causes confusion for some drivers, please respect those who are traveling 30 KPH during non-school hours by leaving reasonable room between vehicles. Driving too closely to a vehicle causes unsafe driving conditions, driver frustration for both drivers, and the fine for such is \$172.00. Take the extra minute you save by slowing down and enjoy the fine view our village offers!

Bicycle Safety. Remember: bicycle helmets for cyclists under 18 years of age are mandatory. The offense carries a fine of \$57.00. However, the focus is on the safety of our cyclists. Parents, please ensure that your child is wearing an approved bicycle helmet while riding a bicycle. It doesn't hurt for adults to wear them as well! Bicycle safety is for everyone!

Impaired Driving. While we all want to enjoy the fellowship of summer vacation, we want everyone to remember that there is one tradition of this season that is not so enjoyable: **IMPAIRED DRIVING**. If you are the designated driver, do not consume ANY alcohol beverages. If you are going to drink, arrange for a designated driver or alternate transportation. If you are hosting a gathering, take steps to ensure your guests get home safely. Please drink responsibly during the summer season.

Liquor in Public Places. Liquor on the beach and in public areas of Seba Beach is **PROHIBITED** by provincial statute. This continues to be an issue in our public areas. This offence carries a fine of \$115.00. This statute will be strictly enforced. Please refrain from bringing alcoholic beverages to the beach, and leave liquor at home when traveling through the village. If transporting liquor in your vehicle, please transport it out of reasonable reach of the driver. The trunk or farthest rear of the vehicle is your best bet.

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Liquor (open or closed) in reach of the driver is also an offence, and carries a fine of \$115.00. Please save yourself some money and hassle, and use alcohol responsibly.

Off Highway Vehicles. A reminder that Off Highway Vehicles (quads, dirt bikes, etc.) are also another tradition of this season. While these are a significant source of entertainment, it is unlawful to operate them as transportation within the village limits. Registration and insurance is required for these vehicles, and a valid plate must be displayed. We encourage OHV fans to enjoy them courteously and lawfully. Please familiarize yourself with the laws surrounding the use of such vehicles. The Village Office has a pamphlet that explains the up-to-date laws surrounding OHV's, as well as Parkland County OHV bylaws.

We look forward to an enjoyable summer season. If you have any questions or concerns that we may be able to assist you with, do not hesitate to call or stop by the office or feel free to "wave us down"!

Cheers!

Community Peace Officers, Sgt. Dean Young and Jason Welin

Emergency contact numbers are as follows:

email sbps@telus.net

Law Enforcement Administration Line: (780) 797-3021 (voice mail)

Non Emergency Complaints Line: (780) 968-8401

Emergency Complaints Line: 911

RCMP Administration 780 727-3654

RCMP Emergency 780 727-4446



FIRE DEPARTMENT – Rick Hart, District Deputy Fire Chief

Hello Everyone, here we are again, another winter behind us and it looks like spring has finally arrived. Considering the forecast was for a long cold winter with lots of snow, we got off pretty lucky with only a couple of weeks of really cold weather. The "lots of snow" forecast did not happen and the temperatures were pretty mild. Even though we have had two or three freak snow storms in the past couple of months, the ground is still extremely dry in the fields, ditches and in the bush amongst the trees. This can mean only one thing, **Springtime Grassfire Season**. As your District Deputy Chief, I would like to take this time to remind and ask you to use extreme care and caution if you are planning to do any burning on or around your property. Make sure all the necessary permits(s) are in place and that all safety and precautionary steps outlined in the permit(s) are being followed.

With summer just around the corner and all the fun activities on and around the lake please take the time to play safe both on and off the water. I will finish up by wishing everyone a safe summer and **Please don't drink and drive**. Let's all do our part to keep our roads and highways safe.

In the case of EMERGENCY dial 9-1-1 and ask for either fire/ambulance or police.

The Seba Beach Volunteer firefighters thank you for supporting the department and wish you a safe and fun summer.

WHAT'S NEW AT THE SEBA LIBRARY – Judith Watts-Mott

What's New at the Public Library...?

I want to share some of the new things available through our public library regional system. There's a feature for our library's Facebook page "Seba Beach Public Library", which links it to Tracpac (our online catalogue). If you click on the blue Tracpac icon at the upper right of our Facebook page, it allows you to sign onto your account, and do all the usual searches, requests, and checking of your account that you can do at the Tracpac website. Now you can get more things done on Facebook!

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There's a new eBook collection available to all library members called Freading. Go to their website at www.yrl.freading.com to see 15,000 titles in many genres. It is free if you have a membership but it uses tokens as an exchange for a title. You receive tokens every week for a month, and what you don't use rolls over to the next week. New or popular books are worth 4 tokens while older books take fewer tokens. Your loan time is 3 weeks like the regular loan for books. These eBooks are compatible with more types of readers and devices so "check it out".

Mango Language Learning and Consumer Reports are online resources included in your Tracpac library membership. Mango is a self-paced, online system for learning languages utilizing oral and written language. There are about 3 dozen different languages such as: Japanese, English as a Second Language, French, etc. for study. I will do a training session in June so stay tuned for the time and date.

The library's Second Hand Book, Movie & Equipment Sale will be on Regatta Weekend. Due to our limited storage space, please save your boxes until the week of July 23. This community is very generous so thanks again for your great support!

New Materials in the Library:

We have some excellent magazines donated to our library. We keep only the latest/current year's issues:

- Birds and Blooms
- Canadian Geographic
- Canadian Living
- Gardens
- Readers' Digest
- Sky News
- World Archaeology

You can borrow them without signing them out... this is an honor system **only for magazines.**

Some New Books:

Down these strange streets: tales of urban fantasy/ c. 2012

Never too late: take control of your retirement & your future/by Gail Vaz-Oxlade

The Next Always/ by Nora Roberts, c. 2011

One child /by Jeff Buick, c.2010 (this book has an interactive website at onechildonline.com)

Quiet: the power of introverts in a world that can't stop talking / by Susan Cain, c.2012.

The Spy / by Clive Cussler (CD audio book)

Your brain on nature/ by Eva M. Selhub, c.2012

Wishes fulfilled/ By Dr. Wayne Dyer

Some New Movies & TV series:

Adventures of Shirley Temple (classic kids 'movie)

BBC's Life (nature series)

Big Bang Theory (Seasons 1-4)

Chuck: the complete Third season

Eat, Pray, Love (DVD)

Extraordinary Dogs: Canine companions

Hugo (in DVD & Blu-Ray)

Modern Family: the complete second season (DVD)

Puss in Boots (in DVD & Blu-Ray)

Cartoons on DVD:

Care Bears

Hello Kitty

Madeline



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Our Summer Reading Club 2012 will begin in July and run until mid-August. This year's theme is "Imagine" so we will read stories about fantastic creatures, princesses, knights, etc. We will create our own puppet theatre, dress up in costumes, create our own imaginary island with a map and mini-book, create magical artworks, etc. There will be one day a week for pre-school children to come for early literacy games and crafts (children under 3 years must be accompanied by a guardian). The program is free but you should register your children to get their stickers and activity books.

The full-time, summer hours start Tues. July 3 – August 31 as follows:

Tues.-Sat.'s 10:00 a.m. – 5:00 p.m.

Happy Spring!

By Judith Watts-Mott
Librarian
Seba Beach Public Library



SEBA BEACH SENIORS - President Don Hall

This year has been a very successful year socially for the Seba Beach Seniors. Long time programs like the monthly potluck lunches on the third Monday of the month continue to draw people with superb food and friendly conversation. We have begun to invite a theme speaker to some of our lunches, the first being Peace Officer Dean Young who spoke to us about challenges of senior driving. Jam nights each Wednesday evening since May 4th, 2011 have been a shining success. Peter Dykes and Phil Walton, along with as many as nine other local musicians have kept the music flowing. They play a wide range of styles that appeal to an audience of dedicated music lovers. In June we invited the Wabamun Seniors Club to a pulled pork dinner which was delicious and it was fun to meet with our Wabamun counterparts. Our Christmas party, with dinner, was catered by Carol from the Village Kitchen in Tomahawk. The music was provided by the "Jam Night Musicians".

We have re-instituted a weekly drop-in on Saturday afternoons from 2 to 5 - pool, shuffleboard, cards, scrabble, darts, puzzles, tea, coffee, cookies and great conversation are all available. In this year, with your help, we are considering an occasional jamboree, dramatic reading of plays, summer outdoor games and a barbecue. Your suggestions to help make these programs a success are always welcome. Have a happy summer!!

EDMONTON YACHT CLUB - Paul Kantor

There used to be a time when members of the Edmonton Yacht Club, once paid their yearly membership, were given a chance to guess the exact time when the ice was officially off the lake, (Now this was a long time ago, some time in the late fifties and early sixties). Dan Smith, owner of Seba Beach Boat Rentals, was the official judge and his word was final. Someone became the proud owner of the prize, which could be anything from an inflatable boat roller to a hat or whatever it was, the winner would treasure it for the rest of the season. This was before all this talk about "Climate Change". The ice went out around the end of April, if the spring came really late, a few days after the first of May. For us, the climate change came after the Wabamun power plant closed. We may be lucky to have the lake free of ice before the second week of May. However, regardless of the date, we will be there to start the season. There will be watercraft of all sizes and shapes on the water, the wind will blow, the sun will shine and we will enjoy the beauty of the lake.

On behalf of the Edmonton Yacht Club, I would like to share with you some of our highlights and invite you to join us or take part.

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Intercity Regatta and the June Series

Once the docks, mooring balls and finally the boats are in the water, we host the **Intercity Regatta** on June 10 – 11. This is when sailors from all over Alberta come to compete in several different classes. This regatta is important for the younger sailors because it is part of a series of regattas, to qualify for a place on Team Alberta, to represent the province at national events. Cruisers too, on the same days, race on a different course. This is usually the contest among the sailing clubs on the lake and some visitors from other clubs in the province. This is also the beginning of a series of races in June, called the **June Series**. Depending on the weather you will see 5 – 10 cruisers and have one or two races every Sunday at 1200 hours. To watch sailboats race from the shore may not make much sense, they seem to be going all over the lake. If you want to know what is happening out there, come up to the bar after 9 on Saturday night. We will arrange to have someone take you out on one of the racing boats or on the committee boat.

The Northern Alberta Sailing College (and some more history) once about a time, there was the Edmonton Yacht Club and there was the Wabamun Sailing Club. They were forward thinking clubs and teaching the young children how to sail was considered important. So important, that both clubs raised funds, bought boats (Flying Juniors) hired instructors and there was sailing school during July, every weekday 9 to 4. Parents, grandparents enrolled their youngsters and everyone was happy. There was no problem, once the kids were deposited at sailing school. They were happy to be with their peers, safe, and looked after. Some even learned enough about sailing to carry on and keep on sailing. Water safety was always high on the agenda. A few years later the two clubs in their wisdom, realized, that pooling their boats, instructors and their resources would result in a better program. The NASC was incorporated. The school is still there. The children are still there. The program is second to none in the world. The instructors are super, well trained and enthusiastic. Why don't you consider enrolling your youngsters in the sailing school? The best care (babysitting) service money can buy. There are programs age 7 and up. For more info go to www.northensailingcollege.com

More Water Safety !!! Get Your Card !!!

