September 15, 2020

Impact Assessment Agency of Canada (IAAC/CEAA)
National Resources Conservation Board (NRCB)

Delivered by email

Attention:
Jennifer Howe (IAAC / CEAA), ceaa.springbank.acee@canada.ca
Laura Friend (NRCB) (laura.friend@nrcb.ca)

Re: "Upstream" on the Elbow River, Reasons to Stop the Proposed Springbank Temporary Reservoir (SR1)

Redwood Meadows is situated a few minutes upstream of the proposed SR1 intake. It is evidently prevalent the GOA has not taken into consideration the direct negative impact and all the problems SR1 creates for residents of Redwood Meadows. Residents continue to have numerous concerns such as insufficient flood management and need for a permanent water source during a drought and wildfires. We are directly affected during a flood when the SR1 Intake likely becomes plugged by the 70-foot trees that are eroded, and all the rip rap from the berms that are swept down the Elbow River. A plugged Intake could then quickly back up water and flood Redwood Meadows. Redwood Meadows has already been entirely evacuated in 2013 because of minimal flood control, specifically the dirt berms partially failed. We are also directly affected because our children in times of flood will not be able to be bused on Springbank Road. Instead they will have to be bused on the busy Trans Canada highway to get to the Springbank Schools if SR1 goes ahead. Many problems are described in the attached document. A more beneficial and multipurpose option continues to be proposed of McLean Creek (MC1) that is Best for All Albertans who live on the Elbow River. In addition, MC1 is becoming an even better option given the New COVID World where thousands of Albertans appreciate recreation activities in the Bragg Creek area.

Residents upstream of the proposed SR1 were forgotten in the 2013-2014 flood control GoA decision-making process. We now are putting our concerns on record in this document, and we request that they are addressed by the GoA.

Redwood Meadows signees of the following August 26,2020 letters respectfully request that IAAC (CEAA) and NRCB decline the Proponent's application for the SR1 project. Over a two-week period, three volunteer residents of Redwood Meadows went door knocking to explain SR1 and to ask for signatures of support for this document. The following document represents the views of 175 Redwood Meadows residents who have signed the letter. Only 3 Residents declined to sign--one stated he thought it was already decided anyways so this letter didn't matter. It is noted that the Townsite staff, and the Redwood Meadows' Council align with the Tsuut'ina decision to withdraw their objections to SR1.

Signed by only adult **Residents of Redwood Meadows in the letters/attachments on the next 15 pages.**

Organized by Dr. Karen Massey, member of the Elbow River Sustainability Alliance, and

Long time resident at 1 Redwood Meadows Court, Redwood Meadows, Ab T3Z 1A3

Cc via E-Mail: John Barlow, MP (john.barlow@parl.gc.ca),

Miranda Rosina, MLA (miranda.rosin@assembly.ab.ca),

Martin Ignasiak (Mignasiak@osler.com)

Ric McIver (transportation.minister@gov.ab.ca)

Alberta Transportation Springbank Project (Springbank-project@gov.ab.ca)

CEAA (CEAA.Springbank.ACEE@gc..ca)

Rocky View County Councillor Kim McKylor (kmckylor@rockyview.ca)

Rocky View County Councillor Mark Kamachi (mkamachi@rockyview.ca

Grant Kelba of Kamp Kiwanis (grant@kelbacorp.com)

Taxpayer Federation, Ethics Commissioner, Lisa Kleebaum (lisa.kleebaum@sait.ca)

Roy Whitney, Chief of Tsuut'ina Nation, c/o Andrew One Spot Jr. aonespot@tsuutina.com

Paul Sawler, Mayor, Townsite of Redwood Meadows, psawler@redwoodmeadows.ab.ca

Scott Ackerman, Deputy Mayor, Townsite of Redwood Meadows, sackerman@redwoodmeadows.ab.ca

Jaime Mitchell, Chief Administration Officer, Redwood Meadows, jmitchell@redwoodmeadows.ab.ca

Karin Hunter, President, Springbank Community Assoc. springbankcommunityassociation@gmail.com

August 26, 2020

Impact Assessment Agency of Canada (IAAC/CEAA)
National Resources Conservation Board (NRCB)

Delivered by email

Attention:
Laura Friend (NRCB)
Jennifer Howe (IAAC / CEAA), ceaa.springbank.acee@canada.ca

Re: "Upstream" on the Elbow River, Reasons to Stop the Proposed Springbank Temporary Reservoir (SR1)

The Town of Redwood Meadows is situated upstream of the proposed SR1 intake. It is evidently prevalent the GOA has not taken into consideration all the problems and ill effects SR1 will have on the community and residents of Redwood Meadows. Residents in the town continue to have numerous concerns about insufficient flood management and related problems. Many problems are described in the attached document.

Residents upstream of the proposed SR1 were forgotten in the 2013-2014 flood control GoA decision-making process. We now need to have our concerns on record and addressed. We propose a multipurpose flood control option, McLean Creek (MC1) that is Best for All Albertans who live upstream and downstream on the Elbow River.

We respectfully request that IAAC (CEAA) and NRCB decline the Proponent's application for the SR1 project.

Signed by **Residents of Redwood Meadows**

Dr. Karen Massey, 1 Redwood Meadows Court, Redwood Meadows AB, T3Z 1A3

Name	Printed Name	Address in Redwood Meadows
	JAY FUNK	13 Redwood Meadows Close, Redwood Meadows, AB, T3Z 1A3
	Tara Funk	13 Redwood Meadows Close Redwood Meadows AB T3Z 1A3
	KEN BARRIE	15 REDWOODS MEADOWS CLOSE REDWOOD T3Z1A3
4.	Natasha L. Barrie	15 Redwood Meadows Close, Redwood Meadows, AB T3Z1A3

EM-1
P. 1 of 2

	Signature	Printed Name	Redwood Meadows Address	
	[illegible]	Alice Russell	14 RM Close, Redwood Meadows AB T3Z1A3	EM
	[illegible]	Ann Russell	14 Redwood Meadows Close, RM, AB T3Z1A3	EM
	[illegible]	Angela Merlo	12 Redwood Meadow close	" EM
	George Achilleos		12 Redwood Meadows Close	EM
5	[illegible]		10 Redwood Meadows Close	EM
	[illegible]		6 Redwood meadows close T3Z1A3	EM
	[illegible]	Chris Ulan-Kvitberg	4 Redwood Meadows Close T3Z1A3	EM
	[illegible]	Dom Stadel	1 Redwood Meadows Close T3Z1A3	EM
	[illegible]	Jessica Stadel	1 Redwood Meadows Close T3Z 1A3	EM
10	[illegible]	Emily Stadel	1 " Redwood Meadows " Close "	EM
	K Stadel	Krysten Stadel	1 " Redwood Meadows Close "	EM
	[illegible]		1 " Redwood " Meadows " Close	EM
	[illegible]	Tasha Moritz	11 Redwood Meadows Close T3Z 1A3	EM
	[illegible]	Zdenek Necap	7 Redwood Meadows Close T3Z 1A3	EM
15	[illegible]	Susanna Santala	7 Redwood Meadows " Close T3Z 1A3	EM
	David Dvorak		5 Redwood Meadows Close	EM
	[illegible]	Liam Tranter	32 Redwood Meadows drive T3Z1A3	EM
18	[illegible]		28 Redwood Meadows DR T3Z 1A3	EM

Cc via E-mail: Elbow River Sustainability Alliance (ERSA), Roy Whitney, Chief of Tsuut'ina Nation; Jason Kenney, Premier of Alberta; Ric McIver, Minister of Transportation; John Barlow, MP Foothills, Miranda Rosin, MLA Banff-Kananaskis; Paul Sawler, Mayor, Townsite of Redwood Meadows; Scott Ackerman, Deputy Mayor, Townsite of Redwood Meadows, Jaime Mitchell, Chief Administration Officer, Redwood Meadows.

EM-2

August 26, 2020

Impact Assessment Agency of Canada (IAAC/CEAA)
National Resources Conservation Board (NRCB)

Delivered by email

Attention:
Laura Friend (NRCB)
Jennifer Howe (IAAC / CEAA), ceaa.springbank.acee@canada.ca

Re: "Upstream" on the Elbow River, Reasons to Stop the Proposed Springbank Temporary Reservoir (SR1)

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Residents upstream of the proposed SR1 were forgotten in the 2013-2014 flood control GoA decision-making process. We now need to have our concerns on record and addressed. We propose a multipurpose flood control option, McLean Creek (MC1) that is Best for All Albertans who live upstream and downstream on the Elbow River. In addition, MC1 is becoming an even better option given the New COVID World where thousands of Albertans appreciate recreation activities in the Bragg Creek area.

We respectfully request that IAAC (CEAA) and NRCB decline the Proponent's application for the SR1 project.

Signed by **Residents of Redwood Meadows**

Signature	**Print Name**	**Redwood Meadows Address**	
Dr. Karen Massey	**Dr. Karen Massey**	**1 Redwood Meadows Court**	
	HM. Thornton	96 manyhorses Dr	Kw
	ROB MACLAE	1 SLEIGH DR	RMW
		5 Sleigh DR.	RMW
4	MURRAYSHANTZ	8 SLEIGH DR	RMW.

1 A-N 1

Kw

Continued, Signatures of Residents to stop SR1

	Signature`	Print Name	Redwood Meadows Address	
1	Colleen Shantz	Colleen Shantz	8 Sleigh Dr.	ZMS
		BART FRASCA	10 SLEIGH DR.	ZMS
		YVETTE FRASCA	10 SLEIGH DR.	ZMS
		DAVE DUNWAY	20 Sleigh Dr.	ZMS
5		Willow Carriere	22 Sleigh Dr	ZMS
		Curtis Carriere	22 Sleigh Dr	ZMS
		THOMAS MITCHELL	23 SLEIGH DR.	ZMS
	D. Hawkins	DANIELLE HAWKINS	23 SLEIGH DR	ZMS
		Isaac Sargent-Laskin	24 Sleigh Dr	ZMS
10		Jacobus E. NEL	25 Sleigh Dr.	ZMS
		TOBIAS G. NEL	25 SLEIGH DRIVE	ZMS
		Dr. J. Heeren	26 Sleigh Dr.	ZMS
	Brent Clarke	BRENT CLARKE	31 SLEIGH DR	ZMS
14		Connie Tennison	39 Sleigh Dr.	ZMS

KW

KW

Continued, Signatures of Residents to stop SR1

Signature	Print Name	Redwood Meadows Address	
	Donna Rud	#12 Sleigh Dr.	HW
	Tony McCrea	#7 SLEIGH DRIVE	HW
		#21 Sleigh Drive	HW
	DANIEL LUTHER	#3 Sleigh Dr.	HW
	JOHN REMINGTON	#6 SLEIGH DR.	HW
	BRUNO GEPT	5 SLEIGH DR.	HW
	JOHN HARVEY	29 SLEIGH DR	HW
	Adam Melardie	42 Sleigh Dr.	HW
	Jason Rozek	37 SLEIGH DR.	HW

3 C-N

Km

Pg 3 of 3

26 Km

August 7, 2020

Impact Assessment Agency of Canada (IAAC/CEAA)
National Resources Conservation Board (NRCB)

Delivered by email

Attention:
Laura Friend (NRCB)
Jennifer Howe (IAAC / CEAA), ceaa.springbank.acee@canada.ca

Re: "Upstream" on the Elbow River, Reasons to Stop the Proposed Springbank Temporary Reservoir (SR1)

The Town of Redwood Meadows is situated upstream of the proposed SR1 intake. It is evidently prevalent the GOA has not taken into consideration all the problems and ill effects SR1 will have on the community and residents of Redwood Meadows. Residents in the town continue to have numerous concerns about insufficient flood management and related problems. Many problems are described in the attached document including a more beneficial and multipurpose option that continues to be proposed.

Residents upstream of the proposed SR1 were forgotten in the 2013-2014 flood control GoA decision-making process. We now need to have our concerns on record and addressed. We propose a multipurpose flood control option, McLean Creek (MC1) that is Best for All Albertans who live upstream and downstream on the Elbow River.

We respectfully request that IAAC (CEAA) and NRCB decline the Proponent's application for the SR1 project.

Signed by **Residents of Redwood Meadows**

Name	**Address**	
Dr Karen Massey	1 Redwood Meadows Court	Km
Maggie Fortin	3 Wolf Dr. Redwood Meadows, AB	Km
C Fortin	3 Wolf Dr Redwood Meadows, AB	Km
Ross Reczek	6 Redwood Meadows Court	Km
Rebecca Parzer	8 Manyhorses Bay Redwood Meadows AB	Km
6 Kristine Mills	1 Redwood Meadows Court	Km

P.1-K

P.1 of 10 K

Aug 26 kw

July 24, 2020

Impact Assessment Agency of Canada (IAAC/CEAA)
National Resources Conservation Board (NRCB)

Delivered by email

Attention:
Laura Friend (NRCB) laura.friend@nrcb.ca
Jennifer Howe (IAAC / CEAA), ceaa.springbank.acee@canada.ca

Re: "Upstream" on the Elbow River, Reasons to Stop the Proposed Springbank Temporary Reservoir (SR1)

It is still prevalent the Government of Alberta (GoA) has not taken into consideration all the problems with respect to the ill effects the proposed SR1 will have on the Town of Redwood Meadows because the town is located upstream of the proposed SR1 intake. Residents in the town continue to have numerous concerns about insufficient flood management and related problems. Many problems are described in the attached document including a more beneficial and multipurpose option that continues to be proposed.

Residents upstream of the proposed SR1 were forgotten in the 2013-2014 flood control GoA decision-making process. We now need to have our concerns on record and addressed. We propose a multipurpose flood control option, McLean Creek (MC1) that is Best for All Albertans who live upstream and downstream on the Elbow River.

We respectfully request that IAAC (CEAA) and NRCB decline the Proponent's application for the SR1 project.

Signed by:

Barbara Grahame 34 Wolf Dr. Kw
8 Manyhorses Cres. Kw

Resident of Redwood Meadows

32 Wolf Dr. Kw

3

2K
2 of 10 K

Aug 26/20 Km

Residents of Redwood Meadows Sign to stop SR1

	Signature	Print Name	Address	
1	[signature]	SHELLEY SURBEY	3 MANYHORSES PK T3Z 1A2	Km
	[signature]	Julio Rojo	45 Wolf Drive Redwood Meadows	Km
	[signature]	Ambar Camacho	45 Wolf Drive Redwood Meadows	Km
	[signature]	DOUG MACARTHUR	1 WOLF CRESCENT, REDWOOD MEADOWS	Km
5	[signature]	Laurie MacArthur	1 Wolf Crescent	Km
	[signature]	Jonathan Gibbs	9 Wolf Crescent Redwood Meadows	Km
	[signature]	Christine Gibbs	9 Wolf Cres RWM	Km
	[signature]	Angela Madeiros	66 Wolf Drive	Km
	[signature]	Dara-Lee Snow	52 Wolf Dr. Redwood Meadows	Km
10	[signature]	Greg Kennedy	11 Wolf Cres	Km
	[signature]	Tracey Cowen	10 Wolf Cres	Km
	[signature]	N Cowen	10 Wolf Cres	Km
	[signature]	Jennifer Dickason	31 Wolf Drive	Km
	[signature]	Ann Foster	33 WOLF DR.	Km
15		Guenter Gottschling	39 Wolf Dr	Km
16	L Hobson	Linda Hobson	73 Wolf Drive, Redwood.	Km

3 K

3 of 10 K

August 26, 2020

Impact Assessment Agency of Canada (IAAC/CEAA)
National Resources Conservation Board (NRCB)

Delivered by email

Attention:
Laura Friend (NRCB)
Jennifer Howe (IAAC / CEAA), ceaa.springbank.acee@canada.ca

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We respectfully request that IAAC (CEAA) and NRCB decline the Proponent's application for the SR1 project.