Even at the cost of sounding like a broken record (CD?) I would like to draw your attention, that, just because the law requiring the possession of a Pleasure Craft Operator Card was not seriously enforced in the past doesn't mean it will not be this year. There is a \$250.00 fine for not being in possession of the card regardless of horsepower or age of the operator. Save your money and avoid the embarrassment. Before the boating season gets really underway, you can get your card. There will be two courses and exams available at EYC (see me) or mail in application available at www.sinbad.ca
Have a great and safe summer!

HERITAGE HIGHLIGHTS SPRING 2012 – Sandy Drummond

Another great summer is almost here and the Seba Beach Museum will be opening its doors with great enthusiasm to welcome visitors and guests once again. The Museum will be open most weekend afternoons in June with regular hours through July and August.

Hours are Wednesday to Sunday 10:00 am – 5:00 pm

Museum memberships are \$ 20.00/year. Our memberships are important not only as a source of revenue but also as an indicator of community support and grant funding purposes.

Note: We now have a new email address: sebamuseum@shaw.ca

There will be lots of activity at the museum this summer while staff and board members continue their work toward developing, revising and constructing new displays in the process of reorganization. Access to the museum will continue as usual. Community suggestions are always appreciated and help always accepted.

The Community Yard Sale is again planned for the second Saturday in July (July 14th). Donations welcomed and may be left at the Museum anytime during the day when open. Contact: Betty McTavish

SUMMER VILLAGE OF SEBA BEACH

STATEMENT OF OPERATIONS YEAR ENDED DECEMBER 31, 2011

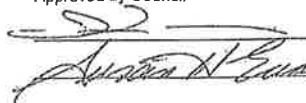
	Budget Unaudited	2011	2010
Revenues			
Net municipal property taxes	\$ 390,761	\$ 390,835	\$ 375,733
User fees and sale of goods	17,300	9,009	25,218
Government transfers for operating	19,036	28,108	14,484
Licenses and permits	1,440	1,650	1,455
Franchise	20,000	23,224	18,380
Fine	35,000	43,057	31,068
Penalties and costs of taxes	3,000	4,523	4,132
Investment Income	4,315	4,506	1,675
Local government transfers	76,837	81,076	77,577
Local agencies transfers	1,000	1,811	1,750
Rental	3,000	2,678	3,841
Donations	6,300	5,300	6,300
	<u>676,089</u>	<u>695,777</u>	<u>561,813</u>
Expenses			
Council	13,064	14,151	9,140
Administration	194,335	204,984	175,662
Police	149,024	163,007	135,254
By-law enforcement	2,500	2,633	2,157
Fire, disaster and emergency measures	18,177	8,356	30,224
Public works	110,802	135,303	89,701
Roads, streets, walks, lighting	15,000	14,337	17,132
Water supply and distribution	1,716	1,816	1,716
Waste management	30,500	31,771	49,476
Planning and development	8,000	3,300	5,807
Parks and recreation	22,750	24,557	24,763
Culture	11,317	12,364	12,531
	<u>575,185</u>	<u>616,579</u>	<u>553,563</u>
(Deficiency) Excess Revenues Over Expenses Before Other	904	(20,802)	8,050
Other Revenue (Expenses)			
Government transfers for capital	107,500	92,243	6,760
Gain on disposal of tangible capital assets	-	-	2,925
Amortization	-	(69,897)	(65,029)
	<u>107,500</u>	<u>22,346</u>	<u>(56,344)</u>
Excess (Deficiency) of Revenues Over Expenses	108,404	1,544	(48,294)
Accumulated Surplus, Beginning of Year	1,396,673	1,396,673	1,444,967
Accumulated Surplus, End of Year	\$ 1,505,077	\$ 1,398,217	\$ 1,396,673

SUMMER VILLAGE OF SEBA BEACH

STATEMENT OF FINANCIAL POSITION DECEMBER 31, 2011

	2011	2010
Financial Assets		
Cash	\$ 71,427	\$ 154,733
Investments -- Note 2	250,000	200,000
Taxes receivable	10,436	11,247
Trade and other receivables	127,980	84,697
Government transfers receivable	3,880	-
	<u>463,723</u>	<u>450,677</u>
Liabilities		
Payables and accrued liabilities	42,816	36,521
Prepaid taxes	8,770	7,088
Deferred revenue -- Note 3	250,899	241,858
	<u>312,485</u>	<u>285,467</u>
Net Financial Assets	151,238	165,210
Non-Financial Assets		
Tangible capital assets	1,245,299	1,229,270
Prepaid expenses	1,680	2,193
	<u>1,246,979</u>	<u>1,231,463</u>
Accumulated Surplus	\$ 1,398,217	\$ 1,396,673

Approved by Council



Mayor

Chief Administrative Officer

Seba Beach Memorabilia

Remember When ...

THE DATES THE ICE WENT OFF LAKE WABAMUN



1999 – April 24

2000 – April 27

2001 – April 28

2002 – May 15

2003 – May 2

2004 – April 20

2005 – April 19

2006 – April 22

2007 – April 28

2008 – May 7

2009 – May 1

2010 – April 14

2011 – May 9

2012 – May 7





Association of Summer Villages of Alberta

Lake Stewardship Reference Guide



2006 Edition

Acknowledgements

The Association of Summer Villages of Alberta (ASVA), representing Alberta's Summer Village municipalities, was formed in 1977. The ASVA advocates on common Summer Village issues, proposes solutions, and provides education for Summer Village Councils. The ASVA has long maintained that every Summer Village is dealing with lake stewardship issues today, and will continue to deal with them in the future. Through this Lake Stewardship Reference Guide, the ASVA has taken a leadership role in the stewardship of our lakes in partnership with other provincial government departments, organizations, and agencies.

The Lake Stewardship Reference Guide was prepared through the ASVA Lake Stewardship Steering Committee.

Members of this Lake Stewardship Steering Committee include:

Bruce McIntosh, Chair, Summer Village of Island Lake
Susan Evans-Dzus, Summer Villages of Seba Beach and Lakeview
Art Lamoureux, Summer Village of White Sands
Bob Lindsay, Summer Village of Sunset Beach
Lori Jeffery-Heaney, Summer Village of Val Quentin,
Alberta Urban Municipalities Association Director of Summer Villages

Jim Sandmaier, Summer Village of Island Lake South
Peter Wright, Summer Village of Sunrise Beach

Special thanks to the following individuals who participated in preparing this Reference Guide:

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Christine Lazaruk, Alberta Urban Municipalities Association, Alberta Environment
Terry Sly, Alberta Environment
Bruce Thom, Alberta Urban Municipalities Association

Island Lake (front cover) photo credit: Jim Sandmaier

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Design and graphic layout services: Pat Valastin and Hound's Tooth Communications Ltd.

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Association of Summer Villages of Alberta



Message from the Committee

Dear Councillor,

As Councillor of a Summer Village in Alberta, one of the most important parts of your job will be to help your constituents understand the reality of the lake they own property at, and the best ways to protect that property and the lake ecosystem as a whole - a lofty goal and one not easy to attain. Summer Village residents want a healthy lake to swim and fish in, but are increasingly raising concerns about issues such as declining fisheries and the over-abundance of algae. Many people do not realize that their activities and the activities of their neighbours may be contributing to such problems in their lake. What can seem like an unimportant or minor action by one person can cause significant trouble when many people do the same thing. Incremental change can add up to cause big problems to the entire lake.

Owning land on the edge of one of Alberta's lakes is, in effect, owning property on the edge of a "public park." Alberta's waters belong to all of us. Rules do apply to the use of the water and nearby lands. When you become a councillor of a Summer Village, you assume part of the responsibility of caring for a public natural resource. This ownership responsibility, or stewardship, requires an understanding that what we do on the land as well as in the water affects the lake and our enjoyment of it. As councillors/administrators, you can help protect water quality and the lake's natural beauty for yourself, your neighbours, and for future generations.

There are many reasons people buy property at a lake. Some properties have been in the family for generations. Whether old or new, properties tend to have great value to the people who own them. But people living near lakes have many different ideas about how lakes should be used. They also differ in opinions about their responsibility for taking care of these waters. Opinions often vary from fact. We hope this booklet will give you some guidelines to follow when tackling the varied and sometimes emotional issues that can arise when dealing with owners of lake properties and making good decisions as a council. We hope it will give you the knowledge and tools to make effective management decisions.

We all need to work together to protect our lakes. By working together with your residents, Summer Village councillors and administrators can do much to protect this wonderful and valuable ecosystem, leaving a legacy for our grandchildren of which we can be proud.

We wish you the best of luck.

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Introduction

The landscape at our lakes is changing. There are more cottagers, increased pressures from development, and growing concerns about poor land management practices. These all affect the overall water quality and health of our lakes. We all have the responsibility to take positive action towards improving the condition of our lake's environment. By having a better understanding of lake stewardship issues, involving people at all levels in the Summer Village, and by making better decisions about land use practices, Summer Village councils will be able to lead their community in ensuring their lake ecosystems remain healthy for all users.

The Association of Summer Villages of Alberta (ASVA) Lake Stewardship Reference Guide (Reference Guide) provides Summer Village councillors and administrators with general information, issue identification, legal reference materials, and suggestions for effective stewardship of lake environments. It celebrates and shares success stories of active lake stewardship projects, and suggests policies that can be utilized by Summer Village councils to achieve lake stewardship goals and objectives.

Summer Villages as Municipalities

Summer Villages are municipalities incorporated under the *Municipal Government Act*. Each Summer Village has its own distinct sense of values about the quality of their lake environment. The unique qualities and characteristics of each Summer Village, and the lake stewardship issues they encounter, must be taken into account in planning and decision making. All planning decisions by Summer Village councils must be consistent with Alberta's Land Use Policies, which provide broad policy statements, goals, and objectives to be used by municipal land use decision makers. Council must also consider federal interests and legislative requirements concerning the nation's fisheries and navigable waters. Each Summer Village is required to enact a Land Use Bylaw, which will regulate land development activities. Councils have broad bylaw-making powers, and may enact provisions to minimize or mitigate human impact on the lake environment.



Summer Village Councils as Lake Stewards

Elected councils can provide leadership in all community matters including lake stewardship. Effective ways to address lake stewardship issues include preventing problems from occurring, educating residents about lake stewardship practices and, when necessary, acting on behalf of the community to enforce bylaws.

Councils have the opportunity to ensure good stewardship through instituting proper municipal policies and bylaws. Understanding best management practices can help councillors do this. It can also help them provide property owners with credible advice, guide residents through the Land Use Bylaw, and assist in directing inquiries to other appropriate authorities for private land development and recreational activities. Public consultation with residents and stakeholders is important when developing policies, plans, and bylaws to regulate land use and human activities near the lakes. Community input can help ensure that planning and development reflects community goals and objectives for lake stewardship.

This Reference Guide provides easy access to information to help council and administration understand legislated responsibilities as well as positive stewardship activities they can undertake in the community. Ultimately, councils have a responsibility to be pro-active, to ensure the long-term health of the lake.

Our mission: Effective lake stewardship through leadership, education, public consultation, development of policies and bylaws, and implementation of best management practices.

Adopting Policies and Enacting Bylaws

The following is a brief overview to provide councillors with a better understanding about adopting policies, and enacting bylaws, and with planning tools that support lake stewardship activities.

Policies

Policies are general guidelines that Council provides to administration to instruct them on the course of action to be taken or followed when making administrative decisions. Policies ensure consistent decisions are made by administration when reviewing similar matters.

Policies are not laws unless adopted by bylaw, and are not generally enforceable in the courts. If a lake stewardship issue within a Summer Village requires some kind of “compliance” or “enforcement,” a bylaw needs to be developed or “enacted,” to support related policy goals and objectives.

Bylaws

Bylaws are municipal laws that are enforceable in the courts. Bylaws often outline the fines and penalties for violations and non-compliance. A Summer Village has broad bylaw making powers as provided in the *Municipal Government Act* and may generally pass bylaws for the following purposes:

1. To provide good government;
2. To provide services, facilities or other things that, in the opinion of council, are necessary or desirable for all or part of the municipality;
3. To develop and maintain safe and viable communities.

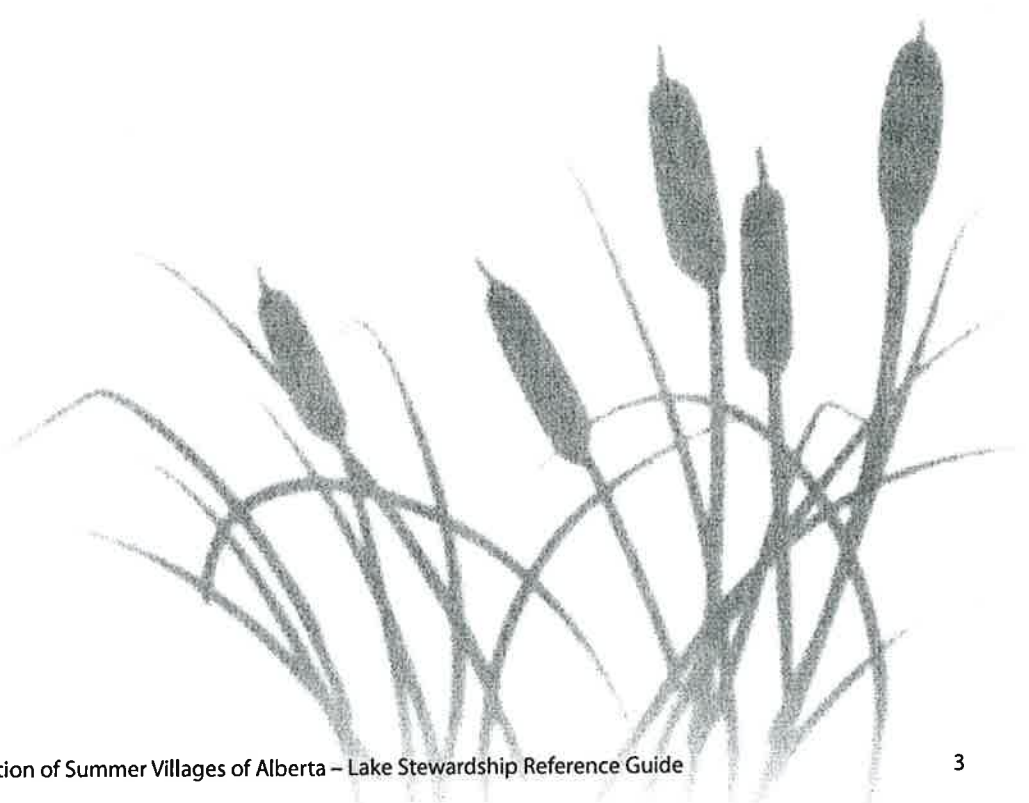
Municipal Development Plan

A Municipal Development Plan is optional (for municipalities under 3500 people), and is a policy document adopted by bylaw that provides general guidelines and broad statements about planning policy. A Municipal Development Plan can assist in ensuring good lake stewardship by setting the tone with environmentally responsible guidelines.

Land Use Bylaw

All municipalities in Alberta are required to adopt a Land Use Bylaw to provide for a means of regulating land use in the municipality. Provisions of the Land Use Bylaw are enforceable in the courts, and there are fines and penalties for non-compliance. For example, a municipality can issue stop orders and order reclamation of sites, if the development or use of private land is not authorized, or not in accordance with the Land Use Bylaw.

For more information, refer to the **Planning and Development** chapter of this guide.



The Lake We Live At

Many governance issues dealing with the lake and surrounding land use practices can directly influence the lake, its stewardship, and the lifestyle quality of those living near it. Therefore, Summer Village councillors and administrators must have a basic understanding of lake ecology and of what an ecosystem is. **Ecology** is the relationship between organisms and their environment. An **ecosystem** is an ecological community functioning as a unit, with its physical environment.

Albertans tend to see their lake in different ways. People buying property at a lake often envision a sandy beach and sky blue water. Chances are that if there was not a beach on your property when you bought it, you will never get a “good” beach to be there. If aquatic vegetation grows in your lake now, it will continue to be there in the future.

But why is this? The answer lies in the way that lakes are created and with where they are located. Once we understand the kind of lake we have property at, and we understand the role of that lake in its surrounding ecosystem, we can better understand what we, as councillors and property owners, can do, or should not do, to keep the lake healthy and functioning. Appreciating the natural beauty and purpose of our lake will go a long way to making our time spent there more enjoyable.

So – just what kind of lake is an Alberta lake? Well, we must remember that lakes are not static objects – they are living, changing, dynamic systems. Typically, most Alberta lakes were formed as retreating glaciers created shallow depressions on the earth’s surface. The glaciers melted and the water filled these depressions, creating lakes.

Most Alberta lakes are shallow, and the soil beneath the water and around the water is very nutrient rich. These nutrients include phosphorus and nitrogen, which are excellent foods for plants. Most Alberta lakes, therefore, are naturally nutrient-rich and thus highly productive, meaning that many plants grow in and around them. Scientists call these lakes **eutrophic**. Eutrophic lakes can support sizable fish populations, and attract waterfowl and wildlife. Alberta also has many **hypereutrophic** lakes (very highly productive). We also have a small number of **oligotrophic** lakes (relatively deep, clear, nutrient-poor and less productive). Typically, oligotrophic lakes are found in the mountains where they sit on and are surrounded by rock, as opposed to nutrient rich soils. Alberta also has some **mesotrophic** lakes, with mid-range levels of nutrients and productivity.

Lakes gradually “age” over time. This change is slow and depends on, amongst other things, the initial depth of the lake. It occurs as nutrients are released from the soil at the bottom of the lake, and are carried into the lake by runoff from surrounding lands. Eutrophic lakes are “old” lakes. They are well into the process of transforming from open, clear water, to wetland, and eventually to land. This process has ups and downs, but generally, all of our lakes are aging.

Many Albertans have come from, or have visited, places with younger, oligotrophic lakes. We might think that all we need to do is “clean up” the lake to make it like the clear, plant free lakes we have in mind. While this is not possible, we can implement practical measures to minimize our human impacts that may speed up the aging process of Alberta’s eutrophic lakes. We can also realize that our Alberta lakes are areas of great beauty and worth. We just need to respect how they work and learn to love what they have to offer.

For More Information

More information on how lakes work can be found in Appendix I - **Understanding Lake Basics**.

To find out what kind of lake you live at, contact your nearest Alberta Environment office.

To see a sample of the trophic status of some Alberta lakes, refer to the Figures 5 and 6 in Appendix I.

You can also find information on many Alberta lakes in the *Atlas of Alberta Lakes*, found on line at:
<http://sunsite.ualberta.ca/Projects/Alberta-Lakes/characteristics.php>



Using this Guide

To fulfill our lake stewardship role we need to know, or have easy access to, information to help us administer our duties. These duties include providing credible advice, ensuring proper policies and bylaws are in place, directing lake users to appropriate authorities for development activity, educating other lake users, and enforcing compliance where an infraction has occurred.

This booklet uses a chapter approach to identify common lake issues, including those associated with human activities that can shape the lake environment. Each chapter discusses the associated law, what actions a member of council should take, whom one can contact for further information, and other resources available on the subject.

Each identified lake stewardship priority issue is presented in six components:

1. What is the Issue?
2. Background
3. What Does the Law Say?
4. What Should I Do?
5. Who Can I Contact?
6. Are There Any Resources Available?

Some issues may also include a success story, or reference a sample bylaw or suggested policy, which can be found on the Association of Summer Villages of Alberta website: www.albertasummervillages.org.

As noted earlier, the following is a guide. While it provides some information, we encourage you to contact the appropriate agencies for current practices, resources, and rules regarding these subjects.

Blue-Green Algae (Cyanobacteria) Blooms

What is the Issue?

During the warm summer months some lakes experience algal blooms. This happens when the microscopic algae multiply and become so numerous that the water looks like thick soup. Most often what looks like algae blooms are actually caused by cyanobacteria. It is not possible to tell cyanobacteria apart from algae with the naked eye.

Cyanobacteria are always present in Alberta lakes, but become a problem when they bloom. Severe cyanobacterial (and algal) blooms can occur when excessive nutrients, especially phosphorus, enter the lake. This is often the result of human activities within the watershed. Cyanobacterial blooms can pose health risks to humans, pets, livestock and wildlife.

Councillors often receive complaints from residents regarding the presence of these blooms. They need to be aware of the signs of a cyanobacteria bloom, know why they occur, and be aware of the activities around their lake that may be contributing to these blooms. Councillors should also become familiar with the signs or symptoms of people or animals that have ingested toxic cyanobacteria.



Photo credit: Ron Zurawell

Aphanizomenon bloom

Background

What are Cyanobacteria?

Cyanobacteria, commonly called blue-green algae, are not algae at all. They are classified as bacteria, but they do exhibit plant (algae)-like characteristics. Cyanobacteria live in the water and are photosynthetic, meaning that by converting energy from light they can manufacture their own food, using phosphorous and other available nutrients.

Under nutrient rich conditions, these microscopic organisms can grow rapidly to form extensive "blooms." They may eventually float to the surface and accumulate near shore as a bright green surface scum, which cannot be picked up like filamentous green algae mats can be.