Signed by **Residents of Redwood Meadows**

Dr. Karen Massey **1 Redwood Meadows Court**

	[signature]	DARRELL SHEPEL	88 REDWOOD MDWS. DR.	Km
	V. Luoma	Vivian Luoma	88 Redwood Meadows Dr.	Km
	RUDI DICK	[signature]	32 SLEIGH DR T3Z 1A1	Km
	JENNIFER ALDRED	[signature]	32 SLEIGH DR T3Z 1A1	Km
5	GREG SUCKEY	[signature]	3 Manyhorses Lane T3Z 1A1	Km

4 K

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Aug 26/20 KW

	Signature	Print Name	Address	
	Jessica Bolton	Jessica Bolton	20 Wolf Drive, Redwood Meadows, T3C 1A3	KW
	Anthony Bolton	Anthony Bolton	" "	KW
		ERIK ANDERSON	7 WOLF CL.	KW
	Franca Gosselin	Franca Gosselin	20 wolf dr	KW
5	Doug Epp	Doug Epp	20 wolf dr	KW
	Michelle Brandenburg	Michelle Brandenburg	84 Redwood Meadows Drive	KW
	Patricia Thompson	Patricia Thompson	45 Redwood Meadows DR	KW
	Steve Gasparovic	Steve Gasparovic	45 Redwood Meadows DR	KW
	Robbi Fergstad	Robbi Fergstad	51 Redwood Meadows Dr.	KW
10	Nancy Ross	NANCY ROSS	49 REDWOOD MEADOWS DR	KW
	Terry Ross	Terry Ross	49 Redwood Meadows Dr	KW
	Matthew Hair	Matthew Hair	80 Redwood Meadows DR	KW
	Jamie Hair	JAMIE HAIR	80 REDWOOD MEADOWS DR	KW
	Heather Hair	HEATHER HAIR	SAME	KW
15	Tamara Schirch	Tamara Schirch	17 Wolf Dr.	KW
	Norm Leong	Norm Leong	19 Wolf Dr. NW	KW
	ELIN KNITBERG	ELIN KNITBERG	21 Wolf Drive	KW
18	Patricia Barkshire	Patricia Barkshire	23 Wolf Drive	KW

Cc via E-mail: Elbow River Sustainability Alliance (ERSA), Roy Whitney, Chief of Tsuut'ina Nation; Jason Kenney, Premier of Alberta; Ric McIver, Minister of Transportation; John Barlow, MP Foothills, Miranda Rosin, MLA Banff-Kananaskis; Paul Sawler, Mayor, Townsite of Redwood Meadows; Scott Ackerman, Deputy Mayor, Townsite of Redwood Meadows, Jaime Mitchell, Chief Administration Officer, Redwood Meadows.

'KW' signed for Dr Karen Massey "

5K

5 of 10 K

Karen Massey

From: Karen Massey <kmassey@personainternet.com>
Sent: September 8, 2020 11:22 AM
To: 'Rob McFadden'
Subject: Reasons to stop SR1

Thank you Rob and Julie for your support. We are not giving up on this important problem to stop SR1 and build MC1.

In appreciation,
Karen Massey

From: Rob McFadden <ramtam1970@gmail.com>
Sent: September 8, 2020 8:39 AM
To: Karen Massey <kmassey@personainternet.com>
Subject: Re: Reasons to stop SR1

Thank you Karen. Julie and I will sign.

Rob McFadden 43 Wolf Dr
Julie Tampkins 43 Wolf Dr

On Mon, Sep 7, 2020 at 10:22 PM Karen Massey <kmassey@personainternet.com> wrote:

Hi Rob and Julie,

Thanks for chatting with me tonight. I just got home because it ended up being an interesting and talkative night for door knocking.

Thanks for agreeing to read the attached draft document to CEEA and to NRCB (Canadian Environmental Assessment Agency and the Canadian National Energy Board.

I have written this document over the past 4 months, with the help of many others in Redwood Meadows, and as part of the group I am in called the Elbow River Sustainability Alliance, formerly called Don't Dam Springbank. .

Your support in signing the letter to stop building SR1 would be appreciated. Please call me at the number below if you have questions. All Redwood residents would benefit from a permanent dam that can provide benefits such as:

1. FLOOD PROTECTION: , since dirt berms don't protect us in Redwood.
2. AQUIFER protection since floods will still flood basements since aquifers flow under the dirt berms
3. DROUGHT PROTECTION: There must be a dam upstream by 2036 when the flow of the Elbow River flow is predicted to diminish significantly resulting in Redwood Meadows, Bragg Creek and South Calgary will have a

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water shortage. This suggests that Redwood and all others upstream will need a permanent water source such as the Glenmore Reservoir already provides partially for South Calgary.

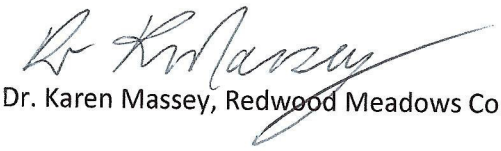
4. PERMANENT WATER SUPPLY FOR WATER BOMBERS when there are wildfires in the area. A wildfire already happened in Champion Lake in May 2018. The only thing that saved us was that the wind shifted direction.
5. RECREATION OPPORTUNITIES when there is a permanent dam upstream. Glenmore Reservoir provides recreation for sailboats and canoes. There could also be picnic and camping areas.

These are just a few reasons of why SR1 must be stopped, and a permanent dam must be built. It is well known by the Calgary Water specialists that a permanent dam will soon be needed by 2036 for Calgary, let's build it now and make the best use of taxpayers money.

Once you've read the document hopefully you will find enough reasons in the document to stop SR1 and instead, build a permanent dam,.

It would be appreciated if you could please send me an e-mail stating that you support stopping the building of SR1 Also if any others in your household who are over age 18, would read and "sign" the e-mail so that I can put your name(s) on the letter. I am sending the letter out this weekend because CEEA will soon be making their decision as to whether to stop the temporary reservoir being build in Springbank or not. A reply by Thursday night is appreciated.

Kindly,



Dr. Karen Massey, Redwood Meadows Court

403 390 1815

6K-b
6410 K

August 26, 2020

Impact Assessment Agency of Canada (IAAC/CEAA)
National Resources Conservation Board (NRCB)

Delivered by email

Attention:
Laura Friend (NRCB)
Jennifer Howe (IAAC / CEAA), ceaa.springbank.acee@canada.ca

Re: "Upstream" on the Elbow River, Reasons to Stop the Proposed Springbank Temporary Reservoir (SR1)

The Town of Redwood Meadows is situated upstream of the proposed SR1 intake. It is evidently prevalent the GOA has not taken into consideration all the problems and ill effects SR1 will have on the community and residents of Redwood Meadows. Residents in the town continue to have numerous concerns about insufficient flood management and related problems. Many problems are described in the attached document.

Residents upstream of the proposed SR1 were forgotten in the 2013-2014 flood control GoA decision-making process. We now need to have our concerns on record and addressed. We propose a multipurpose flood control option, McLean Creek (MC1) that is Best for All Albertans who live upstream and downstream on the Elbow River.

We respectfully request that IAAC (CEAA) and NRCB decline the Proponent's application for the SR1 project.

Signed by **Residents of Redwood Meadows**

Dr. Karen Massey, 1 Redwood Meadows Court, Redwood Meadows AB, T3Z 1A3

Name	Printed Name	Address in Redwood Meadows	
Jack Russell		23 Redwood Meadows Drive	kw
Clare Rowell		23 Redwood Meadows Drive	kw
N M Jz	N McTague	27 ~~Redwood~~ Wolf Dr	kw
4 Donna Winn		#30 Redwood Meadows Dr	kw

7K
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Aug 26/20 KM

	Signature	Print Name	Address	
	Tom Murphy		25 Wolf Dr.	KM
	Chris Martin		52 Redwood Meadows Dr.	KM
	Desiré Leclerc		82 RWM Dr.	KM
	Russell	Nancy Russell	6 Redwood Meadows Court	KM
5			2 Redwood Meadows Court	KM
	Anita Sterna		22 Redwood Meadows Dr	KM
	Eduard Speller		1 Wolf Drive	KM
	Lya Lmberger		1 Wolf drive	KM
	Yannick Speller		1 Wolf Drive	KM
10		Craig Comeau	12 WOLF DRIVE	KM
	Allison Comeau		12 Wolf Drive	KM
	Dean Sjoholm		14 Wolf Drive	KM
	Michelle Mink		14 Wolf Dr	KM
	Sean Sterna		22 Redwood Meadows Dr.	KM
15		S.L. Peggs	61 Manyhorses Dr.	KM
		Bill Ardley	61 MANYHORSES DR.	KM
		GAIL TATE	5 MANYHORSES GDN.	KM
		JOAN NICA	5 Manyhorses Court	KM
19		Monica Stefanisa	5 Manyhorses Crt	KM

Cc via E-mail: Elbow River Sustainability Alliance (ERSA), Roy Whitney, Chief of Tsuut'ina Nation; Jason Kenney, Premier of Alberta; Ric McIver, Minister of Transportation; John Barlow, MP Foothills, Miranda Rosin, MLA Banff-Kananaskis; Paul Sawler, Mayor, Townsite of Redwood Meadows; Scott Ackerman, Deputy Mayor, Townsite of Redwood Meadows, Jaime Mitchell, Chief Administration Officer, Redwood Meadows.

8K

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Aug 26/20 KW

	Matt Lantz	9 Redwood Meadows Court	KW
	Catherine	13 Redwood Meadows Court	KW
	Roy Rayson	13 Redwood Meadows Court	KW
		15 REDWOOD MEADOWS COURT.	KW
5		15 REDWOOD MEADOWS COURT.	KW
		10 Redwood Meadows Court	KW
		10 Redwood Meadows Court	KW
	Brady Cullen	4 Redwood Meadows Court	KW
		4 Redwood Meadows Court. Redwood	KW
10	Sandra Cullen	4 Redwood meadows court	KW
		5 Redwood Meadows Court	KW
		5 Redwood Meadows Court	KW
	John Heral	3 REDWOOD MEADOWS COURT	KW
		3 Redwood Meadows Court	KW
15		10 Wolf Drive	KW
		2 WOLF COURT. Randy Sergent	KW
		2 Wolf Court. Deb Dore	KW
		8 Redwood Meadows Court Richard Kilbride	KW
19		8 REDWOOD MEADOWS COURT Stephanie Kilbride	KW

9 K

9 of 10 K

26 Kw

August ~~9~~, 2020

Impact Assessment Agency of Canada (IAAC/CEAA)
National Resources Conservation Board (NRCB)

Delivered by email

Attention:
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Jennifer Howe (IAAC / CEAA), ceaa.springbank.acee@canada.ca

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Signed by **Residents of Redwood Meadows**

Dr. Karen Massey	**1 Redwood Meadows Court**	
[illegible]	7 REDWOOD MEADOWS COURT	Kw
Sharon McPherson	7 Redwood Meadows Court	Kw
Sarah Killoride	8 Redwood Meadows Court	Kw
[illegible]	9 " " Court	Kw
5 Melanie Lovatt	9 " " Court	Kw

10 K

Pg. 10 of 10 K

Karen Massey

From: Karen Massey <kmassey@personainternet.com>
Sent: September 14, 2020 12:05 PM
To: 'Karen Massey'
Subject: FW: Don't Dam Springbank from the Redwood Meadows persepctive document
Attachments: Sept 15.2020. CEEA submission just the body of report. bragg creek pics.docx

From: Karen Massey <kmassey@personainternet.com>
Sent: September 14, 2020 12:00 PM
To: 'Mike Hanson' <hanson.mike.k@gmail.com>
Subject: RE: Don't Dam Springbank from the Redwood Meadows persepctive document

Thanks so much Mike for saying Yes to supporting declining building SR1.
I unfortunately could not send the document to you because it is too big. It's 72 pages with many pictures in the Appendices.

Once I finish the document today, I will figure out how to load it on our Redwood Meadows Community FB website this week. Watch for it there.
However I just made a new document so that I can send you the written part of the document and the Attachment pics and the new information about what I just wrote about the impact of the Bragg Creek Berms. I wrote a very strong section in the attachment about the new Bragg Creek Berms. I tried to capture the emotion of so many Creekers who could see the ruination of their natural beauty and connection with the river. We don't want that to happen to Springbank. See what you think.

Once again, thanks for your support. You are the final count, we are at 175 signatures. I'm having all signature put into a PDF this afternoon, and hopefully then we can e-mail it to the regulators tonight.

Kindly, and in appreciation of your support in this important decision.

Dr. Karen Massey

From: Mike Hanson <hanson.mike.k@gmail.com>
Sent: September 14, 2020 11:27 AM
To: Karen Massey <kmassey@personainternet.com>
Subject: Re: Don't Dam Springbank from the Redwood Meadows persepctive document

Hi Karen,
Sorry i hadn't responded yet. I am not sure if you sent the document, but if you hadn't yet, you can add my name to the list.
Thanks,
Mike

On Thu, Sep 10, 2020 at 9:10 PM Karen Massey <kmassey@personainternet.com> wrote:

Hi Mike,

11K-a
Pg 11 of 11 a

I'm following up regarding whether you had any question about the document that I sent to you September 1?

Could you please support us residents in our request to stop SR1 and build MC1? Every virtual/e-mail and written signature is important. We are at over 160 signatures. I'm planning to send the document on Sunday.

Thanks for your consideration,

Karen

From: Karen Massey <kmassey@personainternet.com>
Sent: September 1, 2020 9:41 PM
To: 'hanson.mike.k@gmail.com' <hanson.mike.k@gmail.com>
Subject: Don't Dam Springbank from the Redwood Meadows persepctive document

Hi Mike,

As discussed, attached is the document I have written over the past 4 months, with the help of many others.

Thanks for agreeing to read this document.

Your support in signing the letter to stop building SR1 would be appreciated. Please call me at the number below if you have questions or if you decide that there are enough reasons in the document to stop SR1 and instead, build a permanent dam, such as in McLean Creek in order to provide:

1. FLOOD PROTECTION: , since dirt berms don't protect us in Redwood.
2. AQUIFERS will still flood basements since they go under the dirt berms
3. DROUGHT PROTECTION: There must be a dam upstream by 2036 when the flow of the Elbow River flow is predicted to diminish significantly resulting in South Calgary will have a water shortage. This suggests that Redwood and all others upstream will need a permanent water source such as the Glenmore Reservoir provides partially for South Calgary.
4. PERMANENT WATER SUPPLY FOR WATER BOMBERS when there are wildfires in the area. A wildfire already happened in Champion Lake in May 2018. The only thing that saved us was that the wind shifted direction.
5. RECREATION OPPORTUNITIES when there is a permanent dam upstream. Glenmore Reservoir provides recreation for sailboats and canoes. There could also be picnic and camping areas.

These are just a few reasons of why SR1 must be stopped, and a permanent dam must be built. It is well known by the Calgary Water specialists that a permanent dam will soon be needed for Calgary, let's build it now and make the best use of taxpayers money.

Thanks for reading this. If there's questions please call me. Please send me an e-mail if you agree to support stopping SR1 and building a permanent dam. Your support would be appreciated.

Kindly,

Dr. Karen Massey 403 390 1815

11K-b
Pg 11-11b End

Executive Summary of Reasons to Decline SR1

Residents of Redwood Meadows respectfully request that Impact Assessment Agency of Canada (IAAC/CEAA) and the Natural Resources Conservation Board (NRCB) decline the Proponent's application for the SR1 project. Below are some of the reasons to decline SR1.