Pigments in the cyanobacteria cause the water to appear colored. The cyan part of their name means blue-green. It is due to the combination of green chlorophyll pigment and a unique blue pigment (phycocyanin). Not all blue-green algae are blue-green in color. Their pigmentation can be yellow-green, green, grey-green, grey-black, or even red. The water can become paint-like and coat sand and rocks along the shore.

Problems Caused by Cyanobacterial Blooms

Cyanobacterial blooms are visually unattractive. Some bloom-forming species produce organic compounds responsible for giving off a bad smell. They also produce foul smelling masses as they die and decompose. The process of decomposition requires oxygen and can significantly reduce the amount of dissolved oxygen in the water. This can cause aquatic organisms to suffocate and can result in a “summerkill” of fish.

More importantly, a small number of bloom-forming species of cyanobacteria produce potent liver and nerve toxins. Toxic cyanobacteria can cause serious illness and possibly death in the pets, livestock, wildlife and humans that ingest them. Cyanobacteria are toxic throughout their life cycle. Some toxins are stable enough in the environment that surface waters may remain highly toxic for several weeks following the collapse of a bloom. For this reason, the disappearance of bloom material is no indication of safe, non-toxic water.

What Causes a Bloom?

Cyanobacteria can inhabit almost any aquatic environment. They thrive in alkaline lakes with sufficient nutrients to sustain their growth and reproduction. Blooms can occur in relatively undeveloped lakes, but in general, the more fertile, or nutrient rich, the lake is, the more likely it will support a bloom.

Alberta’s prairie and boreal lakes are naturally productive, or “green,” to some degree, primarily due to the soils they sit on and that surround them. Excessive nutrients, especially phosphorous and to some degree nitrogen, entering the water, can tip the scale in favour of these blooms. When conditions are right, blooms of cyanobacteria can occur, usually appearing from mid-summer through mid-autumn as thick green scum covering the water’s surface.



Photo credit: Ron Zurawell

The Affect of Human Activities

Human activities within the watershed are often the source of the extra nutrients that get carried into the lake. Besides being naturally present in the lake, phosphorous can be added in various ways.

Fertilizers – even really good ones – are never totally taken up by the grass they are put on. When people with property at the lake fertilize their lawns some of the fertilizer will end up in the lake with surface water runoff. If fertilizer is “good” for land plants such as grass, it is also “good” for aquatic plants.

Laundry and dishwashing detergents can also have high concentrations of phosphorus. If they manage to get into the lake, they will also add to “nutrient loading.”

Runoff from faulty septic systems and **manure** from agricultural lands can also add to the problem.

What Should I Do?

Municipalities and cottagers are advised to monitor lakes for the detection of cyanobacterial blooms through weekly visual inspections along shorelines.

Through local publications or meetings, advise residents to avoid recreational contact with severe blooms and to keep pets from entering these waters. **It is very difficult to tell if a bloom is toxic.** The best thing to do when there is a bloom at your lake is to err on the side of caution.

- Treat any intense bloom with suspicion.
- Do not drink water from bloom-infested lakes or reservoirs.
- Do not swim or wade in water containing concentrated algae or cyanobacteria.
- Watch children carefully, as they are more likely to drink lake water than adults are.
- Provide alternative sources of drinking water for pets and livestock.
- Contact your local Public Health Department.

Note:

It is not the purpose of this chapter to give medical information or advice. Councillors can get this from the Regional Health Authority or from a medical doctor.



Photo credit: Ron Zurawell

Education and Information

During a bloom, chances are that many residents will be contacting Summer Village councillors and administrators about it. Councillors can use this as an opportunity to explain the human activities that are likely contributing to this problem.

Some residents may suggest poisoning these plants, but this is not a viable solution in something as large as a lake. Many of the chemicals that would be used to kill these organisms are also toxic to other forms of life. **The best long-term solution is to reduce the amount of nutrients entering the lake.**

Management Strategies

For more information on management strategies that can help reduce nutrient inputs into the lake, see the **Fertilizer Use** chapter of this guide.



Photo credit: Ron Zurawell

Who Can I Contact?

- For information regarding algae/cyanobacterial blooms at your lake, contact the regional office of Alberta Environment.
- For information on health matters and cyanobacterial blooms, contact your Regional Health Authority.
- If someone experiences symptoms that may be related to a cyanobacterial bloom, contact a physician immediately.
- If a pet has symptoms, contact a veterinarian as soon as possible.

Are There Any Resources Available?

- Alberta Environment provides educational materials on toxic cyanobacterial blooms at: <http://www3.gov.ab.ca/env/water/swq/brochures/algalblossoms.html> and, <http://www3.gov.ab.ca/env/water/swq/brochures/algaltotoxicity.html>.
- The Soil and Water Conservation Society of Metro Halifax has information on cyanobacteria at: <http://www.lakes.chebucto.org/cyano.html>
- The Minnesota Pollution Control Agency has information on cyanobacteria at: <http://www.pca.state.mn.us/water/clmp-toxicalgae.html>
- **Managing Phosphorus to Protect Water Quality** from Alberta Agriculture at: [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex929](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex929)
- **Managing Nitrogen to Protect Water Quality** from Alberta Agriculture at: [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex928](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex928)
- **A Primer on Water Quality: Pollutant Pathways** from Alberta Agriculture at: [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/wat3350](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/wat3350)
- The Alberta Lake Management Society (ALMS) has information on lake monitoring on their web-site at: (<http://www.alms.ca>).
- General information on lake fertility can be obtained by calling the Evaluation and Reporting Section of Alberta Environment at 780-427-6278.

Fertilizer Use

What is the Issue?

Municipalities and cottage owners apply fertilizers during the summer months to stimulate and nourish the growth of park turf, sport fields, and private lawns and gardens. Improper (over) application and/or rainfall can cause fertilizer to run off into adjacent water where it can accelerate the production and growth of aquatic plants (macrophytes), algae, and cyanobacteria. It can result in algal and cyanobacterial blooms. These conditions are aesthetically unpleasant and can prevent recreational activities such as boating and swimming.

The impacts of fertilizer use are connected to land management practices. There is no provincial legislation regulating the use of fertilizer on private residential properties. It really is up to the Summer Village to be pro-active about this matter. Once Council is up to speed on how lake ecosystems work, and how fertilizers can affect this system, councillors can institute bylaws to regulate fertilizer use within the Summer Village.

Background

Trophic status refers to how productive the lake is and is an indicator of the amount of nutrients in a lake. Plant nutrients, such as phosphorus and nitrogen from chemical fertilizers, or from livestock wastes used as fertilizer, can accelerate the eutrophication of a lake, and thus change its trophic status. Most Alberta lakes already have naturally high concentrations of nutrients. For more information on the trophic status of lakes, see Appendix I - **Understanding Lake Basics**.

Carbon, nitrogen, and phosphorus are necessary for plant, algae, and cyanobacterial growth in aquatic environments. The supply of phosphorus is much more limited on earth than nitrogen is. Nitrogen comprises the majority of atmospheric gas surrounding earth. Some plants, including common bloom forming species of cyanobacteria, can fix atmospheric nitrogen for growth, so nitrogen is never in short supply for these plants. Phosphorus, however, is not available in the atmosphere, so phosphorus becomes the limiting nutrient for growth in aquatic environments. It is important to note however, that nitrogen is just as important as phosphorus for the growth of aquatic plants and algae - especially to those plants that cannot fix atmospheric nitrogen.

Phosphorus

Phosphorus is the primary nutrient that determines plant, algae, and cyanobacterial growth in aquatic ecosystems. A lack of phosphorus will limit their growth in freshwater, even if there is plenty of nitrogen. A very small amount of phosphorus (measured as parts per billion) in freshwater can cause cyanobacterial blooms and increased aquatic plant growth. Besides existing naturally in lake water and in the underlying sediments, phosphorus is found in fertilizers, manure, detergents, and sewage.

Surface runoff carries phosphorus from the land into streams and lakes. The phosphorus is either attached to eroded soil particles or dissolved in the runoff.

Phosphorus in runoff can cause excessive algal, cyanobacterial, and plant growth to occur. Blooms eventually collapse or die and start to decompose. During decomposition, dissolved oxygen is removed from the water by microorganisms that break down the organic material. The lack of dissolved oxygen can cause aquatic organisms, such as fish, to suffocate and die.

Nitrogen

Nitrogen is the primary nutrient required for plant growth on land, but is also essential for growth of aquatic vegetation. Organic matter in soil, chemical fertilizers, and livestock manure provide sources of nitrogen. Nitrogen, in the form of ammonium salts and nitrates (found in commercial fertilizers), is easily diluted in water and can move easily through the soil into shallow groundwater or be carried into the lake with runoff.

Excess nitrogen in aquatic ecosystems can be harmful. Under certain conditions (optimal pH and temperature), high ammonium levels in surface waters can be toxic to fish. High nitrate-nitrogen levels in drinking water can harm human health. High nitrate levels in drinking water can impair the blood's oxygen carrying capacity in small infants, causing "Blue Baby Syndrome." Also, when there is a sufficient supply of phosphorus available in the lake, as is usually the case in Alberta, high concentrations of nitrogen can cause an increase the growth of aquatic plants, algae, and cyanobacteria.

What Does the Law Say?

The federal *Fertilizer Act* defines what fertilizer is. It controls what can make up a fertilizer in Canada.

Alberta Environment carries out its work under the authority of the *Environmental Protection and Enhancement Act* (EPEA) and the *Water Act*. The EPEA regulates the release of substances into the environment, including releases into water. The storage and application of fertilizers is controlled under the *Environmental Protection and Enhancement Act*.

The deposit of a deleterious material of any type, including fertilizer, into water, or in a place where it may enter water frequented by fish, is contrary to the federal *Fisheries Act* [Sec. 36 (3)]. Environment Canada administers this section of the Act.

Fertilizers and Agriculture

Fertilizers used by the agriculture industry (farmers and ranchers) in Canada are controlled by the *Agricultural Chemicals Act* and the *Fertilizer Act* (Canada). The *Provincial Agricultural Operation Practices Act* (AOPA) regulates the agricultural application of phosphorous and other nutrients. This includes what kinds, how much, and where they can be applied. The AOPA also regulates the location of intensive livestock operations.

The AOPA lays out clear manure management standards for all farming and ranching operations in Alberta. In this case manure refers to livestock excreta, associated feed losses, bedding, litter, soil, and wash water. It does not include manure to which the federal *Fertilizers Act* (Section 1) applies. This section of the Act covers manure not related to agriculture.

All operators must manage and apply manure, composting materials, and compost in accordance with the nutrient management requirements in the *Provincial Standards and Administration Regulation* (Sections 23 to 25).

What Should I Do?

Short-term Solutions

Councillors should work to keep all fertilizers out of the water.

Using newsletters or public meetings, advise residents not to apply fertilizer to any property where there is a high risk of runoff. Applying fertilizer on frozen, snow-covered, saturated, or heavily compacted bare soil increases the risk of contaminated runoff reaching the water of the lake. Lawns that slope downward, towards the lake, are also very susceptible to having surface runoff from rains carry excess fertilizer directly into the water.