1. **A risk assessment** is needed to determine if Redwood Meadows during a flood will be sandwiched between Bragg Creek due to the water velocity coming downstream and the potential for the SR1 intake to plug causing some of the water to back up into Redwood Meadows. A second part of the assessment is measuring if the new berms built in Bragg Creek hamlet that narrowed the river, will cause an increased velocity of the Elbow River downstream.
2. When there is a flood, Springbank road is closed. O**ur children must be bused via the Trans Canada Highway to the Springbank Schools which is not as safe nor timely.**
3. **Mental Health impact on people living upstream** of the proposed SR1 intake due to fears of another flood and the berm being breeched again. Also, fear of another wildfire alert as in 2018. In contrast, MC1 offers a healthy back to nature outlet for stress.
4. **It makes no economic sense to build SR1, when, within a short time, the City of Calgary will ask for a dam due to the predicted low flow of the Elbow River by 2036, and their shortage of water supply.**
5. Redwood Meadows will need water storage, the same as the City of Calgary by 2036, or earlier. Each year the **Elbow River flow volume diminishes** and soon there will become **a dire need for a permanent water source** for Redwood Meadows. In its current form, the Elbow River will not be able to meet Redwood Meadows and the City of Calgary's water requirements by about 2036.
6. The amount of **underground alluvial aquifer** increases when the **river flow volume and velocity increases**, resulting in seepage through the berms. This seepage will continue to flood basements in Redwood Meadows causing expensive damage. **Only a dam will protect** Redwood Meadows underground flooding problem.
7. As shown by the Champion Lake wildfire in 2018, **a permanent water source is needed, such as MC1, so that a water supply is available for firefighters and for water bombers to efficiently fight wildfires.**
8. **Dirt berms are eroded** every time there is a flood, resulting in costly berm repairs and new rip rap.
9. **Catastrophic erosion** of the riverbanks occurs during floods. There has been nothing done to prevent on-going erosion, subsequently **the river is migrating closer to the townsite**.
10. The GoA decided to build SR1 because they stated it "was cheaper" than MC1. As SR1 costs nears $1 BILLION there is a **Sunk Cost Fallacy**.
11. **Limited Benefit of Flood Control, not Flood Management**: It is evident there will be 100% negative environmental impacts and 0% benefits to Redwood Meadows from SR1.
12. **Home insurance rates continue to increase** after each flood.
13. Some **home insurance companies no longer cover home damage repairs** that occur due to **overland flooding**.
14. **Albertans need more recreation opportunities.**

Table of Contents

Reasons to Decline SR1

This document is in two parts. Part l describes problems with Goa's decision-making process. Part 2 describes the negative impacts on Redwood Meadows if SR1 is not declined.

PART I: THE GOA'S DECISION-MAKING PROCESS

This part describes two ways to look at the GoA's SR1 decision making process over the years since 2013 flood. One way is to look at the evolution of the three different Alberta Government Parties that were voted in over the last three provincial elections. A second way is to look at the three public factors announced as the basis for GoA's decision in 2014.

Impact of Three Alberta Government Political Parties

The quick decision put in place in 2013 by the Progressive Conservative government to provide much needed flood protection for Calgary, quickly then became the entrenched GoA goal called SR1. Once the SR1 goal was politically established, the Alberta Provincial Government bureaucracy in several government departments were tasked to carry out the goal and to create a plan to build SR1.

When the next election came, the Wildrose representative, MLA Leela Aheer, attended and supported many of the Don't Dam Springbank's monthly meetings. The Don't Dam Springbank group appreciated her support. To get elected the NDP said they would reverse the SR1 decision. They understood from grassroots information, were the needs of the Springbank, Redwood Meadows, and Bragg Creek and area communities. Unfortunately, once elected, the NDP were influenced, likely due to the bureaucratic plans and budgeting for SR1 that were already underway, to change back to the status quo of carrying on with the original SR1 plan.

Fortunately, in the third provincial election on April 16, 2019, a strong candidate took the time to attend meetings, to talk to residents in the constituency, and to understand the problems with SR1. Miranda Rosin, MLA Banff -Kananaskis, despite considerable on-going pressures, has withstood the demands to change her views to support SR1. Armed with the considerable knowledge and understanding about problems with SR1, she continues to stand strong against SR1 as a bad decision. She realizes significant changes have happened following the 2013 flood crisis, and it is now time to take advantage of this opportunity to stop SR1 from proceeding and to choose a better option which meets the growing needs of more Albertans. Her understanding is that SR1 will result in considerable damage to the entire Springbank area, airborne risks to communities in Calgary, upcoming unmet water supply needs for Calgary, and likely harmful impacts as far reaching as Redwood Meadows because of unseen water forces of the underground connections of aquifers and springs in the entire area surrounding the Elbow River. On September 23, 2020 in Redwood Meadows **1,027 signed petitions** to stop SR1 were presented to MLA Rosin. **See Appendix A**. Subsequently, MLA Rosin officially presented the petitions to the Alberta Legislative Assembly in November 2020. **See Appendix A.**

It is also noted that MP John Barlow, who has been serving the federal riding of Macleod since June 30, 2014, is also in opposition to SR1. MP Barlow also signed a petition formally acknowledging his

opposition to SR1. He and his Executive Assistant, Carrie Fisher, attended monthly meetings of the Elbow River Sustainability Alliance (formerly Don't Dam Springbank group). **See Appendix B** of a picture of MP John Barlow with a few of the Elbow River Sustainability Alliance members.

It is suggested that it is time now to listen to our political leaders who are in-tune with the needs of their constituents. It is time to allow flexibility in the traditional bureaucratic planning and budgeting processes and make room to support political leaders who understand how to best resolve flood management and optimize the benefits that the Elbow River could provide that is ultimately in the Best Interest of All Albertans.

It is noteworthy that the current significant environmental problems did not exist in 2013 before the SR1 decision was made, only the flood problem existed. However, we must now have decision making flexibility to include environmental considerations that are broader than just flood control, flexibility to consider broader implications to the environment and to the economy. To change in the case of SR1 to a better option to meet the broader and best needs of Albertans for: flood management, fire suppression, drought planning, and recreation opportunities.

Decision based on SR1 being "Faster, Easier, Cheaper"

As publicized in the newspapers, and shown in our previous submissions, the GoA decided on the option of SR1 in 2014 based on "SR1 is Faster, Easier, and Cheaper" option.

- Faster because GoA thought only 17 ranchers are involved. GoA's quick decision resulted in not being informed about the magnitude of the impact on Albertans around the SR1 footprint and Albertans in Redwood Meadows, Bragg Creek Hamlet, West Bragg Creek who are upstream of SR1.
- Easier to buy land from only 17 ranchers; easier than McLean Creek Dam (MC1) option, GoA did not consider MC1 further based on two reasons, namely it avoided potential environmental problems about Bull Trout and other fish, and easier to not interfere with (perceived) opposition from Tsuut'ina Nation for infringing on their hunting land.
- Easier because GoA never consulted with affected residents before the SR1 decision was made.
- Not Cheaper: In order to make SR1 look like the cheaper option the GoA does not include all the costs of building SR1. Nor does GoA publicly or openly state a total for all the cost overruns that already are occurring. There are numerous new related costs such as plans to deepen the diversion channel, and three recent buyouts to stop the opposition to SR1. The comparison of SR1 to McLean Creek (MC1) costs is lacking a detailed cost-benefit analysis which includes all SR1 costs.

See Appendix C: August 26, 2014 Ranchers oppose SR1. The initial estimate stated SR1 and MC1 were equal in the cost of $190M because "the land costs for SR1 were excluded" from the original SR1 budget estimate. This comparison suggests that in truth, SR1 was more expensive than MC1 from the start of the planning.

See Appendix D: Springbank dam price climbs to $432M, August 12, 2017.

See Appendix E: It is noted that the 2017 budget estimate remains the cost quoted for SR1 in the Spring SR1 2020 Update. It has not been publicly updated by GoA to include the numerous expenditures since 2017.

- Not Cheaper: In their large submission to CEEA in 2019, the GoA justified how SR1 is cheaper than MC1 by comparing SR1 costs to purchase the required land to the cost of MC1 as if taxpayers had to buy their own government Crown land.

Based on these articles, it is deceitful to taxpaying Albertans that the GoA in 2020 continues to state the total estimated cost of the SR1 project is $432 M. This amount was announced by the GoA in the August 12, 2017 announcement. Since 2017 there have been numerous additional SR1 costs.

Additional Costs when the GoA paid to Silence the Opposition to SR1

It seems that the GoA realized the science of why SR1 should not be built is considerable, resulting in the GoA buying out the strong opposers to SR1.

- First, the leader of the Don't Dam Springbank group, Mr. John Robinson sold some of his ranch land for an undisclosed amount, in 2019. **See Appendix F.**
- Second, between 2014 and until 2020, Tsuut'ina had many reasons for opposing SR1 and viewing MC1 as the best option for flood management. **See Appendix G**. In 2020 they agreed, upon payment of $32M, to no longer oppose SR1. See **Appendix H**.
- Third, On December 12, 2018, RVC 2020 wrote a lengthy letter to CEEA describing all their concerns about SR1. See **Appendix I -1, 2 and 3.**
  Rocky View County (RVD), during an in-camera vote, announces in a short letter that they agreed not to oppose SR1.The Airdrietoday.com carried news about the Rocky View County compensation agreement. See **Appendix J** that describes the detailed breakdown of the pay offs to change RVC vote as follows:

$10 Million to Rocky View County (RVC) "to address any future loss of municipal property taxes on the 3,870 acres of land that would be impacted if SR1 proceeds." The article further stated that the following financial commitments (, are not tied to SR1. These financial commitments occurred at the same RVC voting meeting.

Division 1, SW RVC, Bragg Creek, Mark Kamachi: "The province has promised the long-desired traffic circle on Hwy 22 at the entrance to the community (of Bragg Creek) will be completed no later than 2025 says Kamachi." **See Appendix J.**

Further funding of flood mitigation in Bragg Creek **$9.4M** on top of the **$32.8M** already dedicated by provincial and federal government funding.

Division 4, SE RVC, Langdon, Indus, Al Schule: $2.5 M for upgrading an intersection.

Division 7, N. RVC, Balzac, Madden, Daniel Henn: $8M for a new roundabout.

Publicized total RVC buy out is: $10M + 9.4M + 2.5M + 8M = $29.9M

Unfortunately, the grand total buy out to RVC is undisclosed.

Bragg Creek Berm Project

The Bragg Creek Berm project should be considered by the regulators as part of the SR1 package and costs because it is part of flood control on the Elbow River. Residents along the Elbow River and in the SR1 footprint disagree with the GoA excluding Bragg Creek. The purpose of these berms is for flood control on the same river. The initial cost of the Bragg Creek berms of $32.8M should be factored into the

overall costs of SR1. The new actual total after the RVC buy out should be shown as $29.9M + $32.8M = $62.7M.

Additional Payments for SR1

On March 13, 2019, the Federal Government Minister of Infrastructure and Communities Francois-Phillipe Champagne, announced $168.5 million payment for SR1. **See Appendix K**.

On May 13, 2020, The Government of Alberta announced a commitment in its 2020 Budget to provide $196.3 million over three years for the Springbank Off-Stream Reservoir. **See Appendix L**

Sunk Cost Fallacy

The concept of Sunk Cost Fallacy suggests that people believe that an investment (i.e., sunk costs) justifies further expenditures. People demonstrate "a greater tendency to continue an endeavor once an investment in money, effort, or time has been made. This tendency is called the sunk cost fallacy. Decision makers caught up in the sunk cost fallacy may be described as "throwing good money after bad, while refusing to succumb to what may be described as "cutting one's losses." (Parayre, Roch (1995) (Sunk cost fallacy, Cambridge English Dictionary)

> The term "Concorde fallacy" was named when the British and French governments continued to fund the joint development of the costly Concorde supersonic airplane even after it was apparent that there was no longer an economic case for the aircraft.

A problem with sunk costs is called the "**sunk cost effect.**" An example of the sunk cost effect is that politicians and managers have more incentive to avoid the appearance of a total loss, so they continue with the project. (Gupta, K. P. (2009) such as with SR1.

Another way of looking at sunk costs that also seems to apply to SR1, is the English and French governments' decision to continue building the Concorde when they knew it was a mistake. This type of situation is called "**Planned Continuation Bias**." Projects often suffer cost overruns and delays due to the planning fallacy and related factors including excessive optimism, an unwillingness to admit failure, groupthink and aversion to loss of sunk costs." (Behavioural Insights Team (July 2017)

The sunk cost effect can be applied to SR1 as described below.

2017 is the GoA's current publicized SR1 estimated budget. The cost was frozen at $432M, and is now considerably underestimated, but not revealed publicly anymore, likely because the costs are nearing $1 Billion. For example, as mentioned in earlier documents, numerous costs for building SR1 have not been factored into the total, as well as the monthly costs of the four Engineering consulting firms since 2013.

Costs of Buy-outs

1.	Mr. J.R. Robinson		undisclosed
2.	Tsuut'ina Nation	$32 M	
3.	RVC	$29.9M	and roundabout undisclosed
TOTAL Buy outs		**$61.9M**	**+ undisclosed amounts**

Additional GoA Payments

March 13, 2019	$168.5
May 13, 2020	$196.3M
2017 Underestimated budget	$432 M

2020 GRAND TOTAL $858.7M + additional amounts undisclosed

We request that the GoA and the regulators revisit the sunk costs into SR1 that now total close to $1 Billion and rising because this is significantly higher than the original budget estimate of $190M plus purchase of land costs. Given the escalation of unbudgeted costs we ask that the GoA be truthful and transparent and formally budget all further additional costs so that increasing costs of SR1 are transparent to Albertans.

Having described the problems with the SR1 decision making process, lack of public transparency and lack of accountability for accurate budgeting and transparency of costs of SR1, the remainder of this document describes the specific harmful impacts directly and indirectly on Redwood Meadows.

PART 2: HARMFUL IMPACTS OF SR1 ON REDWOOD MEADOWS

Since the purpose of CEAA is to protect the environment and encourage sustainable development, this part of the document provides reasons why there are many environmental problems and economic problems from Redwood Meadows residents 'perspectives. The Elbow River Sustainability Alliance has submitted documents stating that SR1 will ruin irreplaceable grassland, destroy animal habitats, and prevent sustainable development in the area because nothing can be built on this land for fear of another flood. It is impossible to predict when the next big flood will occur. These points were described in the 2019 submission.
Another consideration is the single benefit of SR1 as only providing flood control, not flood management, and only protects Calgary. The 100% negative impact of not having flood protection, and no flood management continues to be a problem for Redwood Meadows. A summary is shown below, with details to follow.

It is suggested that since CEAA's mandate is to:

1. to protect components of the environment, consideration must be given to the direct and indirect impact of SR1 on Redwood Meadows. There is a potential significant adverse environmental effect if the SR1 Intake plugs and water floods back into Redwood Meadows, as well there are many missed environmental opportunities to protect the Elbow River bank from annual erosion and from catastrophic erosion during floods, and also caused by the narrow focus of just flood control.
2. Encourage …actions in a manner that **promotes sustainable development** in order to achieve or maintain a healthy environment and a healthy economy.

   SR1 has no long-term benefit on the Elbow River for water management since it is only a **temporary reservoir, yet it will permanently destroy all possibilities for sustainable development.** SR1 will prevent sustainable development such as Rocky View County and the City of Calgary being able to expand into the proposed SR1 footprint due to the inability to forecast when the next big flood will occur. SR1 does not protect Redwood Meadows from catastrophic erosion, economic and environmental impact of wildfires, loss of the town's residents to have more recreation opportunities such as by a dam at McLean Creek (MC1).
3. Encourage further studies of the cumulative effects of physical activities in a region (SR1 footprint, upstream and downstream of the Elbow River), and consideration of the study results in environmental assessments. The Elbow River Sustainability Alliance has several submissions regarding the lack of objective and valid findings of the environmental assessment done by the same contractors as those who will be building components of the proposed SR1. There are significant increasing physical activities in the MC1 Kananaskis Park area, suggesting that building more recreation opportunities is what Albertans want and need, NOW, and in the future.

Most of the harmful impacts of SR1 on Redwood Meadows are environmental in nature as described in the following sections.

South Calgary Runs out of a sufficient water supply by about 2036

It seems irreprehensible that the City of Calgary, knowing that it will run out of sufficient water supply by 2036 has not supported that a permanent dam be built now.

As discussed in our previous submission, the City of Calgary water experts forecasted in their meeting in the spring of 2019 that Calgary will begin to experience water shortages by about 2036. Calgary is fortunate that the Glenmore Dam offers water storage capacity so that it has a water reserve to serve South Calgary residents, at least until about 2036. Unfortunately, Redwood Meadows does not have a dam above stream on the Elbow River to serve as a water supply when the Elbow River volume decreases.

This one factor regarding the City of Calgary needing a permanent water storage to supply Calgary with sufficient water within the next approximately 16 years, or earlier if climate change results in drought--should stop the building of SR1 which is only for flood control, not for flood management. Having a permanent water storage capacity is critical to the well being of South Calgarians AND to Redwood Meadows.

QUESTIONS to the GoA and regulators:

1. How can regulators close their eyes to the dire need of water for Calgary soon?
2. How can regulators not consider a dam as in the Best Interest of All Albertans?
3. How can regulators agree to building SR1 and then in a few years from now be faced with a request from the City of Calgary that taxpayer's money be spent to build a permanent water supply for their needs?

The City of Calgary has the Glenmore Reservoir as a permanent water storage. In contrast, Redwood Meadows has no water storage, such as a dam, to draw from when the effects of a climate change drought occur, or by 2036 when it is forecasted that South Calgary will not have enough water for it's citizens.

Questions to the GoA and the regulators:

1. What is the justification for not having a water storage capacity for all Albertans, including Redwood Meadows who depend solely on the Elbow River for their water supply?

2. What is the plan for Redwood Meadows residents to have an adequate water source equivalent to Calgary's Glenmore Reservoir since the Elbow River continues to lessen in the volume of water flow?

Impact of the SR1 Intake Plugging & Velocity of Water from the new Bragg Creek Berm

A new concern for Redwood Meadows residents is that a change upstream of building berms in Bragg Creek Hamlet, will result in a faster flow downstream which could cause increased flood, erosion and alluvial aquifer damage in Redwood Meadows.

In addition, it is not known what effect the berms will have on the 100m drop in elevation of the river coming into Bragg Creek, and whether that drop will cause added pressures on the new berms and therefore changes in the river, especially during higher spring flows and floods.

To build the berms a significant number of trees were destroyed, and residents lost their beautiful views of the river. There was considerable controversy about the project because of this loss. The pictures in Appendix M-1 show the severe loss of beauty due to the berms, a loss of a 100 years of trees that were replaced by utilitarian rock. The narrowing of the Elbow River upstream due to these new berms may speed up the river flowing downstream towards Redwood Meadows. **See Appendix M-1.**

Similarly, in 2013 after the flood silt covered Mary Robinson's part of her ranch that was along the Elbow River, leaving behind a desolate wasteland. **See Appendix M-2 for pictures of this silt wasteland** that SR1 will also leave behind every time it floods. There is no economic benefit to SR1 land after a flood, in fact it is the opposite, it becomes an unusable wasteland. No one can use the land because it could then flood in the next year or two, nor is there anything useable about silt.

Additionally, when the proposed SR1 Intake fails, Redwood Meadows will be **sandwiched in-between Bragg Creek berms and the failed SR1 Intake**. Beautiful Redwood Meadows will become even more vulnerable to flood damage including potential loss of life, which almost occurred during the 2013 flood when a front end loader operator's night lights went out and he did not realize until almost too late that the flood waters had eroded much of the berm around him. He described it as a close call in his retelling of the story at the community flood event gathering in appreciation of all the volunteers who saved the town.

SR1 will likely cause backwater flooding when the Intake is plugged, and the emergency side run off from the intake cannot handle a high flood capacity. The worst-case scenario is that the Town of Redwood Meadows could be wiped out because of backwater flooding and flooding from the alluvial aquifer into the homes due to lack of protection from groundwater.

Question to the GoA: what plans are in place to return some of the beauty of the Springbank area after a flood? And to remove all the potentially toxic silt so it will not blow into the area and into Calgary?.what is useable, and an economic benefit about silt and the flood land?

School Buses must use the Trans Canada Highway during flood conditions

It is noted that the Springbank Road will be under water during times of flood conditions. This road is the road used by all school buses from Redwood Meadows and Bragg Creek in order to drive children to the Springbank High School as well as other schools in the Springbank area. This means that children will need to be bused on a major highway which is a main haul route for long distance semi truck drivers and other vehicle operators who will likely be tired as they reach their Calgary destination. Not a safe situation for children. It will also be a longer distance, and a longer time to get to and from schools.

Dirt Berms Do Not Work

History shows that in the floods of 1995, 2005, and especially in the big flood of 2013 the dirt berms in Redwood Meadows were damaged each time and required expensive repairs. It reached catastrophic levels in 2013 when **the entire Redwood Meadows community residents were evacuated** because the flood waters were **breaching the disintegrating berm in three places**. Residents were evacuated for up

to 6 days until the Electricity was turned back on, and then the Water Treatment Plant was repaired and sufficiently operational such that tap water was finally able to be turned back on. In fact, the entire town of Redwood Meadows in 2013 was almost lost, **See Attachment M.** For three days the Tsuut'ina Nation and hundreds of volunteers worked almost around the clock to save the town as the water breached the berm. It was a close call. The town may not be so lucky in a bigger flood because the berms are still built of dirt for the top approximately four feet, and they continue to be vulnerable to erosion.

Bowness Residents have also researched and found 11 reasons why their proposed berm will not protect residents from flood damage. **See Attachment N.** the evidence against berms not protecting residents is growing. Better options are needed.

.

Unfortunately, **the additional insurance costs for the evacuation of over 1,100 people for up to 6 days has never been tallied.**

It is noted that Redwood Meadows residents are thankful for the berm because it **helps prevent annual erosion** of the Elbow River banks when the spring rains and the mountain snow melt occurs. Preventing annual erosion offers important protection in slowing the river from eroding the riverbanks. This also protects the forest that in turn protects Redwood Meadows by acting as a line of first defense from floods. The forest is an important buffer by protecting Redwood Meadows from the impact of annual erosion and also from floods.

The GoA seems to be confident that the repaired dirt berms will now fully protect Redwood Meadows. However, since the top approximately four feet of these berms are still made of dirt, and the rip rap that was put on to protect the berm in the past three floods has been washed away by each of the earlier three flood waters, it is highly likely history will repeat itself, and with a more extreme outcome, when another big or even bigger flood occurs. There continues to be no guaranteed protection for the town from a flood. Only an upstream dam can provide better protection, such as MC1.

It is noted that a dam is now being built to protect the town of Canmore because it suffered catastrophic losses when Cougar Creek flooded in 2013. **See Appendix O: GoA announces Canmore Dam. It is now time to protect Redwood Meadows, as well as all other Albertans on the Elbow River from catastrophic losses in the future through having a permanent MC1 dam.** A dam at McLean Creek was estimated by IBI/Golder to cost $300-400MM.

Costly Repairs to the Berm and Water Treatment Plant after the Three Floods

After each of the more recent floods in 1995, 2005 and 2013, there were costly repairs to the berm totalling $5.6 M. Additionally, the flood waters of 2005 ripped out the entire water intake for Redwood Meadows water treatment plant that provides water to all homes in Redwood Meadows. There was an entirely new, costly intake system put in place in the fall of 2005 when the water was at a low level. In 2013 there was again costly damage to a different part of the Water Treatment plant. No information was available regarding the $Million spent to repair the cost of flood damage to the Water Treatment Plant and its intake system.

The 2005 flood washed away the rip rap on the Redwood Meadows berm. Later in the summer of 2005 Redwood Meadows was fortunate to be one of the first to have replacement rip rap delivered. As a result of the early delivery, large, boulder sized rip rap was put along the berm.

Picture 1, on the next page, shows two dogs around one of the few remaining 2005 boulder-sized rip rap, measuring 91 cm x 122cm. Unfortunately, the 2013 flood swept all the other boulders down river. Some of these boulders contributed to the damage on the west side of the Highway 22 bridge located at the Roundabout. The bridge was closed on the west lane for costly repairs for several weeks. The cost of the bridge repair is unknown. It is noted that the Highway 22 Roundabout area is where the proposed enormous SR1 Intake will be located.

Picture 1: One of the hundreds of 2005 large boulder sized rip rap, 91cm x 122 cm, left after the 2013 flood. Notice it is no longer on the side of the berm, it is no longer protecting the berm, and there are no other similar boulders because they were all swept away!

Picture 2, on the next page, shows the size of the replacement rip rap following the 2013 flood. The Project Supervisor stated to Karen Massey in the fall of 2013 that the reason there was much smaller rip rap compared to the delivery after the 2005 flood, was that there had been a high level of demand for the rip rap following the big flood. However, he stated that the size was still within the required range, but unfortunately on the smaller end of the range. Since this rip rap is about half the size of the 2005 rip rap, it is likely that the next flood will again sweep the rip rap off the side of the berm, costing more millions to replace.

There is much smaller replacement Rip rap after the 2013 flood, mostly about 76 cm x 46 cm

In summary, millions of taxpayer's dollars were spent after each flood to repair the water treatment plant damages as well as to repair damages to the dirt berm and to replace rip rap each time. We must stop this needless waste of taxpayers' money.

Question to the GoA: what is the reason that a dam cannot be built to control to volume and flow rate of flood waters so that there is no longer a senseless waste of taxpayers' money after each flood to repair flood damage to the berms and water treatment plant/sewer system in Redwood Meadows?

Question to the GoA and to the Auditor General: What is planned to stop the continuing waste of taxpayers' money in future floods to repair the Redwood Meadows berms again, as well as repair the new berms at Bragg Creek and Bowness?

Catastrophic Erosion of the Elbow River Banks

Research after the 2013 flood from Tamminga et. al in 2015, which is on file at CEEA/IAAC and NRCB, states that catastrophic erosion occurred on the Elbow River banks. It is stated in the published research paper that:

> **Elbow River Bank erosion was prominent** and contributed to major morphological

changes including widening, increased elevation variability, and a restructuring of channel pattern.

The observed topographic change of the reach suggests that the flooding resulted in a **catastrophic change** in the sense that the channel morphology is now adjusted to a new regime associated with a larger formative discharge…

Conclusion
The flood resulted in large (>2 m) elevation changes, widespread bank erosion, and a complete reorganization of channel pattern. These effects seem likely to persist in the future as the reach morphology is now stabilized and adjusted to larger flows.

The 2013 flood eroded 100 yards of river frontage on the Redwood Meadows 9 Hole Disc Golf Course. The distance is known because a Disc Golf Hole was entirely eroded away. All that is left is an 8 foot straight down drop to the Elbow River as shown in **Picture 3 below.**

Photo taken by Sharon Pegg, resident of Redwood Meadows

In summary, we must stop this needless damage of catastrophic erosion to the Elbow River banks because of floods. As a result of continuing erosion, the river is moving closer to the Redwood Meadows town. In the past there was considerably more protection from the forest, but more and more of the forest is being eroded away. The 70 foot (21m) trees that floated down the raging river during the 2013 flood contributed to the damage of the west side of the bridge on Highway 22.

Question to GoA: What is being planned to stop the erosion of the Elbow River banks?

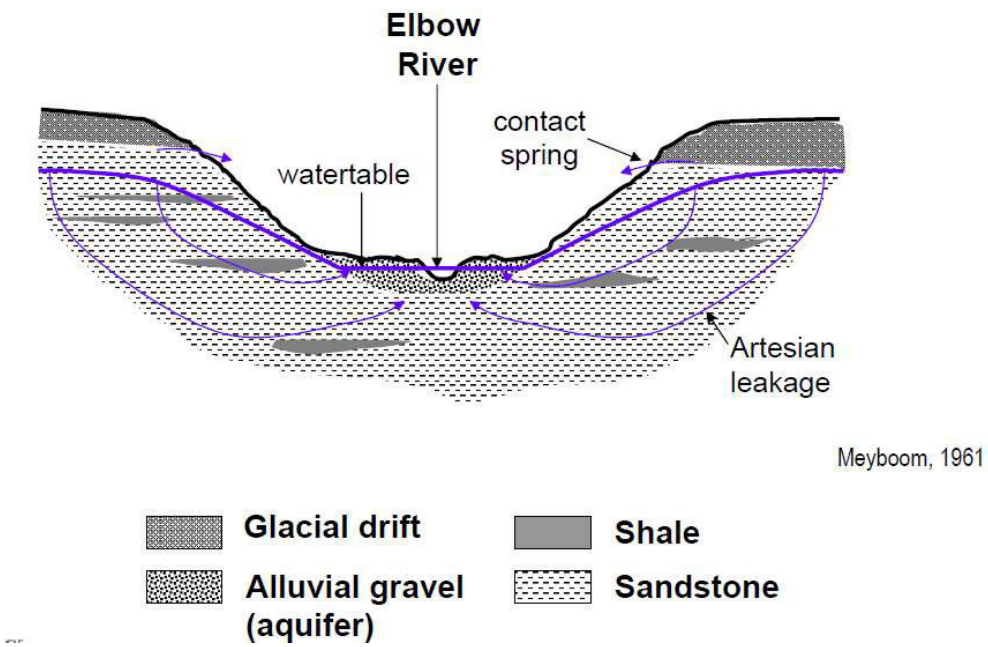
Alluvial Aquifer floods Basements in Redwood Meadows

Recent newspaper articles about the Town of Exshaw shows that Redwood Meadows and Bragg Creek residents are not alone in their concern about the pressure from flood waters increasing the volume of water underground in the alluvial aquifer. People are becoming more informed about the underground significance of the alluvial aquifer. Exshaw residents are upset that water is coming up from the ground and flooding basements. M.D. of Bighorn Reeve Dene Cooper states "When that snowpack melted it began to fill the aquifer that the houses are built on…that is the source of the problem." **See Appendix P.**

Some residents of Exshaw concluded their basement flooding is a result of a new flood mitigation project that is diverting groundwater into a section of Exshaw not previously flooded. It is possible that since the berms at Exshaw are not able to stop the alluvial aquifer running under the berms, that the MD could incur an expensive liability to repair those homes in eastern Exshaw that were damaged. If that is the case, there will be a fair bit of embarrassment at both levels of government for a failed expensive berm project. The hydrologist report in a few months will provide more information.

Another consideration is the ongoing alluvial aquifer problem. Fortunately, University of Calgary researchers interviewed Redwood Meadows residents whose basements flooded after the 2013 flood and mapped out the homes that had flooded basements because of the aquifer. Berms cannot protect the town because aquifers run under the berms. Even a higher volume and velocity of waters during springtime rains and mountain snow melting can push the aquifer waters out into the basements of homes. **Berms do not protect from the aquifer because the aquifer runs under the berms.**

On the following page is Dr. Klepacki's diagrams showing the Alluvial (boulder and gravel) aquifer along the Elbow and his explanation of concerns. He notes that under the water table is the Artesian leakage through the sandstone.



Dr. Klepacki:

> Along the middle and lower reaches of the Elbow River Watershed the river has created a widespread (1-2km wide) apron of highly permeable cobble and gravel deposit called an alluvial aquifer, covered by a thin layer of soil. The aquifer becomes charged with groundwater when there are elevated water levels during flood events. The aquifer/groundwater caused basement flooding in 2013 in Bragg Creek Hamlet, and 1/3 of the basements in Redwood Meadows, as high as 6 feet in the basements.

Unfortunately, no costs were summarized for repairing the flooded basements in Redwood Meadows. However, the aquifer/groundwater also flooded Calgary communities in Elbow Park, Rideau, and Roxboro * About $19MM of basement flooding was assessed to the Calgary communities in the flood of 2013. They concluded that "Groundwater flooding, not sewer backup, blamed for damaging homes along Elbow River in 2013. **Controlling river height essential**."

*Aboud,Ryan and Osborn, (U of C) Utoday June 19, 2018. Referring to $19MM in damage claims for flooded homes in Elbow Park, Rideau and Roxboro.