Advise residents to use phosphate-free detergents, they are readily available. It would also be beneficial to discourage people from washing themselves, their pets, or their vehicles in the lake. Those activities should happen on dry land, well away from the lake.

Council could encourage the establishment of volunteer lake monitoring programs. These programs can yield valuable information on the trophic status and water quality of the lake.

Long-term Solutions

Alberta's eutrophic lakes are very nutrient rich and prone to plant, alga, and cyanobacterial growth. The only real solution to decreasing the number of blooms that occur at a lake is to reduce the amount of nutrients in the lake. Certainly it is important that human activities **do not** add nutrients to the water.

Municipalities, cottagers, and farmers can adopt management strategies designed to reduce nutrient inputs to surface waters, in order to reduce the production of aquatic plants and algae with time. These strategies include the reduction of fertilizer use around lakes and the streams and rivers that flow into them, inspection of septic systems, and maintenance and restoration of riparian vegetation.

This vegetation, found along the shoreline of the lake, takes up nutrients for its own growth, keeping the nutrients out of the water where they could "feed" aquatic plants and algae. Removing shoreline vegetation removes the lake's natural filtering system and increases the chances of erosion. Erosion results in earth entering the water. This earth contains nutrients, so the problem is worsened. Bringing in sand or fill to the shoreline also adds nutrients to the water.

A Different Way of Landscaping

Encourage naturescaping within the Summer Village. The concept of naturescaping is about increasing biodiversity and preserving the balance of an ecosystem. A naturescaped yard would have no chemical inputs. For example, an alternative would be to use "grass-cycling" when mowing your lawn. Approximately half the required nitrogen for a typical growing season can be achieved simply by leaving grass clippings on the lawn. Naturescaping is all about becoming good stewards of nature, and what better place to do this than out at the lake. For more information on naturescaping see the reference in the **Are There Any Resources Available?** section of this chapter.

The Use of Bylaws

Summer Village councils can develop bylaws that:

- Ban or restrict the use of fertilizers on residential lawns.
- Ensure that all grass and plant cuttings are kept well away from the water. (Decomposing vegetation uses up oxygen in the water and also adds nutrients to the lake).

Setting a Good Example

Councillors can provide leadership and set a good example of lake stewardship by practicing environmentally friendly gardening at their own residences. Council can set an example for the Summer Village by restricting fertilizer use in municipal lands, and by encouraging the growth of shoreline vegetation in areas under their control.

Being a Good Neighbour

All the activities within a watershed affect the water quality of the lake. Summer Village council, besides working with its residents, should start a dialogue with other groups in their watershed. In particular, it would be advantageous to start working with farmers/ranchers who have property adjacent to the Summer Village. Only by all of us working together, can we really address the problem of nutrient loading at the lake.

Who Can I Contact?

For excellent information on the science of phosphorus and nitrogen, contact your local Alberta Agriculture, Food and Rural Development office.

To find out what the trophic status of your lake is, contact your regional office of Alberta Environment.

Seba Beach Solves a Problem and Residents Benefit

The Summer Village of Seba Beach, located on the west shore of Wabamun Lake, has a population of 137 year-round residents. During the summer months, however, the population swells to 1400. It was common practice for residents to take the grass clippings and leaves from their lawns and dispose of them in the Village drainage ditches. The result was clogged ditches, and stormwater drainage was compromised. The municipality was concerned about the potential for flooding in the Summer Village. Clippings that didn't go into the ditches went to the municipal landfill, contributing greatly to filling it. The idea of all grass clippings going into the landfill would only add to that problem.

In response to this dilemma, Council initiated a recycling/composting program. Residents can now pick up clear plastic bags, free of charge, from the Village office. They can fill these bags with grass clippings, leave them out, and Public Works employees collect them weekly. The clippings are then taken to a composting site one-kilometer outside the Village. Summer Village staff manages the compost piles. Garbage is not mixed with the clippings, and Village residents are encouraged to use the compost, free of charge, in their gardens and flower beds.

This program is now in its second year and is very popular with the residents. A plan is in the works to start collecting and recycling the plastic bags used in the composting program. The success of this program has had a significant effect on drainage improvements in the Summer Village

NOV - 6 2012



Environment and Sustainable
Resource Development

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October 29, 2012

Susan ~~Dzus~~, Chief Administrative Officer
Summer Village of Seba Beach
BOX 190
SEBA BEACH AB T0E 2B0

Dear Ms. Dzus:

Re: Seba Beach Compost Facility
Notification No. 001-318741

This letter acknowledges receipt of your notification to undertake the construction and operation of a class II compost facility pursuant to the Environmental Protection and Enhancement Act (EPEA). Your notification was reviewed and considered to be complete- this means that Section 7 of the Activities Designation Regulation AR 276/2003 was satisfied. Attached for your information is Notification No. 318741-00-00.

If the scope of this project changes, please notify this office prior to commencement of construction and/or operations.

Should you have any questions concerning this correspondence, please contact Harshan Radhakrishnan at (780) 960-8645.

Yours truly,

A handwritten signature in black ink that reads "Elaine Lawrence".

Elaine Lawrence
Remediation Certificate Coordinator

Encl.

cc: Harshan Radhakrishnan, Central Region - Spruce Grove



Environment and Sustainable
Resource Development

NOTIFICATION OF A WASTE MANAGEMENT STORAGE SITE

PERSUANT TO SECTION 89 OF THE ENVIRONMENTAL PROTECTION AND
ENHANCEMENT ACT (Revised Statutes of Alberta 2000 Chapter E-12)

NAME OF OPERATION	SEBA BEACH CULMAC COMPOST SITE
OWNER OF FACILITY:	SUMMER VILLAGE OF SEBA BEACH
ADDRESS OF OWNER:	BOX 190 SEBA BEACH T0E 2B0
TELEPHONE # OF OWNER:	780 797-3863
FAX # OF OWNER:	

OPERATOR OF FACILITY:	SUMMER VILLAGE OF SEBA BEACH
ADDRESS OF OPERATOR:	SAME
TELE # OF OPERATOR:	"
FAX # OF OPERATOR:	"

LEGAL LOCATION OF FACILITY/ACTIVITY:	NW 7-53-5-5
--------------------------------------	-------------

FACILITY/ACTIVITY:	
Description:	GRASS CLIPPING COMPOST SITE * CLIPPINGS ARE HAULED TO SITE IN CLEAR PLASTIC BAGS TO ENSURE CONTENTS IS CLEAN. BAGS ARE EMPTIED ONTO COMPOST PILE AND BAGS ARE REMOVED FROM SITE
Construction:	Commencement: 2005 Completion: 2005
Operation:	Commencement: 2005
Operations Plan:	SEE ATTACHED PLAN SEE ATTACHED SKETCH
Waste Destination (Landfill Site)	N/A
Attachments: Y/N (If Yes, provide list)	

PLEASE PROVIDE SKETCH OF FACILITY/ACTIVITY LAYOUT ON SEPARATE SHEET
(Scale: at least 1:500)

IF YOU BURN SOLID WASTE AT YOUR FACILITY BURNING SHALL OCCUR ACCORDING
TO THE ALBERTA WASTE CONTROL REGULATION AND SUBSTANCE RELEASE
REGULATION NO BURNING ON SITE

OWNER'S NAME/TITLE (Print):	S. VILLAGE OF SEBA BEACH
OWNER'S SIGNATURE:	SUSAN H. EVANS, CAO Susan H Evans
DATE:	September 12, 2012

FOR OFFICE USE ONLY:	
DATE RECEIVED:	September 14, 2012
NOTIFICATION ENTERED BY:	
SIGNATURE:	AARSHAN RADYAKRISHNAN
REGIONAL ENGINEER	DATE: 19/Oct/2012
NOTIFICATION NUMBER:	318741-00-00

Lake Wabamun:

A Review of Scientific Studies and Environmental Impacts

David W. Schindler (Chair), University of Alberta

(Panel members are listed in alphabetical order)

Anne-Marie Anderson, Alberta Environment, Government of Alberta

John Brzustowski, University of Alberta

William F. Donahue, Freshwater Research

Greg Goss, University of Alberta

Joseph Nelson, University of Alberta

Vince St. Louis, University of Alberta

Michael Sullivan, Sustainable Resource Development, Government of Alberta

Stella Swanson, Golder Associates

Submitted to the Minister of Alberta Environment

December 2004

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Executive Summary

The following recommendations are in roughly descending order of importance:

The parties who would implement these recommendations are not identified in this report since the Panel assumes that responsibility for implementation would be allocated according to a combination of current government agency mandates and activities, industry permit requirements, and input from citizen or scientific advisory groups (see final recommendation).

Fisheries

Despite heavy recreational activity and industrial use, Lake Wabamun is in moderately good condition. The most serious problem is with the fish community. As a result of commercial fishing, sport overfishing, and destruction of fish habitat, walleye have disappeared from the lake. Few pike survive long enough to reach reproductive age. Lake whitefish have not successfully reproduced for several years.

- *We recommend that commercial fishing be eliminated altogether, and that sport fishing be restricted to catch and release until populations recover to more normal age structures.*

Past efforts to re-introduce walleye have been unsuccessful. High hooking mortality from catch and release angling is probably responsible.

- *We recommend that any future attempts to reintroduce walleye be accompanied by total closure to angling of areas of the lake where walleye congregate, until several age classes are established.*

While great efforts have been made to reduce industry-related fish mortalities, they are still significant and in some cases unpredictable in occurrence. They are, however less important than mortalities caused by angling or commercial fishing.

- *We recommend continued vigilance to prevent and correct fish mortalities. These mortalities should also be taken into account in management and allocation of the fisheries resource.*

Weed harvesting is a relatively insignificant source of direct fish mortality, but it causes a significant loss of fish habitat. Modifications of shoreline properties by cottagers have also resulted in significant loss of fish habitat.

- *We recommend that weed harvesting be discontinued, and that other prohibited destruction of fish habitat, including weedbeds, be monitored and enforced according to the Canada Fisheries Act.*

Lake level, outlet, and water balance

The outlet of Lake Wabamun has been repeatedly and illegally modified and vandalized since 1912 by different groups wishing to regulate lake levels at either very high or very low levels. As a result, 1.5 km of stream channel has been rendered useless as fish habitat. Stabilization of the lake's water level has had an adverse effect on fish spawning and nursery habitats.