Dr. Dave Klepacki states: "**The only way to mitigate groundwater flooding is to keep the river level low or construct concrete cored berms anchored into bedrock."**

Redwood Meadows Basements that were Flooded in 2013

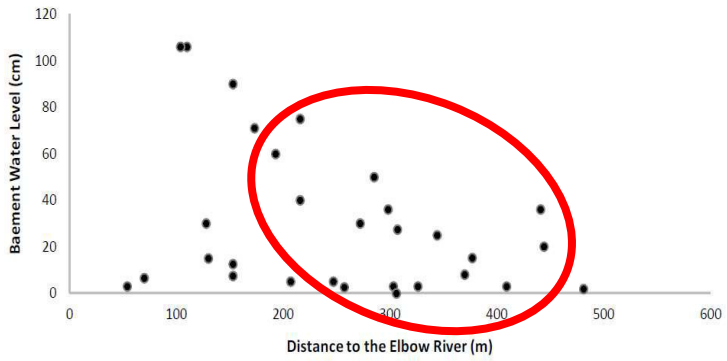


Figure 1. Flood water height above basement floor (cm) with distance of the home to the Elbow River (m).

University of Calgary ENSC501: Jabush, Grant and Ryan Sept 2014

The chart above shows that "in the **basements that were flooded in Redwood Meadows,** 60-80 cm deep of basement flooding occurred between 200 – 300 m from the river… and that water seeped into a basement as far away as almost 500 m, all behind the berms." (Jabush, Grant and Ryan, 2014)

The alluvial aquifer waters flowed into Redwood Meadows despite the berms.

We request that the GoA provide details about what are the plans, based on the likelihood that the Elbow River upstream from Redwood Meadows will run faster and higher due to the new berms in Bragg Creek speeding up the flow of the river, to prevent alluvial aquifer in Redwood Meadows from flooding basements in the spring run off, as well as during a flood?:

Question to the GoA: What is the plan for Redwood Meadows to protect it from the Elbow River alluvial aquifer and possibly the Springbank springs that would be located under the foot print where SR1 is planned? A Risk Assessment needs to be conducted.

1. does a connection exist from the bottom of the reservoir through the ancient glacial stream deposits and over to the Elbow River and also over to Redwood Meadows?
2. In the likelihood that there are connections between the SR1 footprint putting pressure on the underground springs and alluvial aquifer, how much damage could occur to basements being flooded in Redwood Meadows and residents in the Springbank area? To the wells of residents in the Springbank area?

Summary of the Impact of Aquifers

It is noted that costs of flooded basements will continue in future floods because berms do not protect from alluvial aquifer flood damage.

The only thing that can limit the aquifer damage to basements during a heightened spring run off is to have a dam on the Elbow River upstream which will slow the velocity and decrease the volume of water flow.

Home Insurance Costs Increasing and a new Risk of No Insurance for Overland Flooding

An economic impact problem is that some insurance companies do not cover overland flooding. In April 2020, a resident in Redwood Meadows was surprised that their insurance company refused to cover them for overland flooding citing the following:

> "Unfortunately, we will not be able to continue to offer you **Overland Water and Ground Water** coverage when your policy renews…Sewer Back-Up and Water & Sewer Lines coverage will continue to be covered.
>
> This location is close to the river, maybe 500 meters away. Our geocoding service uses river flooding and surface water pooling data when assigning the risk to an overland water zone. The elevation of this location may not be visibly significant however other factors are also considered to determine the zone:
>
> - Topography of the location, such as where water can flow, accumulate and/or spread
> - Surrounding bodies of water (rivers, lakes, canals)
> - Historical rainfall stats
> - Historical river flow data
> - Soil permeability
> - Severity and frequency of events
> - Snow-melt accumulation
> - Man-made structure such as dams, dikes, floodways etc that may alter the flow of water.
>
> The geocoding vendor is an expert in this type of risk assessment, and we trust the data they provide. If you have ay questions, please do no not hesitate to ask me."

More residents who have insurance with this company are getting the same letter of not being covered.

The Insurance Bureau of Canada **definition of Overland Water** is: damages caused by the overflow of a lake or a river, heavy rain or rapid snowmelt that enters your home from a point at or above ground level.

There is a statement in some insurance companies that overland water due to floods will not be covered.

Definition of Ground Water: damage caused by water entering your home suddenly and accidentally through a basement wall, foundation or floor.

Fortunately, to date, most other insurance companies have covered ground water damage after a flood, however, there is no guarantee that in the future if floods cause water to suddenly enter a home that there will be coverage due to the growing costs that are incurred by insurance companies. Insurance companies are trained to tell if it is truly ground water damage, and there is the added proof when the media states that a flood is happening. **See Appendix Q.**

Sewer backup commonly includes groundwater flooding, but some insurance companies are starting to question coverage. An example of this potential problem was in 2013 when $19MM dollars of insurance sewer backup coverage was paid out in Roxboro and Elbow Park according to hydrologist Jason Abboud. Unfortunately, there was no calculation done for the cost of the 1/3 of homes flooded in Redwood Meadows in 2013, nor in all the previous floods.

Wildfire Protection for Redwood Meadows is not Addressed

The risk of wildfire in Redwood Meadows and surrounding area is high and becoming higher, because the Kananaskis forest is aging, the weather is hot and dry in the summertime along with lightning storms, because of the second year of a major infestation of the Spruce Bud Worm, and because of climate change.

A Calgary Herald newspaper article on August 26, 2020, A2 City + Region, states that on August 25, 2020, a fire ban took effect for Rocky View County. The ban is due to "parched conditions" and that the potential for fire is "considered severe." Redwood Meadows and Bragg Creek are on the eastern edge of the aging Kananaskis forest. As mentioned in our earlier submission, there has already been a close call of a wildfire when, in May 2018, the Champion Lake fire in Kananaskis threatened Redwood Meadows. All residents were put on emergency evacuation notice. Residents not only worry about floods, they now also worry about the dangerous likelihood of wildfires.

Western Spruce Budworm Invasion Could Escalate a Wildfire

A second spruce budworm outbreak occurred in 2020 in the forest around Redwood Meadows. The damage to the trees is significant. Redwood Meadows Townsite is researching what action can be taken to avoid further damage to the trees next year. The damage results in spruce trees having numerous dead branches which could burn easily and escalate a wildfire. **See Appendix R**.

On September 4, 2020 the Redwood Updater had the following notice:

Spruce Budworm Update

> Townsite has received two quotes for an aerial application and awaiting additional cost associated with purchasing Bacillus thuringiensis kurstaki (Btk) agent. Townsite has also met with a local drone operator and discussed a targeted spraying with that technology. Relevant updates will be communicated to the community and Tsuut'ina as they become available, with the focus on community engagement and education regarding options being considered. The solution will be human, pet and environmentally friendly while addressing the Spruce Budworm challenge.

Climate Change

Alberta, like California, is vulnerable to lightning strikes starting wildfires in the numerous forests throughout the province. The province has been fortunate in 2020 in not having many wildfires. However, as mentioned in the previous submission, there is concern about the impact of a dryer climate in Alberta due to climate change.

Calgary and area residents have smelled the smoke for a few days in August 2020 due to the California fires. A newspaper article on August 26, 2020, https://news.yahoo.com/california-biggest-fires-burning-now-172319993.html states:

> Hundreds of wildfires continue to burn in California, mostly in the north half of the state, after a pair of intense, rolling thunderstorms brought down thousands of lightning strikes. Collectively, more than 650 fires burning statewide — about 20 of them considered major and the rest minor — have destroyed over 1,400 structures, killed at least seven people and charred over 1.25 million acres between Aug. 15 and Tuesday morning, Cal Fire says.

It is noted that climate change is one of the top four 2020 election platforms of the United States Democratic Party. "The platform also sets aggressive goals for combating climate change." https://www.npr.org/2020/07/27/895800425/democrats-meet-virtually-to-approve-platform-that-builds-off-of-biden-sanders-ef

Fire Insurance

The fire insurance payouts have been doubling every five years since 1980 (CBC radio podcast, June 22, 2020) because fires have been costly and catastrophic. The option of SR1 does not help with fire suppression. An in-stream dam like MC1 with water storage would help manage the fire risk.

Question for the GoA: what consideration for a close water source for water bombers has been given to protect Redwood Meadows from a wildfire such as suddenly occurred at Champion Lake in May 2018?

Lost Recreation Opportunities for Residents

Redwood Meadows residents would enjoy the benefits of having a permanent dam upstream to broaden the recreation opportunities available. There is nowhere nearby that boats can be used, and it would be beneficial to have additional picnic spots available due to the number of Albertans that already use this area.

There is a significant increase in the number of nature lovers using the Bragg Creek area. Over 350,000 users enjoyed this area last year, and these numbers are growing, probably reaching ½ Million people soon as COVID-19 influences people to leave their homes and enjoy the healthy outdoors. This is evidenced this year by a continuous lineup on weekend mornings of about 300 cars from Redwood Meadows waiting to get through the Bragg Creek four-way stop. Albertans would enjoy picnicking, camping, and boating on a permanent dam at MC1.

Traumatic Impact of Flood and Fire on Redwood Meadows' Residents

The 2005 and especially the 2013 flood left many residents traumatized. This trauma was evident at the Bragg Creek "Don't Dam Springbank" presentations in Spring, 2019. When Dr. Karen Massey asked the crowd of over 100 people if they remembered where they were on the Thursday of the 2013 flood? Everyone remembered exactly where they were that first day, suggesting that they are still having traumatic memories of this event.

A further trauma occurred when an emergency alert was sent out to residents' cell phones about the wildfire in at Champion Lake in 2018. This emergency alert stirred tSe trauma memories of 2013. The resulting trauma reaction in 2018 was evident from those who had lived in Redwood Meadows in 2013. By stirring up feelings from the fear of the 2013 trauma, residents reacted immediately and prepared to evacuate if the next notice came to evacuate in a hurry since the town was only about 3 hours away from the wildfire if the winds had continued. This timing was based on the calculation that a wildfire travels about 15 km/hour.

Residents' fear reactions included leaving the town to gas up vehicles for a quick escape, loading up trailers with essentials, and booking a trailer site for Sunday night. It is not healthy for trauma to be stored in a person's psyche for long periods of time. We must protect our residents from further traumatic situations.

Recently the GoA announced a mental health model n the Calgary Herald:

> Monday, June 8, 2020, the Honourable Jason Luan, Associate Minister of Mental Health and Addiction presented a brief model of his yet-to-be-released Addiction & Mental Health model for Alberta. The government acknowledges that addiction and mental health goes through 3 stages (impact, response, and recovery), their model will target recovery.

Redwood Meadows residents request upstream protection so that trauma is prevented due to future floods and wildfires. By preventing the impact stage of the GoA's new mental health model, it will also prevent

mental health problems which has costly consequences such as sick leave and long-term disability from work.

Summary

As stated in this document, there is much at stake for the thousands of residents living upstream of the proposed SR1 Intake. Redwood Meadows residents ask that SR1 be stopped for the many reasons listed in this letter.

Dr. Dave Klepacki states:

> **McLean Creek** dam proposal uses common flood mitigation technology employed at Switzerland, Norway, and Japan. These jurisdictions are comparable to Alberta. There is no comparable structure that we could identify through internet searches anywhere in the world. Current estimates for a dam at the site by IBI/Golder are $300-400MM. It would catch 94-96% of Elbow River runoff, control river levels for all downstream residents, minimizes aquifer flooding and the need for expensive and ineffectual berms at Bragg Creek, Redwood Meadows, and other downstream communities. It also would hold spring runoff waters to provide drinking water security to increasing downstream populations (500,000+) during low summer flows, help with wildfire suppression, and provide lake recreational opportunities for Kananaskis visitors.

Question for GoA: where are there comparable structures to SR1? The two mentioned in the first GoA document are not comparable.

All Albertans, both upstream and downstream of the proposed SR1 have an equal right to be protected from floods. It is unjust and unfair not to have equal protection.

The costly factor of the City of Calgary running out of water by about 2016 should alone be a sufficient problem for the regulators to deny SR1. It is in the Best Interest of Albertans for a forward-thinking decision to enable water management by having a permanent dam built. If Calgary has a water shortage, it is likely that the towns upstream of Calgary will also be impacted. In other words, many Albertans on the Elbow River will benefit by a permanent water supply. There is no need for a second costly structure to be built on the Elbow River in the future to meet Calgary's growing water needs. Now is the time for the regulators to not recommend SR1.

Redwood Meadows residents respectfully request that IAAC (CEAA) and NRCB decline the Proponent's application for the SR1 project.

We respectfully request a dam be built as the best flood protection and water management solution for the forgotten Albertans living upstream of the proposed SR1.

All Albertans along the Elbow River deserve to be protected from floods and erosion**. See Appendix S** that provides facts about SR1 and MC1 comparisons.

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Appendix A: MLA Miranda Rosin receives 1,027 petitions to stop SR1, from Karin Hunter, President, Springbank Community Association, September, 2019

Rosin presents SR1 petition letters to Legislative Assembly

Written by Noel Edey Sunday, Nov 10, 12:55 PM

https://cochranenow.com/articles/rosin-presents-sr1-petition-letters-to-legislative-assembly

Miranda Rosin presents 1,027 hand-written petitions to the Legislative Assembly prepared by opponents of the Springbank off-stream reservoir project.

Banff-Kananaski MLA Miranda Rosin has followed through on her commitment to opponents of the Springbank off-stream reservoir project (SR1).

Last week in the Legislative Assembly, the MLA tabled 1,027 hand-written letters of petition against SR1.

The letters call for a review of the project and the need to consider an alternative mitigation project on the McLean Creek.

In addition, Rosin says she was pleased to welcome the Springbank Action Coalition to make a presentation to the Alberta government's south rural caucus meeting. There, they detailed the detrimental impact the SR1 will have on their communities.

In a Facebook post, Rosin expressed pride in having brought the petitions to the floor.

"It has taken six years too long to have your voices heard on this file, but this week - for the first time - we made progress," wrote Rosin.

Appendix B: MP John Barlow attended a monthly meeting of the Elbow River Sustainability Alliance

Pictured below are some of the Elbow River Sustainability Alliance, from left to right: Dr. Dave Klepacki, Barbara Teghtmeyer, Dr. Karen Massey, MP John Barlow, Julia Handrahan, and Dave Rupert. October 2019

Appendix C: Opposition to SR1 announced August 26, 2014

jwood@postmedia.com

Residents oppose flood reservoir proposed for Springbank

TREVOR HOWELL, CALGARY HERALD 08.26.2014

COLLEEN DE NEVE / CALGARY HERALD thowell@calgaryherald.com

Landowners west of Calgary are gearing up for what could be a protracted battle with the Alberta government over its bid to build a massive, off-stream reservoir in Springbank to mitigate future flooding in communities downstream.

“We want the project taken off the table in favour of upstream options,” says Ryan Robinson, whose family settled in the area nearly about a century ago, ranching and farming the land for generations.

“People don’t want this,” Robinson said. "It’s going to devastate our community ... it’s unacceptable to us."

He said residents and landowners were shocked to learn through media reports in April of the province’s announcement to examine building a 570-hectare reservoir capable of holding 59 million cubic metres of water diverted from the Elbow River.

If approved, the project would affect at least two dozen landowners, who would need to be bought out by the province.

The off-stream reservoir was one of three proposals revealed by government officials during a flood symposium in Calgary this spring.

Officials said they were considering a 50-metre-high dry dam structure to be built southwest of Bragg Creek. They have estimated it would cost about $190 million to build either the dry dam or the off-stream reservoir. That price tag doesn’t include land acquisition costs.

Additionally, the province is analyzing a feasibility study for a diversion tunnel in Calgary that would steer water from the Glenmore Reservoir to the Bow River via a five-kilometre tunnel buried beneath Heritage Drive. That project could cost $500 million.