- *We recommend that the weir at the outlet be modified to act as a fish passage to ensure that the upper section of Wabamun Creek can be utilized. This could be done by installation of an appropriate culvert under the roadway that presently acts as a weir, sealing the illegal outlet, and restoring the original channel of the outlet stream, following a qualitative and quantitative assessment of fish habitat. We also recommend that the level of the lake be allowed to fluctuate seasonally and naturally, with the only human intervention being the use of the Wabamun Lake Water Treatment Plant (WLWTP) to replace water that is used or diverted from the lake for industrial activity. The amount used by industry can be accurately predicted from a water balance model, although precipitation measurements need to be improved by making measurements within the watershed of the lake.*
- *Precipitation collections should be made at two or more locations in the lake Wabamun watershed to improve the performance of the water budget model, which is critical to predicting the water needed from the WLWTP.*
- *Reclamation of mined land in the catchment of Lake Wabamun should approximate original land cover as closely as possible.*

Eutrophication

Although there is some evidence of eutrophication during the 20th century, monitoring records since 1980 indicate that the lake is currently stable. While phosphorus originates from external nutrient input, its recycling between water and sediment can greatly intensify eutrophication. If this "internal loading" from sediments increases, it can be very difficult and take decades to reverse.

- *We therefore recommend the implementation of a program designed to prevent further increases in external loading to Lake Wabamun, that would rely on enforcing more stringent guidelines for land-use changes, cottage development, waste disposal and use of fertilizer, as well as public education. We recommend that the lake monitoring program for chemistry and plankton that has been carried out for the last 20 years be reviewed and continued in a consistent manner. Consideration should also be given to monitoring of benthos and fish.*

Changes to Lake Chemistry

Lake Wabamun has increased slowly in salinity, as a result of evaporation in the absence of outflow since 1992, and the chemical inputs from the WLWTP. The increase is not rapid enough

to expect major changes to the lake's biota. The actions recommended above for lake outflow and water level should suffice to protect the lake for the foreseeable future.

Fecal Coliforms

The relatively high frequency with which fecal coliform counts on public beaches exceed guidelines for bathing is of some concern.

- *We recommend that further investigations be made to reveal the source of the coliforms. If the source cannot be eliminated, it may be necessary to move some of the beaches, or restrict human use.*

Trace Metals and PAHs

Power plants in the vicinity of Lake Wabamun have increased the inputs of several trace metals into the lake. Metal levels in the lake's water meet CCME Guidelines (CCME 2001a), but some metals in sediments are above guidelines for the protection of aquatic life. Despite this, metals do not appear to have caused detectable changes in the aquatic community. They are not a human health concern for recreational uses of the lake.

Mercury deposition to the lake's sediments has increased several-fold over background. Comparison with other central Alberta lakes and with earlier sediments indicates that increases are largely the result of regional emissions, in addition to long-range transport of industrial emissions from other areas. Almost all fish in Wabamun Lake are within mercury consumption guidelines for occasional users. Occasional large pike exceed the guidelines, but similar conditions are observed in other Alberta lakes. There is some concern for subsistence consumers, such as the Paul Band, because a moderate number of northern pike exceed consumption guidelines for subsistence use. If the pike population is allowed to recover as recommended, some precautionary measures might be needed if large pike are eaten frequently.

- *We recommend that trace metal studies now conducted by several agencies be coordinated to ensure that consistent sampling and analytical protocols are used, and that metals be included in a revised monitoring program. Mercury concentrations in northern pike should be monitored closely. We recommend the adoption of the recommendations of the CASA November 2003 report for reducing mercury emissions from the power plants as a long-term precautionary measure.*

In addition to natural sources, power plants and other fossil fuel burning activities have caused significant increases in polycyclic aromatic hydrocarbons, some of them known carcinogens, at present these contaminants are well below toxicity thresholds in lake water.

- *Trace metals and PAHs should be periodically assessed by paleoecological sampling, as described in the report.*

Dredging, Disinfection By-products and Thermal Effluents

We found that these three topics required no action, for a variety of reasons.

Dredging does not appear to be likely to provide significant benefits to the lake. It would require lengthy and thorough investigations to ensure that fish habitat was not destroyed.

- *We do not recommend dredging at this time.*

Disinfection by-product concentrations for the Wabamun Lake Water Treatment Plant are low, and below thresholds where effects on human or animal health would be expected. Although little is known about effects on aquatic life, concentrations in the discharge are low and vastly diluted by the volume of the lake.

- *Disinfection by-products are not of concern.*

The thermal effluent from the Wabamun Power Plant will cease as the Plant is decommissioned. Appropriate measures have been taken to mitigate the effects of the thermal effluents. However, the loss of the open water region of the lake in winter after the thermal effluent ceases may result in possible oxygen depletion under ice.

- *We recommend that follow-up studies should investigate the possibility that oxygen depletion under winter ice might occur after heated effluents cease.*

Additional Recommendations

Many of the past studies of Wabamun Lake have been undertaken by Alberta Environment staff or by consultants hired by TransAlta in response to public perception. Some of the perceptions did not justify scientific study, and some other issues were simply not amenable to scientific investigation. Examples include disinfection by-products and dredging.

At present, there are several stakeholder groups that independently pressure Alberta Environment or TransAlta with their own interests.

- *We recommend that a permanent citizens panel, whose objective it is to protect the health of Wabamun Lake, needs to be established and maintained. This panel must have members who are selected by, and representative of, the community of Wabamun Lake users. Representatives of various interest groups, as well as TransAlta and government agencies should also be included in the membership. A parallel scientific panel, consisting largely of independent scientists but including representation from Alberta Environment and TransAlta should be formed to advise the citizens' panel on the scientific value of any proposed studies.*

Introduction

Lake Wabamun is one of the most heavily used lakes in Alberta. Many of the modifications to the lake occurred before records were kept, or before scientific study of the lake began. In many cases, this makes it difficult to deduce the original condition of the lake. Since the 1970s, there are reasonably clear monitoring records and a large number of studies to investigate particular aspects of the lake and its response to various human stresses. In what follows, we use a combination of historical records, paleoecological investigations and contemporary scientific studies to deduce the current condition of the lake and how it has changed in the 20th Century. We make recommendations for managing future human activity in the lake and its watershed, in order to protect the ecological integrity of the lake.

A Brief History of Development around Lake Wabamun

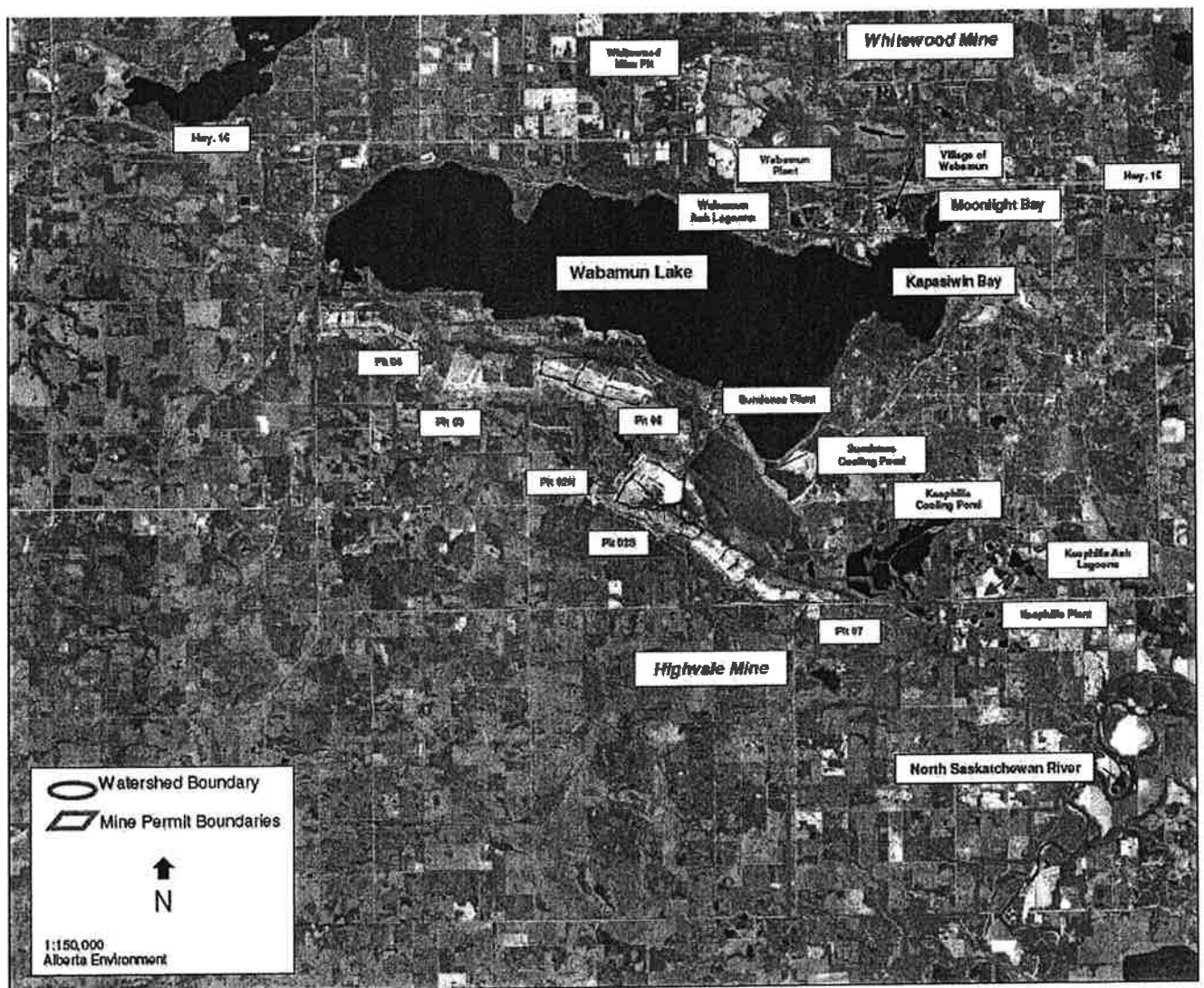


Figure 1. Lake Wabamun and its catchment, showing major features referred to in the text

Lake Wabamun, situated about 60 km west of Edmonton along the Yellowhead Highway (Figure 1), is one of the most popular recreational lakes in Alberta. The lake is large and shallow, 19.2 km long and 6.6 km wide with a surface area of 82 km², a mean depth of only 6.3 m and a maximum depth of 11 m (Mitchell and Prepas 1990). The watershed of the lake is small, only about 3 times the surface area of the lake. The drainage basin has at least 35 small drainage courses that convey water from spring runoff and summer storms to the lake. Several streams flow continuously. Groundwater is also an important source of water to the lake. The water level of the lake has fluctuated up to 1.1 m over a long-term cycle of 7 to 10 years during the 20th century (Figure 2).

The main features of human development surrounding the lake (Figure 1) are the village of Wabamun, a number of summer villages and subdivisions on the lake shore, the Yellowhead Highway and CNR railroad tracks paralleling the north shore, coal mines north and south of the lake, TransAlta's Wabamun and Sundance power plants, cooling ponds for the Sundance and Keephills power plants, Wabamun Lake Provincial Park at Moonlight Bay, a golf course, and the Paul Band First Nation Reserve at the east end of the lake. The surrounding countryside is rolling aspen parkland, forest and agricultural land.

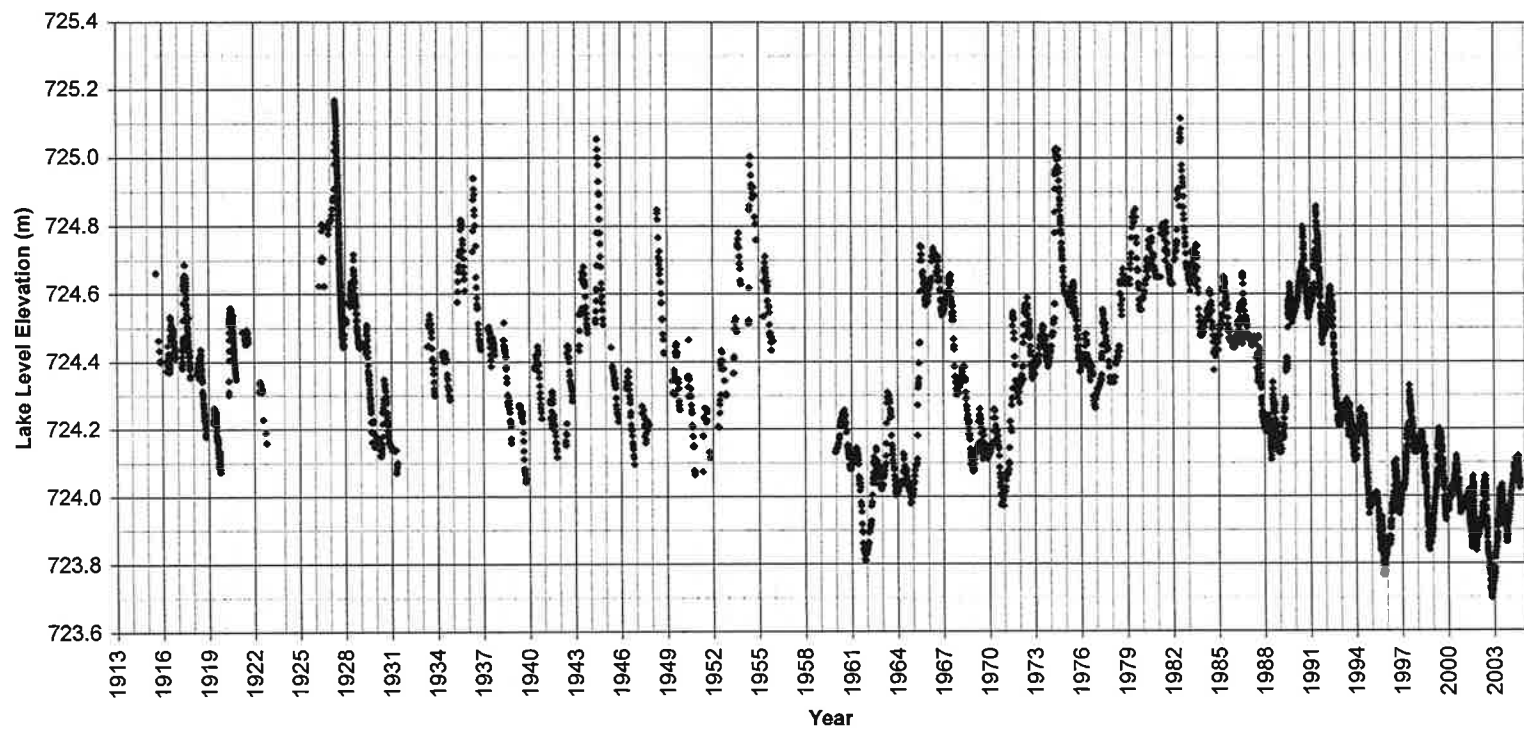
Non-aboriginal exploitation of the fisheries began in the mid-19th century. It intensified once the railroad reached the lake in the early years of the 20th century, facilitating access for commercial and sport fishermen. Settlers from Edmonton and area began visiting the lake around 1910, taking advantage of organized weekend railway excursions (Mitchell and Prepas 1990). Cottages began to spring up around the lakeshore during this period. Summer villages were built at Lakeview on Moonlight Bay and at Kapasiwin.

The cottage development at Lake Wabamun has grown to be quite dense compared to other Alberta lakes. In 1996, there were 1361 developed lots around the lakeshore, 1173 of which were occupied (Golder Associates 1997). About 151 of these are listed as permanent residences, although the majority of cottages throughout the Wabamun area are capable of providing extended year round or "permanent" use. Half of these cottages are within the summer villages of Seba Beach, Kapasiwin, Point Alison, Lakeview and Betula Beach; the remaining cottages are in the county of Parkland. The village of Wabamun had a population of 601 permanent residents in 2001 (Statistics Canada website). Many of the people living in the village work at TransAlta's power plants or coalmines.

The number of cottages, and easy access to the lake have resulted in heavy fishing pressure since the mid 20th century. For much of its history, the lake has supported a commercial lake whitefish fishery. Fish are also taken by area residents for domestic use. Winter recreational angling targets lake whitefish, while northern pike are primarily sought during the summer months. Decades of heavy harvests by angling and netting have severely impacted the fishery. Large northern pike have become rare, and walleye have been extirpated from the lake. Lake whitefish have had poor reproduction for the past seven years. Fish habitat has been destroyed at numerous locations around the lake and industry-caused fish kills are a periodic problem.

Wabamun Lake at Wabamun (05DE002)

Recorded Lake Levels for the Period of Record*



* 2004 data considered preliminary. Data source: Water Survey of Canada. Chart produced by Water Assessment Team, Alberta Environment.

Figure 2. Historical surface levels in Lake Wabamun.

The Lake Wabamun area also serves a number of commercial and industrial users. The first coalmines in the area began as underground operations in 1910 and as strip mines in 1948. In 1956, a power plant was constructed along the north shore at the village of Wabamun. The first two units were commissioned in 1956 (66 MW) and 1961 (66 MW), respectively. Originally, both were gas-fired, but the first was converted to coal-fired in 1963 and the second in 1983. The third unit (150 MW) was commissioned as a coal-fired unit in 1961, and unit four (300 MW, also coal fired) was commissioned in 1966. The Wabamun Plant is now undergoing phased decommissioning. Unit 3 was shut down permanently in November 2002, units one and two will be shut down in late 2004 and unit four will be shut down in 2010. The Wabamun Plant uses lake water for cooling, and cooling water discharge is returned to the lake via a canal. As a result, a large portion of Kapasiwin Bay remains ice-free in winter Golder Associates (1997).

A second, much larger power plant (Sundance) was constructed in 1970, followed by Keephills in 1983. The Sundance Plant used lake water for cooling when it first began operations, but has since used a large cooling pond created in 1975 with the berming of Goosequill Bay, a large wetland complex in the southeast corner of the lake. The Keephills plant relies on a different cooling pond (Table 1). The Genesee plant, added in 1989, is not in the watershed of Lake Wabamun, although the lake receives airborne emissions from the plant.

At present, the four power plants generate 4000 MW. As of 2003, 48% of the province's installed generating capacity was coal-fired (CASA 2003). Together, the coal-fired plants emit 65% of airborne mercury from industrial sources in the province, as well as several other trace metals, sulfate, particulates, water vapour, nitrogen oxides and polycyclic aromatic hydrocarbons. About 74% of Alberta's CO₂ emissions from coal-fired power plants are emitted from the power plants near Lake Wabamun (CASA 2003).

To compensate the lake for water losses resulting from power plant operations, reductions in effective drainage basin size and mine interceptions of ground water, treated water from the Sundance cooling pond has been discharged to the lake since 1997. The Wabamun Lake Water Treatment Plant (WLWTP) treats the cooling water to assure water quality and to eliminate alien species that could enter the pond with make-up water from the North Saskatchewan River. The plant uses a combination of ozone and chlorine for disinfection plus filtration and clarifying in order to treat the water to meet Alberta Environment requirements before discharge into Lake Wabamun. A second treatment plant at the same site began operation in 2001. At present, the plants are capable of treating 23 million cubic meters of water per year. The water is within three degrees of lake temperature when discharged (Golder Associates 1997).

Table 1. Key features pertaining to the power plants in the Lake Wabamun area

Power Plant	Date of Commission	Capacity (Mega-watts)	Condenser Cooling	Ash Handling	Mine Drainage
Wabamun Power Plant	1956	398	Intake of cooling water and return of warm water to Wabamun Lake	Ash lagoon; Fly ash disposal area and off site sales	Whitewood Mine to Wabamun Lake via ash lagoon
Sundance Power Plant	1970	2020	Intake of cooling water and return of warm water to Sundance Cooling Pond; water source North Saskatchewan River	Ash disposal area	Highvale Mine currently to Sundance Cooling Pond, history of discharge to Wabamun
Keephills Power Plant	1983	766	Intake of cooling water and return of warm water to Keephills Cooling Pond; water source NSR	Ash lagoon	Highvale Mine currently to Sundance Cooling Pond
Genesee Power Plant	1989	820 (+ additional 1455 by winter 2004-05)	Intake of cooling water and return of warm water to Genesee Cooling Pond; water source North Saskatchewan River	Ash disposal area	Cooling pond

The first coalmines in the area began as underground operations in 1910, and as strip mines in 1948 (Mitchell and Prepas, 1990). As power generation developed, two coal strip mines were developed in the basin, the Highvale Mine to the south and the Whitewood Mine to the north. By the end of 2003, coal mining in the basin had disturbed 5593 ha, or 22% of the lake's catchment, and 45% of the mined area has been reclaimed. To date, 16% of the historically mined area has received reclamation certificates from Alberta Environment. Most of the reclamation on the south shore of the lake associated with the Highvale Mine has been to agricultural land, rather than the mosaic of forests and wetlands originally found in the landscape. Reclamation to the north of the lake associated with the Whitewood Mine has been largely agricultural, but has included wetlands and forested areas. Most of the unmined part of the catchment has been cleared for agriculture. The effect of the power plants and coalmines on the lake and on other users continues to be a concern. Mine drainage from the Highvale Mine was routed to the lake via Beaver Creek until the mid-80s when it was diverted to the Sundance cooling pond. This diversion resulted in a substantial reduction in the lake's active drainage basin size and supply of water. Over the years of operation, mine drainage from the Whitewood Mine has been directed to the watershed within which mining activity takes place. Currently, the majority of Whitewood mine drainage is directed towards the Lac Ste. Anne watershed, although a portion is routed to Wabamun Lake through the Wabamun Power Plant ash lagoon.

Since 1912, a number of water control structures have been built at the lake outlet; however, agreement on a suitable lake water level has been the subject of controversy for many years. Periods of high water result in complaints of flooding from residents in low-lying areas. Conversely, periods of low water result in complaints of being "left high-and-dry" by residents

on higher ground. Little attention has been paid to needs of the fishery in these manipulations of the lake's water level and outflow.