A spokesman for Alberta Environment and Sustainable Resource Development said Monday that several factors — including lower cost, less environmental impact, topography and proximity to Calgary — make the off-stream reservoir in Springbank more favourable than the dry dam option at McLean Creek.
"At this point, it's looking like the strongest option," Jason Penner said. "It's fairly close to Calgary so it's in a location where you're able to catch a lot of the water throughout the basin."
"If you have it further upstream, then you can stop water at that point," he noted. "But everything that enters the river downstream of that is not controlled."
Penner said the province has met with landowners in Springbank this summer and will release the terms of reference for an environmental impact assessment in the coming weeks.
"We really are excited about the potential for the Springbank project," he said. "We think it can be a very successful piece of flood mitigation infrastructure for the City of Calgary."
At the Val Vista Ranch, Robinson stands near the homestead his family built in 1936 and looks to the south where his house sits nestled in a patch of trees.
Under the current proposal, the reservoir would cut into the land where the ranch has existed for generations. His house would be fully submerged by water.
It's not a reality he, or others in Springbank, are willing to accept without a fight. Last week, a group of residents launched a website (dontdamnspringbank.org) outlining their concerns.
The group compares the off-stream reservoir to "open-pit mining operations" in Alberta's oilsands, questioning the impact on the environment and noting that existing oil and gas pipelines near the proposed site could be breached.
Further, Robinson and the others are unsure why the province has seemingly taken the McLean Creek dry dam off the table. "We're downstream of Bragg Creek and Redwood Meadows, and by putting the dam here it doesn't protect those communities," he said. "And they were some of the hardest hit areas of Alberta, and this option doesn't protect them."
Jerry Arshinoff, the Rockyview County councillor who represents Springbank, said the provincial government has not provided residents — or local politicians — with enough details on the off-stream reservoir."To say we were caught off-guard is stating the case mildly, it was like a lightning bolt from the sky," Arshinoff told the Herald in a phone interview.
Arshinoff said he was under the impression that the off-stream project in Springbank was the least likely of the three proposed flood mitigation projects announced in April.
"I'd like to know what the plan is," he said. "What we all expect is to see a plan and then have a discussion on that plan. We're waving in thin air right now because we don't know at all what is being proposed."

jwood@postmedia.com Note that yellow highlights are added for this document
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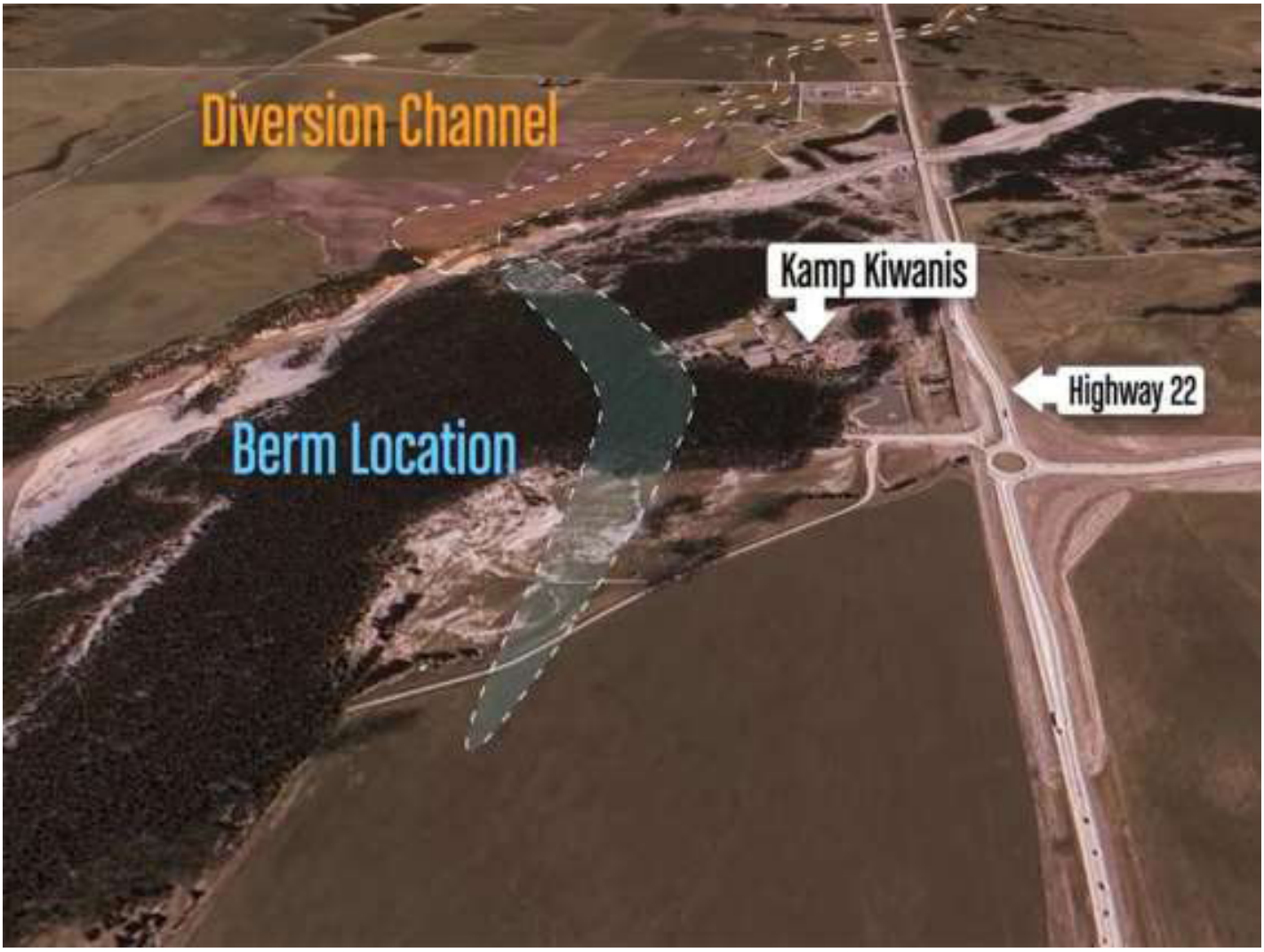
“I’d like to know what the plan is,” he said. “What we all expect is to see a plan and then have a discussion on that plan. We’re waving in thin air right now because we don’t know at all what is being proposed.”

Appendix D : NDP sticks to its guns as controversial Springbank dam price climbs to $432M in 2017

Author of the article: **James Wood** • Calgary Herald, Publishing date: **Aug 12, 2017**



This image from the government of Alberta provides a satellite view of the proposed locations of the diversion channel and end berm of the Springbank dry reservoir

"This project is the best option to protect the City of Calgary and other downstream communities from another event like the 2013 flood disaster."

The Springbank dam is intended to divert the Elbow River and temporarily store its water as protection from rising waters.

Former premier Jim Prentice announced the project in the fall of 2014, just days before calling a byelection in the flood-affected riding of Calgary-Elbow.

Then, the government maintained the massive flood mitigation dam would cost an estimated $250 million — an expenditure the New Democrats roundly criticized during the 2015 election campaign.

This visualization by the Alberta government shows what the reservoir would look like when it's full. /Government of Alberta

Once in government, the NDP reversed course and declared it would proceed with the controversial off-stream reservoir despite concerns the project would trigger a protracted legal battle with Springbank landowners and questions about whether the project made economic sense. The most recent price tag for the project was $263 million.

While it has support from the City of Calgary and the Calgary River Communities Action Group, the dam is opposed by landowners who will have their properties expropriated and the Tsuut'ina Nation.

Friday's announcement comes as little surprise to Don't Dam Springbank spokesman Ryan Robinson, whose group has long criticized the project as misguided and expensive.

It's interesting to finally get some more updated numbers, and it's really interesting that now they've come to the same conclusion as our group," he said.

"The McLean Creek dam, which protects more people, is upstream of Redwood (Meadows,) Bragg Creek and the (Tsuut'ina) Nation — protects all those communities and is cheaper."

He also questioned the government's plan to offset the project's cost by selling surplus land.

"That's the most interesting thing — since Day 1, the government has said Springbank will be cheap, easy and quick," he said.

"Suddenly, there's some kind of weird idea that they would sell some land to someone at some future time — it's a rich stretch."

Opponents of the project won a legal victory in June, with a federal court ruling that Environment Minister Catherine McKenna had to decide whether a public review panel will conduct an environmental assessment of the project.

View of part of Mr. J.R. Robinson and Mr. Ryan Robinson ranch in the footprint of proposed SR1

View of devastation in Calgary from the 2013 flood

The Canadian Environmental Assessment Agency (CEAA) had previously ordered an assessment of the dam project that would be conducted by the agency itself. A public review panel could have significantly slowed the environmental approval process.

However, McKenna has now personally directed the CEAA to conduct the review as planned and will not order a public review panel, according to an Aug. 8 letter to Tsuut'ina that Chief Lee Crowchild posted on the agency's website.

The Alberta government released the higher price tag for the Springbank dam as it announced it was implementing some short-term recommendations for drought and flood mitigation from a new report from the Bow River Working Group.

These include expanding existing agreements with TransAlta and using Barrier Lake for flood mitigation purposes rather than drought mitigation. It will also launch discussions with irrigation districts to improve water retention for agricultural use downstream of Calgary.

Appendix E: June 3, 2020, Springbank Off-stream Reservoir Spring 2020 Update, Budget $432M

Pamphlet, Excerpt: Project Timing & Budget

The Government of Alberta is committed to improving and developing flood mitigation to protect southern Alberta and Calgary. This includes moving forward with the Springbank Reservoir. Construction would begin following regulatory approval. The Springbank Reservoir will be functionally operational (1:100-year flood) after the second year of construction and fully operational after the third year of construction. The budget for the Springbank Reservoir is $432 million. The final budget will be known once land acquisition is complete and costs for final design are known.

Appendix F. MLA Once-defiant rancher sells land for Springbank Dam but resistance remains

Author of the article: **Bill Kaufmann**
Publishing date: January 30, 2019

John Robinson, long-time rancher in the Springbank area, right, with his son Ryan and grand-daughter Samantha, pose for a photo at their property in August 2017. LEAH HENNEL/POSTMEDIA

A once-vocal critic of the controversial Springbank dam project has sold his land to the province, bringing the project a step closer to fruition.

The Robinson family, a multi-generational steward of the ranching property west of Calgary, has agreed to part with 188 hectares of land that would take in part of the dry dam footprint meant to ward off future flooding of the Elbow River that submerged parts of the city in 2013.

On Tuesday, Transportation Minister Brian Mason said he hopes the sale — that brings 20 per cent of the needed land under government control — signals movement in pushing the contentious proposal forward.

“This is a significant step forward for the project and I’m confident we will successfully complete this project for flood mitigation,” he said. Even so, Mason noted repeated regulatory roadblocks thrown in its way and compared them to the frustration generated by obstacles to the stalled Trans Mountain pipeline expansion.

Appendix G.:Tsuut'ina Nation vows to oppose SR1, March 9, 2017

Tsuut'ina Nation vows to oppose Springbank dam

Mar 9/17 A-1

NDP defends flood mitigation plan, denies claim of lack of consultation

EVA FERGUSON

Members of the Tsuut'ina Nation are accusing the province of failing to consult them on the Springbank dry dam project, fearing it will pollute groundwater and put reserve lands at risk in the event of another flood.

Leaders with the First Nation southwest of Calgary say they will consider all legal avenues in a fight against the $200-million proposal, put forward by the NDP government as the best way to divert rising waters similar to Alberta's historic 2013 flood.

"This is a diversion that is right on our border, just a few metres away, of course we are concerned and we have never been consulted," said Tsuut'ina spokesman Kevin Littlelight.

"This thing has gotten a lot bigger than we would like and there's no question it's going to have an impact on us.

"We're exploring all our legal options and we are standing by the document the NDP has sanctioned — the UN Declaration on the Rights of Indigenous People."

After years of debate and controversy since southern Alberta suffered more than $5 billion in infrastructure damage in the 2013 flood, the NDP has decided to reduce risk along the Elbow River through the Springbank project.

A 2,400-hectare dry reservoir would be built near Bragg Creek to capture water, as well as a dryland berm adjacent to the river.

But work cannot begin until a series of provincial and federal environmental assessments are complete.

Brian Mason, NDP Minister of Infrastructure and Transportation, said Wednesday the Springbank project is the best alternative to protect Calgary and other downstream communities from a repeat of 2013's devastation.

He added that the province has, in fact, consulted with Tsuut'ina from Day 1 and continues to make them part of the process.

"We've looked at all of the alternatives and evaluated them carefully, and based on expert advice we decided on Springbank.

"We have been consulting with the Tsuut'ina ... we've conducted a number of site visits with them and we've provided funding to them so they can participate fully in the environmental impact assessment."

But newly elected Tsuut'ina Chief Lee Crowchild says the nation only learned about the possibility of the dam's negative impacts from "third party sources," such as town hall meetings.

SEE DAM ON A4

■ SEE DON BRAID'S COLUMN ON A4

WITH TSUUT'INA REJECTION, FLOOD DAM HITS BIG SNAG

March 9/17
A 4

DON BRAID

As Calgary moves into its fourth spring since the great flood of 2013, there's suddenly a shocking question.

Without the consent of the Tsuut'ina, can the dry dam at Springbank be built at all?

The First Nation threw a jolt into the NDP Wednesday with a clear — and brand-new — declaration that it does not support the project.

"We're opposed, totally opposed," said spokesman Kevin Littlelight.

Chief Lee Crowchild insisted the dam will not go ahead until the NDP "has fulfilled its legal and moral obligation to seek Tsuut'ina's consent for this massive and permanent project."

He also said Tsuut'ina has not been consulted, a claim disputed by Infrastructure Minister Brian Mason, who says many meetings have been held.

Crowchild, who was elected last October, leaves a bit of wiggle room for more study. But the core message is that the band wants the government to return to the McLean Creek project further upstream.

I asked Mason if the government could build the Springbank dry dam without formal consent from the nation.

"We have to work together to the point where they feel they can support the project." he said. "We want to accomplish that. That's very important."

And then:

"Whether or not we would proceed without their absolute consensus is something I don't feel I can answer. I just don't know the answer to that today. We would certainly like to get their agreement."

Calgarians know very well how such projects can stall out, especially when they involve the province, Ottawa and the Tsuut'ina. Approval for the ring road through nation land took, oh, half a century.

This is tricky for the New Democrats, who believe they have done more to respect indigenous people's rights than any previous Alberta government.

Some on the nation don't see it that way. Littlelight says that he and others liked the NDP because Premier Rachel Notley campaigned against the Springbank dam in 2015.

After the election, the government reviewed both projects and switched back to Springbank.

"We were in favour of the NDP at the time," says Littlelight. "A number of people were. I know I was."

"And then they flip-flopped, and they're still proceeding (with Springbank.) That's the heart of the thing — you trust people, and all of a sudden they implement — like the past regime. That doesn't sit well with aboriginal people."

The Tsuut'ina and the government also have a sharp difference over the impact of the dam.

"Our homework is done," said Littlelight. "The dam has gotten a lot bigger. There's no doubt it will have an effect on water through the Tsuut'ina Nation.

"We will really strongly feel its negative effect. We have about 3,000 people who would be directly affected."

Crowchild says the nation has learned from a third party — not the government — that a diversion gate would be located less than half a kilometre from its land. "Water backing up during a flood diversion would directly impact Tsuut'ina, especially in the Redwood Meadows community," he adds.

Mason says:

"We had a consultation meeting with them in the Springbank area a month or six weeks ago, department officials attended, and it was pretty clear that the Tsuut'ina had formed an alliance with the Don't Dam Springbank landowners there."

The minister also disputes the claim that the dam would damage Tsuut'ina water or land.

"We don't believe it will. It's not on their land. To the best of our understanding, the project will not, even in a flood situation, affect their land.

"If there's impact on their land, then that's a matter of serious concern. But I don't think it's been demonstrated that this is the case at all. In fact, we expect it's not the case."

An environmental study due by the end of March should give a clear answer, he said.

"I think we can't lose sight of the bigger picture, which is that we need to take steps to make sure that kind of flood doesn't devastate Calgary and its economy as it did."