There is abundant natural aquatic vegetation along shorelines and in the bays, but the water in Lake Wabamun is usually fairly clear, and Cyanobacteria (blue-green algae) blooms are rare. The lake has natural beaches along much of the shoreline, but emergent vegetation (e.g., cattails and sedges) restricts recreational use. Since the 1920s, boaters and lakeshore property owners have complained about Lake Wabamun's prolific aquatic weed growth that chokes the bays and washes up on shore (P. Mitchell, pers. comm.). Nuisance growth of the Canada waterweed (*Elodea longivaginata*) in the early 1970s produced floating mats of vegetation that affected recreation and raised concerns about deteriorating water quality. The population of *Elodea* declined rapidly in 1977 and is now much less common (Golder Associates 1997).

The Paul Band signed a treaty in 1876 and settled on the eastern edge of Lake Wabamun. In 1996, the total population of the band was 1397, although only 856 individuals were living on the Paul Band Reserve in 1996 (Department of Indian and Northern Affairs, pers. comm.).

The lake provides a wide variety of recreational opportunities, including camping, angling, ice fishing, power boating, sailing, swimming, birding, golf, and others. The provincial park has a total of 287 campsites, extensive day-use areas, boat launch, and a sandy artificially made beach. Whitewood Sands campground, located on the north end of Lake Wabamun, has a total of 38 campsites (Alberta Tourism, pers. comm.). A scout camp and commercially operated campgrounds are also located on Lake Wabamun. There are boat launches, piers and day use areas at Seba Beach and the village of Wabamun, as well as three day-use areas in the county of Parkland. The lake is an important regional centre for sailing with three sailing clubs.

Additional land uses in the drainage basin of Lake Wabamun include a golf course, agricultural cropland, and cattle grazing (often with unrestricted access to streams flowing into the lake).

In addition to being one of the most popular recreational lakes, Lake Wabamun also holds the distinction of being one of the most studied lakes in Alberta. Since at least 1942, scientists have been conducting studies on the lake, although the majority of studies relevant to management of the lake have been conducted over the past 25 years. As of 1996, there were well over 300 reports and publications (Golder Associates 1997), and there have been a large number of studies since that time. Together, these reports provide a great deal of detailed information about the lake ecosystem in the past quarter century.

The majority of the studies on Lake Wabamun were conducted from the mid 1970s to early 1980s. Another burst of activity in the late 1990's and into 2000-2003, was primarily due to public concern about TransAlta's activities on the lake. Little information is available on the lake prior to 1970, nor are there many data, other than Alberta Environment monitoring data, for a period of approximately 6 years in the mid to late 1980s.

As a result of the small watershed of the lake (Figure 1), the water residence time of the lake is extremely long, estimated by Mitchell and Prepas (1990) to be approximately 100 years. Outflow

has occurred intermittently in the 20th century, but not since 1992, causing the lake to increase in salinity.

In the remainder of this report, we summarize scientific and historical evidence for changes in the physical, chemical and biological properties of Lake Wabamun as the result of the developments outlined above. Where information is sufficient, we make recommendations for future management of the lake. Where evidence is insufficient, we recommend future study to allow better-informed choices to be made on current or future potential problems. The lack of relevant scientific studies before 1970 and the rapid development of the lake and its catchment for several different purposes before studies commenced make it difficult in some cases to discern the major causes of changes to the lake.

Lake Level and Outflow Regulation

There are no records for lake levels or outflow volumes before 1915. Paleoecological analyses using stable isotopes in sediments (Fritz and Krouse 1972) and salinity-sensitive diatom fossils (Hickman et al. 1984) suggest that the lake passed long periods in the Holocene as a closed or near closed basin (i.e., little or no outflow). Other studies indicate that the climate of the western prairies averaged about a degree warmer than in the mid 20th century (de Menocal et al. 2000).

Lake Wabamun is a headwater lake and the few inflow streams are small. Its catchment is small, and most of the precipitation falling on it is lost to evaporation and transpiration by vegetation. Precipitation on the surface of the lake is by far the largest input of water to the lake. Similarly, the largest loss of water is to evaporation from the surface (Seneka 2002). Groundwater comprises approximately 4% of inflows and 10% of outflows for Lake Wabamun and modelling indicates that there is a natural net loss of groundwater from the lake (Seneka 2002).

A water budget for the lake appears to predict observed lake levels for the past 20 years reasonably well (Seneka 2002), although precipitation, a critical input term, is estimated from two sites well outside the catchment of the lake. Several factors complicate the construction of a natural (pre-industrial development) water budget.

The greatest hindrance to constructing a detailed pre-industrial or 'natural' water budget is lack of hydro-climatic data prior to 1982. As we move back in time, data must be transposed from farther and farther away, thus reducing the ability to model recorded levels accurately. In addition, many of the wetlands in the catchment have been destroyed, and forested land in the southern part of the watershed has largely been reclaimed as agricultural land. Both of these activities affect water retention in the catchment. Finally, coalmines are known to intercept groundwater flow into the lake, and this interception has increased slowly during the decades of mining activity around Wabamun Lake. All of these factors contribute to the lack of an accurate pre-industrial water budget, making it difficult to prescribe a lake level and range of fluctuation that approximate the historical condition of the lake. However, there were water level records prior to 1950, the period before more significant industrial activity began (Figure 2). If the period of these records is a reasonable representation of longer-term climate, the records can imply a natural regime and range of fluctuation, even though outlet tampering and other anthropogenic

In 1927, following a consensus agreement between communities on the lake and in response to residents' complaints about high water levels, the illegal outlet was dammed with sheet piling to control the lake level at 2372.1 feet (CNR datum; = 723.49 m). Canadian National Railway (CNR) data are not compatible with geodetic elevation and cannot simply be converted to current elevations. Water Survey of Canada has validated the historical lake level database including what they consider to be appropriate conversion factors for CNR data. The highest lake levels on record (725.168 m) occurred on May 9, 1927. The weir was rebuilt in the 1940s. In the 1960s, the original wooden weir was burned and replaced by one of steel sheet piling. This weir, at approximately 724.95 m, controlled the lake level for the next two decades.

In the 1980s, vandals dug a ditch to bypass the steel weir. Lake levels decreased by about 36 inches (0.9 m). In 1988, then Minister of Environment Ken Kowalski met with Lake Wabamun residents. There was unanimous agreement to restore historic lake levels. Considerable controversy has existed concerning the proper level at which to control the lake. Much of this stems from the conversion from the original benchmark in Imperial units used as a reference by the CNR to Geodetic Survey Data and metric units in the early 1980s. It is generally agreed that there is a difference of 4.94 feet between the two benchmarks (Alberta Environment 1993). It has been claimed that an error in calculation reduced the level of the reconstructed weir by 18 inches.

The outlet was again controlled in 1988, by a roadbed at 725 m. It was lowered to 724.55 m in 1990. The roadbed was capped with a concrete apron in 1998 at the same elevation. The reasons for this reduction in controlled water level are not clear, but complaints of flooding and bank erosion are currently lodged when lake levels exceed the present sill by 20-30 cm, i.e. below 724.95 m. The height of the weir remains a subject of controversy, and a lawsuit is reportedly in progress.

The last outflow from the lake occurred in 1992 (Figure 2). As described later, the lower lake levels observed in 2002-2003 have reduced the volume of the lake by 17% relative to the volume coincident with the level of the outflow, caused considerable loss of fish habitat, contributed to the increasing salinity of the lake basin, and exposed large tracts of beach in some parts of the lake. In part, this low level was caused by several years of drought, but past water losses attributed to TransAlta are also partly responsible. TransAlta's deficit is now being repaid with water from the Lake Wabamun Water Treatment Plant.

It was obvious from the committee's helicopter over flight on 28 July 2004 that the current lake level has been lower than historic levels for some time, as evidenced by the incursion of shrubs and small trees into older beds of emergent aquatic vegetation. New emergent weed beds are forming near the recent water level, but are still not fully developed.

Effects of water level and regulation on lake chemistry

As described in detail later, Lake Wabamun has increased in salinity in the past 10 years, from an average of 248 mg/L to 302 mg/L as total dissolved solids (TDS). As a result of dry conditions, there has been little runoff entering the lake and the near lack of outflow from the lake causes chemicals that are not biologically or chemically very reactive such as sodium and

sulfate to become more concentrated as water evaporates. Also, sodium, sulfate and chloride are added to treat the water discharged to the lake by the WLWTP, further increasing lake concentrations.

The lack of water renewal also ensures that phosphorus, the nutrient most likely to cause eutrophication, that enters the lake will be trapped with 100% efficiency. In short, some water renewal is desirable to ensure that the lake chemistry remains within levels that do not pose a risk to the ecology of the lake.

Effect of water level regulation on fish passage and fish habitat

Because Lake Wabamun is a headwater lake, there are no upstream sources of fish. The outflow stream (Wabamun Creek) historically provided the only route for fish to enter the lake from the North Saskatchewan River. Only 8 of the 26 species of fish in the North Saskatchewan are found in the lake. This may be evidence that the outflow was a difficult, and probably sporadic route for fish passage, or that the lake did not contain suitable habitat for some fish species from the North Saskatchewan River.

For the past half century, the outlet has not been effective as a fish passage. The first 1.5 km of outlet channel has also been inaccessible as fish habitat since the illegal outlet was dug in 1912. Because of the few small inflows to the lake, the natural outlet was probably used as spawning and rearing habitat, as is commonly observed in central Alberta lakes. Various activities (i.e., weir construction and alteration) designed to control lake levels may result in the loss of a naturally fluctuating water level in Lake Wabamun. These fluctuations have occurred for thousands of years and local fish populations likely are adapted to require periodic low and high water levels. For example, high water creates flooded meadows and marshes that are ideal pike spawning and nursery habitat. Lake whitefish require submerged rocky or gravel bars as spawning substrates. These can be exposed at low water levels, reducing spawning habitat. Natural water level fluctuations are also necessary for maintaining a variety of vegetation in fish habitats needed by several species of small fishes. Construction in 1990 of the current shallow, broad weir control structure has therefore had several important effects, including limiting of sufficient passage for fish, and dampening of lake level fluctuations. As lake level declined, exposure and loss of shoreline weedbeds has undoubtedly contributed to additional loss of fish habitat. Finally, conversion of once-flooded weedbeds to lawns and beaches by cottagers not only limits the possibility of immediate fish habitat use in the event of a wet year, but also contributes to local opposition to management of lake recovery to higher, historical levels.

Recommendations:

Precipitation, a critical factor for the lake's water budget, should be measured in the basin, preferably at several locations. This would improve the ability to model precise water budgets for the lake and its watershed.

When TransAlta has repaid its debt to the lake, the lake level should be allowed to fluctuate naturally (similar to conditions at nearby lakes such as Lac Ste. Anne, Lake Isle, and Pigeon Lake), with water controls at Lake Wabamun only used to mitigate the losses caused by local industry. Contributions from industry that are needed to allow natural fluctuations in lake level can be predicted accurately from the water budget model, once precipitation monitoring in the