As for the Tsuut'ina claims, he said, "If in the end we're proven wrong, and the court or someone shows we've missed the boat, we'll have to cross that bridge when we come to it.

"But I don't think people would forgive us if we didn't see this through, and then we had the same flood, or worse."

He's got that part right.

Don Braid's column appears regularly in the Herald
dbraid@calgaryherald.com

Appendix H: First Nation gets $32M grant after it drops opposition to dam plan

- Calgary Herald A8 29 Apr 2020 LAUREN KRUGEL

The Tsuut'ina Nation says it has ended its opposition to a proposed reservoir that would protect Calgary during flooding because it secured a $32-million grant from the Alberta government.
The money is to be used for flood mitigation, restoration and prevention.
The First Nation's chief and council said in a statement posted to its Facebook page this week that concerns about the $432-million Springbank Off-stream Reservoir remain on the record.
"We have not given up on our inherent treaty rights and we have not given up our rights to water," they said.
The First Nation's leadership planned to discuss the matter with community members, but a meeting could not be held because of the COVID-19 pandemic.

The project would help protect the city of Calgary from a repeat of destructive 2013 floods by diverting water from the Elbow River to a reservoir that could hold the equivalent of 28,000 Olympic-sized swimming pools. The water would be channelled back into the river when a flood subsided.

Calgary Mayor Naheed Nenshi said the project, which is waiting for a regulatory green light, is essential.
"I'll say to the province of Alberta, 'Thank you for doing everything you can to clear whatever barriers remain in the way to get that built,'" he said Tuesday.
"I'll say to the government of Canada, 'I know you're very busy, but man, oh, man, that environmental assessment is very late. We need that approval and we need it quickly.' "

The reservoir has faced stiff opposition from some landowners, who would prefer another site farther upstream so as not to affect their properties.

The Alberta government said in September it had acquired about 20 per cent of the land it needed to build the dam.

The Tsuut'ina statement notes its grant does not depend on environmental approval for the project.

The First Nation wrote to provincial and federal regulators earlier this month to say it was **withdrawing its objections** and would no longer take part in the environmental review.
Gord Olsen, a spokesman for the Tsuut'ina Nation, said concerns the community shared with other stakeholders will still be dealt with.
"There are, as I understand it, a number of issues that are still before that (review) panel that will need to be reviewed and reported upon in the course of their work."

A spokeswoman for the Alberta Ministry of Transportation said the provincial government is pleased it reached an agreement.
"We will continue to consult with our First Nations partners and affected communities to address their concerns."
The Canadian Press

Appendix I-1: Rocky View County withdraws opposition to SR1

MAY 15, 2020 BY CRC ACTION GROUP IN NEWS

On May 12, Rocky View County council voted 6-3 to withdraw its opposition to the Springbank Off-Stream Reservoir (SR1).

The official letter notifying the Natural Resources Conservation Board (NRCB) of this change states:

I write to you on behalf of Rocky View County. Rocky View County hereby withdraws all of its objections in relation to the Spring Bank Off-Stream Reservoir project proceeding through the regulatory process. Should you have any questions, please contact me at (403) 880-7062 or email me at GBoehlke@rockyview.ca

ROCKY VIEW COUNTY

Appendix I-2.: RVC withdraws opposition to SR1

May 14, 2020 10:00 AM By: Scott Strasser

Rocky View County (RVC) council has withdrawn its official objection to the Springbank Off-Stream Reservoir (SR1).

During a regular meeting May 12, council voted 6-3 to withdraw its opposition to the controversial project undergoing environmental and regulatory review by the federal government's Natural Resources Conservation Board (NRCB) review, as well as the Alberta government.

According to a press release from RVC, the decision was made after the Alberta government announced $196.3 million to help continue work on SR1 over the next three years.

"With the province's clear commitment to SR1, RVC will allow any concerns or issues over the project to be dealt with through the relevant approval processes," the release stated.

The vote comes 18 months after RVC council voted to oppose SR1 in December 2018, unless 'other flood mitigation options were subjected to a full analysis.'

Area Coun. Kim McKylor was one of the three dissenting votes, along with Coun. Jerry Gautreau and Reeve Greg Boehlke.

"RVC has repeatedly expressed its firm commitment to flood mitigation that would assist the city of Calgary," she wrote on Facebook following the meeting. "Since SR1 was first announced, County

council's efforts have always been focused on ensuring that the right project be selected to provide the needed flood protection. To Springbank residents, the NRCB has a full suite of data and submissions on the project, and anything that is likely to delay, kill, or change SR1 is already there for them to consider. The County's opinions are now largely irrelevant. If the NRCB finds something amiss, they will move to correct it."

McKylor also thanked the efforts of the Springbank Community Association and members of Don't Damn Springbank – a grassroots group of area residents that formed to challenge the project, and suggest alternative options for flood relief.

"It is work that is has not gone unnoticed from many, and I certainly have hopes that the real concerns raised give this project pause at the federal level," McKylor said.

Following council's vote, Coun. Mark Kamachi made a motion that if RVC receives any compensation from the provincial or federal government regarding damages and/or loss of tax revenue from the lands associated with the project, those funds would be earmarked for recreational or cultural amenities in Springbank.

"This was one of the toughest decisions ever," he said. "It affects Bragg Creek, Redwood Meadows and Springbank. If this compensation can go towards those areas...we've seen the traffic circle get taken away, and I'm just at the point where, even today's announcement that there's more money going towards this project. I just think it's inevitable it's going to happen."

Council approved Kamachi's motion, with Coun. Kevin Hansen saying it was "the only good thing coming out of this." "Folks in Springbank are being impacted every day by this, and I think this is only fair and just," he said. "The tax is really a red herring – I think this is more of a quality of life situation."

Coun. Gautreau was the sole opposing vote.

The Alberta government initially announced SR1 in 2014 as a flood mitigation effort in the wake of the 2013 floods. The reservoir, which would be located in west RVC and on Tsuut'ina First Nation land, would be designed to help control Elbow River flow rates during a flood and help protect residents and property in RVC and Calgary. The reservoir, initially priced at $250 million, would temporarily store flood water and release it back to the Elbow River in a controlled manner when the flood subsides.

The project has received backlash from various groups over the years, including residents in Springbank and the Tsuut'ina First Nation. Opponents have cited the cost, potential environmental impacts and lack of transparency and consultation from the government surrounding the project.

Tsuut'ina First Nation officially withdrew its formal objection in April. According to spokesperson Gordon Olsen, newly elected Chief Roy Whitney was looking to reopen discussions to help the project break ground.

"He was willing to have a discussion with the proponents of SR1, mainly the provincial government," Olsen said. "The new Minister [of Transportation] the honourable Ric McIver was really prepared to listen to what the concerns were and to find ways to mitigate those concerns."

In a CBC report, Tsuut'ina First Nation stated it had received a $32 million grant from the government in exchange for removing its objection to the project.–*With files from Chelsea Kemp/CochraneTODAY.com*

Appendix I-3. Rocky View County signs SR1 compensation agreement

about 21 hours ago By: Airdrie Today Staff

Rocky View County (RVC) has signed an agreement with the Alberta government to receive compensation for any lost revenue should the Springbank Off-Stream Reservoir project (SR1) be completed.

According to an RVC press release, the County will receive $10 million from the provincial government to address any future loss of municipal property taxes on the 3,870 acres of land that would be impacted if SR1 proceeds,.

“The Alberta government is also committed to deal with certain road or infrastructure issues that may arise from the construction and operation of SR1,” the release stated.

The Province has announced its financial commitment for a number of transportation projects in the County that are not tied to SR1. Those commitments include $2.5 million for upgrading the intersection at Highway 560 and Garden Road – west of Langdon near the Calgary boundary – as well as $8 million for a new roundabout at Highway 566 and Range Road 11 in east Balzac.

The Government of Alberta has also committed to undertake improvements on Hwy 22 at Bragg Creek, according to RVC, and will “work closely with the County and the Tsuut’ina Nation to implement safety and congestion solutions,” and enable further development in the area to occur.

“Proper flood protection for Bragg Creek has long been a concern of the County with the SR1 approach, and an additional announcement has helped mitigate that issue,” the release stated.

To fund flood mitigation in Bragg Creek, according to RVC, the provincial government will commit $9.4 million, on top of the $32.8 million already dedicated by it and federal government.

RVC council voted May 12 to withdraw its objections to seeing SR1 proceed through the provincial and federal regulatory review processes. The County had originally opposed moving forward unless other flood mitigation options were subjected to a full analysis.

“For our part of the agreement, we have essentially agreed to trust in the federal and provincial processes,” Reeve Greg Boehlke said in a statement. “The Province will have to meet very high standards to pass environmental and regulatory reviews for SR1. If the standards are met, they can move forward.”

Since the 2013 floods in southern Alberta, RVC has supported the need for flood mitigation measures for the region, according to the release.

“However, the County was repeatedly blindsided by surprise announcements on SR1 from the previous provincial government, and had difficulty obtaining any meaningful information on the project and its impacts,” the release stated.

According to Boehlke, communication between RVC and the provincial government has improved since then.

“That has led to mutual understanding and co-operation for a number of long-standing issues, opportunities, and concerns, including SR1,” he said.

“We’re all committed to building the right flood mitigation projects for the people of this region. By working together, we’re ensuring that the goals of public safety, enhanced quality of life, and economic wellbeing can be met, while respecting the environmental and regulatory processes that are in place to protect everyone.”

Flood mitigation funding, interchange promise win over Kamachi

https://cochranenow.com/articles/flood-mitigation-funding-interchange-promise-win-over-kamachi

Written by Noel Edey Wednesday, Jun 03, 2020. 11:54 PM

RVC councillor Mark Kamachi says taking objection off the table for SR1 was a tough decision, but will benefit the Bragg Creek area. (file photo)

Rocky View County councillor Mark Kamachi is relieved to be able to talk about why he switched his vote on the Springbank Off-Stream Reservoir (SR1).

Kamachi was branded a traitor and turncoat by some after supporting the council's decision to pull its objection of the proposed flood mitigation mega-project.

Kamachi says what the province put on the table holds huge benefits the Bragg Creek area, Springbank, and the whole of the county. He decided it was better to get something, rather than nothing.

The province has promised the long-desired traffic circle on Hwy. 22 at the entrance to the community will be completed no later than 2025, says Kamachi.

The county also received $9.4 million to complete flood mitigation in the hamlet.

Finally, $10 million is being provided for lost tax revenue that will be earmarked for use in the Springbank area. Kamachi gained support for his motion to use that revenue to enhance facilities in Springbank.

"It was a tough decision because I was going against what I originally stood for. I still am against SR1. I still would support another alternative, ideally McLean Creek." "I think people are more understanding of why I switched my vote. I had people calling me traitor and turncoat, without knowing the details. It was tough not to say anything to defend that decision."

Just last year, he came face-to-face with the safety and traffic issues surrounding the awkward conjunction on Hwy. 22 as you enter the hamlet. "Last year, I almost T-boned a car that pulled a U-ie in front of me," says Kamachi. "That was a good reminder to people that it is causing a lot of dangerous situations with people being stupid. Thankfully I didn't t-bone these two young girls in the car."

"The traffic circle has been a huge issue for Bragg Creek. Even prior to my becoming a councillor, it was always an issue for residents, especially on a nice summer weekend."

The project was close to being announced a few years ago but was pulled off the table when the Tsuut'ina Nation complained they had not been consulted. Now the province, RVC, and Tsuut'ina will be involved in discussions.

Flood mitigation now underway in Bragg Creek will cost $9.4 million more than originally projected. If the provincial government did not come up with the funds, RVC would have to look to ratepayers to cover the cost, he says.

In early 2017, formal grant contribution agreements were signed by the provincial and federal government for a total project budget of $32.8 million.

Appendix J: Rocky View County Council Opposes SR-1

Wednesday, December 12, 2018

Rocky View County Council has voted to formally oppose the Springbank Dry Reservoir project and ask the Province to conduct a full and comprehensive analysis of all the available options for flood mitigation.

The County strongly supports the need for flood mitigation in the Calgary region, but believes that other options to the Springbank Dry Reservoir (SR-1) have not been properly considered. A report from County Administration indicated that four other options to the SR-1 project, each with unique benefits, should be examined by the Province before final decisions on flood mitigation are made.

Alternate projects include initiatives at McLean Creek, Priddis, and the Tsuut'ina Nation, plus a comprehensive Room for the River approach that would spread flood mitigation among several projects and approaches throughout the region. The County's report indicates these alternate projects did not undergo a thorough cost-benefit analysis, which skews comparisons to SR-1, particularly as the price tag for that option continues to grow.

The County's report indicates other concerns with the overall approach to flood mitigation, including:

- The impacts of SR-1 in protecting Calgary are placed solely on Rocky View County, with no flood-mitigating benefits for the County or any other area municipality or First Nations land.
- Other options were not given the same level of technical evaluation as SR1, which resulted in the premature dismissal of
- other options.
- Other mitigation measures identified in the Alberta WaterSmart Room for the River report were not considered for implementation.
- The operational parameters of SR1 were changed, impacting how often water will be diverted into SR-1 and impacting downstream wetlands and ecological areas.
- The lack of consultation with both Rocky View County and the Tsuut'ina First Nation throughout the project.

The Province's decision-making process was also drawn into question, as value-based decisions favouring SR-1 were made by technical experts without the input of impacted stakeholders and the public. For example:

- The need to mitigate droughts as well as floods was dismissed.

- The intrinsic value of agricultural lands was not considered.
- Recreation opportunities were not considered.
- The number of homeowners impacted was not a factor.
- It was inexplicably decided that having mitigation physically close to Calgary was more important than protecting a larger number of communities, including Calgary.

Throughout Council's debate on the SR-1 report, councillors repeatedly emphasized the need for flood mitigation, and the importance of making the right decisions based on a comprehensive analysis of all the available approaches.

Council will write a letter to the Province of Alberta requesting that SR-1 and the four other leading options be thoroughly investigated and evaluated to ensure that the flood mitigation approach taken is the correct one for all Albertans.

Attachment K: Alberta's Springbank off-stream reservoir receives $168.5M in federal funding

***By* Adam Toy 770 CHQR,** Posted March 13, 2019 5:03 pm
Updated March 15, 2019 4:35 pm

The Springbank off-stream reservoir project, a response to the 2013 flood in southern Alberta, is one step closer with funding from the federal government.

Minister of Infrastructure and Communities Francois-Phillipe Champagne, announced $168.5 million to go to the development of the project located 15 kilometers west of Calgary.

"We heard from citizens who have been impacted, community leaders who have told us that this is not just another project," Champagne said Wednesday. "This is a life-saving project. This is about maintaining a community. This is about maintaining livelihoods. This is also about maintaining the core of Calgary."

READ MORE: Calgary mayor frustrated with Rocky View County vote to request halt on Springbank dam project

Construction is not slated to start until both a federal environmental assessment and Indigenous consultations have been completed.

"Will we be able to satisfy Tsuut'ina's concerns and answer all of their questions? I believe we will," Alberta Minister of Transportation Brian Mason said. "Will we be able to purchase the land to build the project? I believe we will."

READ MORE: Ranchers team up with Tsuut'ina to oppose Springbank dam

The contentious off-steam reservoir is designed to work with the Glenmore Reservoir to hold the volume of water equal to the 2013 flood that

devastated southern Alberta communities like Calgary, High River, Canmore and Okotoks.

The Springbank reservoir would hold 70.2 million cubic meters of water along with Glenmore's 10 million.

Provincial report says Springbank Dry Dam is best option to help prevent flooding

Provincial report says Springbank Dry Dam is best option to help prevent flooding

On Jan. 29, the project moved closer to completion after the province acquired 188 hectares of land from the Robinson family needed for the project. The total project's footprint is set to be about 1,566 hectares.I expect that we're going to have ongoing conversations and negotiations with the other landowners," Mason said. "We don't want to expropriate but I've made it clear that, if necessary, we will. We would much rather enter into a real, fair agreement to purchase the land on a voluntary basis with the landowners.

Attachment L: Alberta Includes Funding for Springbank Reservoir in 2020 Budget for $196.3M

By Simran Chattha, May 13, 2020

The Government of Alberta has included a commitment in its 2020 Budget to provide $196.3 million over three years for the Springbank Off-Stream Reservoir.

The Springbank Off-Stream Reservoir is an essential part of flood protection for Calgary and southern Alberta. Once complete, it will provide flood mitigation along the Elbow River to protect southern Alberta and Calgary from future flood events. The project is currently moving through the federal and provincial regulatory process.

"Our government remains committed to moving the Springbank dam through the regulatory process as quickly as possible to ensure that Calgary and southern Alberta have necessary flood mitigation in place before the next major flood event occurs," said Ric McIver, minister of transportation.

"The residents of southern Alberta and the province's economy cannot handle another major flood, which is why Budget 2020 includes funding to move [Springbank Off-Stream Reservoir] forward," added McIver. "I am pleased with the work my department is doing on this important project and we will continue engaging with stakeholders, First Nations partners and other impacted groups to address their concerns about the project."

PART 2: IMPACT of Proposed SR1 on Redwood Meadows

Appendix M-1: Pictures of Building Bragg Creek Berms, A Work in Progress

The following pictures were taken by Redwood Meadows resident Sharon Pegg on **Sept 14, 2020**. Location is upstream from Redwood Meadows.

Many residents in Bragg Creek knew that these berms were a big mistake and spoke against it and the short sightedness of this option, but to no avail. Berms, as can be see below, ruined the natural beauty of the Hamlet. The GoA now needs to NOT make another mistake and entirely ruin the natural beauty and wildlife homes in Springbank. Trees are gone that were along the river, lifeless rocks are in their place.

There is still time to chose to build MC1 as a way to manage the river. Do not fall into the trap of the old ways of TRYING to control the river. We already know from the history Redwood Meadows berms in 1995, 2005, and 2013 where rip rap was washed away and dirt berms eroded, that there is actually no control of the river using berms. As has been said at the Open Houses, in the end Mother Nature will still "win" such as by creating an even larger flood that the proposed SR1 Intake will not be able to handle. More floods and stronger hurricanes are already happening in the United States that are being attributed to climate change. Likely then, Redwood Meadows may pay the price and be backwater flooded.

Where is the BEAUTY in berms?

Millions of dollars were spent on this smaller rip rap like Redwood Meadows had delivered in 2013. There is no guarantee that this rip rap will be there after the next big flood, just like Redwood Meadows has experienced in the last three floods. How many more times will taxpayers have to pay $MILLIONs for rip rap that is swept away during floods? AND cannot protect the dirt berm, which is then eroded. Stop wasting our tax payers money on berms. Think long term, river management using a dam.

Construction of Berm in Progress at Bragg Creek Hamlet, September 14, 2020

These berms are for flood control on the Elbow River. Due to lack of a dam, there is not yet water management on the Elbow River that coordinates these berms with those in Redwood Meadows nor the proposed SR1. Notice all the beautiful trees on the right hand side, the Bragg Creek side, are now gone.

Shame on you, the GoA for destroying the natural beauty that Bragg Creek Hamlet was known for. A big mistake was made in not waiting until MC1 dam was decided to be built. Let's not make the same mistake and build SR1 and irrevocably ruin the Springbank environment, land, springs, wells, wildlife habitat, and people's enjoyment of the irreplaceable natural grasslands and ranch land this area offers.

Where is the Beauty in Silt?

These pictures are from Mary Robinson's ranch after the 2013 flood. The deep silt from the Elbow River was everywhere.

Imagine even deeper, up to 4 meters of silt covering the beautiful Springbank ranch land and irreplaceable grasslands.

Environmentally this is a total DISASTER! Imagine the entire flooded SR1 footprint leaving behind a deeper and enormous footprint of silt. Environmentally how could any expert agree to destroying beautiful ranch land and leaving behind silt? FOREVER destroying the land. Leaving a wasteland.

Appendix M-2: The fight to save a Town

Chatter in the Woods
A monthly volunteer-driven publication from the Redwood Meadows Community Association
July 2013 Volume 20, Issue 66

The fight to save a town, Redwood Meadows joined forces with Tsuu T'ina

The mayor of Redwood Meadows went to bed just before midnight last Wednesday thinking everything was fine, given that the Elbow River was still flowing steadily at 40 cubic metres per second.

He woke up not even six hours later and the river, which winds just behind his house, was roaring past at nearly 700 cubic metres per second. **And the berms — the only structures protecting the townsite from catastrophic flooding — were barely holding.**

"If it had breached at that point, it would have taken out the entire community. I'd say we were within an hour of losing all of it," said Mayor John Welsh. "We would have been gone. And I don't mean gone to the point that we lose a couple of homes. The river would have come through and taken the community away with it. It would have been to the point that we probably wouldn't have rebuilt."

But, unlike the devastated community of Bragg Creek just seven kilometres downriver, Redwood Meadows didn't get washed out. In fact, thanks in part to the help of the Tsuu T'ina Nation and three days of residents and volunteers battling against the river, just **a third of the houses wound up with some basement water damage.**

"It's absurd. We're on a flood plain. If anyone is supposed to go, it's supposed to be us," Welsh said. Redwood Meadows is located 25 km west of Calgary and has **about 1,250 residents living in 351 homes** built on Tsuu T'ina Nation land. Close to 1,900 people are registered on the Tsuu T'ina Nation membership list. Some live on the reserve, and some live in Redwood Meadows, said band Chief Roy Whitney.

The Berm Won't Work

http://www.bownessrfm.ca/the-berm-wont-work/

11 Reasons the Proposed Berm WILL NOT Protect Bowness Residents from Flood Damages

+ 1. The river and groundwater systems are connected so an overland berm will not stop groundwater flooding.
+ 2. Basement flooding will continue.
+ 3. No groundwater control is planned.
+ 4. Secondary overland flooding is possible.
+ 5. Extended peak flow duration may make flooding worse.
+ 6. Barriers without upstream mitigation can increase damage risks.
+ 7. Floodwater enters the alluvial soils at ALL points along the river.
+ 8. The barrier does not go to bedrock.
+ 9. Sump pumps are unlikely to be effective.
+ 10. Groundwater will likely enter stormwater/sanitary systems.
+ 11. River flow rates approaching 800 m3/s will cause groundwater flooding in Bowness.

Conclusions

In conclusion, The City of Calgary should be pressing the Province to develop upstream mitigation options to limit the peak flow rate on the Bow River through Calgary to 800 m3/s. History has shown that flow rates approaching 800 m3/s will cause groundwater flooding in Bowness. Setting a target peak flow rate of 1230m3/s amounts to deliberately inducing additional damages to Bowness that would not have occurred with flow rates below 800 m3/s.

The City's efforts at this time constitute an expensive, environmentally destructive, critically technically flawed and demonstrably ineffective waste of tax dollars. Other communities are being offered effective protection from both overland and groundwater flood damages, and the residents of Bowness should be provided the same consideration.

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Appendix 0: Nearly seven years after flood, Cougar Creek dam approved for Canmore

(yellow highlights added for this document)

Author of the article: **Bill Kaufmann**
Publishing date: February 12, 2020 • (Highlights in Red are added for this letter)

Cougar Creek runs through the Trans-Canada Highway during heavy flooding in Canmore on June 21, 2013. THE CANADIAN PRESS/JONATHAN HAYWARD

A dam that would prevent a repeat of the flood damage inflicted in 2013 has been approved for Canmore.

On Wednesday, the province announced approval for a flood mitigation project on Cougar Creek in the mountain town 100 kilometres west of Calgary.

The $48-million structure would reduce the threat of water and debris damage to homes, businesses, highways and the CP Railway main line.

Also protected would be an RCMP station, school, and high-pressure natural gas and electrical transmission lines.

"The Cougar Creek Dam will help mitigate the public safety risks posed by debris floods by providing a reliable level of protection for homes, businesses and critical infrastructure in Canmore," said Environment and Parks Minister Jason Nixon.

Canmore Mayor John Borrowman thanked the province and Ottawa for providing 90 per cent of the dam's funding.

"This structure is key to our long-term mitigation and will protect thousands of Canmore residents during a flood event," he said.

Nearly seven years ago, flood waters and mountain debris damaged 44 homes along Cougar Creek and forced the evacuation of 1,200 people.

Appendix P: East Exshaw residents concerned over groundwater flooding

 Marie Conboy

More from Marie Conboy

Published on: June 4, 2020 | Last Updated: June 8, 2020 10:05 AM ED

Exshaw resident Brian Thompson points to one of the sink holes forming outside his house on June 3. "I have lived here 33 years and I have never seen flooding like this before. I am running four pumps right now. I feel the M.D. of Bighorn are denying this and not accepting what we are saying. The water is coming up from the ground into the hamlet." Photo credit Marie Conboy/ Postmedia. JPG, BA

Exshaw residents who have been pumping flowing water out of their basements, streets and yards for the past 14 days are looking for answers.

Resident Brent Peters is worried about his flooded basement and yard, and said he currently has no natural gas, no hot water and no drinking water.

“We are abandoning the basement. Twenty-eight houses are affected now and each house has at least three pumps running, pumping over 20,000 liters per hour. The fire department have stepped in to help with the pumping also. We can see where the creek comes down the drainage and then it disappears into the ground and it’s coming up around our houses,” said Peters.

“Exshaw Creek has been flowing for weeks into the pond but it hasn’t gone up. It directly ties groundwater to surface bonds. The new pond isn’t sealed and doesn’t have engineered outflow.”

Other residents are also questioning if the new project construction work is preventing the water from flowing into the river and sending it into the hamlet instead.

After Exshaw flooded in 2013 a $10.3 million debris-flood mitigation project was carried out on Exshaw Creek last year. Its main function is to collect debris. The creek was dug deeper and wider to contain water flow. Lafarge contributed $3.7 million to the project.

Pumps, hoses and generators were approved by the Alberta Emergency Management Agency for flood operations last week, and MD Operations staff worked over the weekend on day and night shifts, while Roads Department crews are on call for any creek/overland flooding incidents that may arise due to rain.

According to a post on the MD of Bighorn website on June 5 the MD of Bighorn hired a hydrogeologist to to investigate why the groundwater levels are high. The consultant spent the day in Exshaw last Friday reviewing the situation.

“He will be collecting data over the next month and a high-level report is expected to be provided to the MD of Bighorn in July. Key questions asked included: What is causing the unusually high groundwater levels in east Exshaw? Is the Exshaw Creek flood mitigation structure a cause of the high groundwater levels in east Exshaw? What could be done to mitigate the groundwater problem in east Exshaw? What would be the estimated cost of this mitigation?”

The MD of Bighorn said they would not be pumping water out of the sediment pond after the new consultant advised that the sediment pond is very unlikely to be contributing to the high groundwater levels, and pumping the water in the sediment pond over the weir toward the Bow River would have no impact on lowering the groundwater levels in east Exshaw.

M.D. of Bighorn Reeve Dene Cooper said he believes there is nothing to worry about currently.

“I don’t know of any residents that are in peril due to flooding at this time. **This is ground water flooding,** it’s periodically in the community. Right now it is a little heavier than usual, the situation points to an usually heavy snow pack,” said Cooper. **“When that snow pack melted it began to fill the aquifer that the houses are built on, then we had a rain event that gave us 50 millimetres of rain in two days, that added to the extra water that was already in the aquifer, that is the source of the problem,” he said.**

“So people are pumping and they are going to be pumping for a while, and June is generally speaking a wet month. This water is moving underground across rock slabs on a 70 degree slop. Several times a decade this looks like it does right now. I would like to thank the residents for their sincerity,” said Cooper.

Brian Thompson, who has lived in Exshaw for 33 years, said he has experienced several floods over the years but that this year is a different kind of flooding with groundwater creating sink holes around his house.

“I have lived here 33 years, I have never seen flooding like this before. I am running four pumps right now. I feel the M.D. of Bighorn are denying this and not accepting what we are saying. The water is coming up from the ground into the hamlet,” said Thompson.

Fergus SinClair, who has been a resident of Exshaw for the past 3 years, is also worried about his flooded basement.

“I get the impression that the M.D. are more worried about the liability than helping us fix the problem. If we don’t identify what the problem is and it rains badly, we are right back to where we were in 2013,” said SinClair.

Fergus SinClair, who has been a resident of Exshaw for the past 3 years, stands outside his flooding home in Exshaw on June 3. Photo Marie Conboy/ Postmedia.

Apppendix Q: Insurance Bureau of Canada Reports on Home Insurance

Types of coverage in 2013

Home insurance policies generally cover a homeowner's residential building, outbuildings, contents, additional living expenses (which may be incurred if an insured event damages the home) and liability. A tenant's insurance policy generally covers loss or damage to personal belongings, additional living expenses and liability.

There are many kinds of coverage:

• A comprehensive policy protects a home and its contents from loss or damage from all perils except those specifically excluded. A peril is a chance event that is unexpected and accidental. Coverage for some perils excluded from comprehensive policies – for example, earthquake coverage – may be purchased as an add-on to the policy. **However, for some excluded perils, such as overland flooding, no coverage is available from home insurance.**

Major issues – severe weather The increasing incidence of severe weather is a growing risk that disrupts lives and costs billions of dollars. For each year from 2009 to 2012, insured losses from natural catastrophes in Canada have been near or above $1 billion. In 2011, losses hit $1.7 billion. In 2012, losses were again $1 billion. The P&C insurance industry leads national strategies to adapt to climate impacts. IBC is funding research to design a municipal risk assessment tool (MRAT) that will help municipalities identify stormwater and sewer infrastructure weaknesses. The industry also advocates with governments at every level for increased infrastructure investment and stronger bu

2018 CATASTROPHIC LOSSES SECTION 1

Insured losses for a given disaster are deemed catastrophic when they total $25 million or more. Catastrophic losses for a year are the sum total of insured losses from these disasters. Catastrophic losses due to natural disasters have increased dramatically over the last decade.

In 2017, catastrophic losses accounted for approximately $1.2 billion. This was the result of many small losses right across the country. Unlike previous years, no one big event accounted for a large portion of this amount.

The highest-ever loss for a single year was $5.0 billion in 2016. Of the $5.0 billion, **$3.7 billion were a result of the Fort McMurray wildfire in northern Alberta, which forced the evacuation of nearly 90,000 people. The fire destroyed or damaged 2,500 homes and buildings and thousands of vehicles and resulted in about 60,000 claims in total.**

Before 2016, the **year 2013 was the record-breaker for catastrophic losses. That year, insurers paid out more than $3.2 billion, including $1.6 billion as a result of floods in southern Alberta** and around $1 billion as a result of a summer storm and flooding in Toronto. As well, at the end of 2013, a massive winter storm hit southern Ontario and parts of Eastern Canada.

Another record year for insured losses was 1998, the year that an ice storm occurred in Quebec and Ontario with six days of freezing rain, month-long power outages and $2.1 billion in insured losses.

Milestone losses of the past decade include hailstorms in Alberta during the summer of 2014 that cost insurers $545 million. **They also include the Slave Lake fire of 2011 that ravaged a remote area of Alberta, causing $560 million in insured losses. (All figures in this section are in 2017 dollars**. For catastrophic losses plus loss adjustment expenses, see the chart

CATASTROPHIC LOSSES by event 1983-2017 Loss in adjusted 2017 dollars

Date & Place	**Event Type**		
1995	**June 6-9, Calgary AB**	**Flooding**	**30,909**
2005	**June 6-8 & June 17-19**	**Flooding**	**$365,607**
2013	**June 19-24**	**Flooding in S. Alberta**	**1,698,311**

HOME INSURANCE IBC-2019-Facts Section 2 2017

An all-perils policy provides coverage for a home and its contents from loss or damage from all perils except those specifically excluded. A peril is a chance event that is unexpected and accidental. Some perils are excluded from all-perils policies – for example, earthquakes. Coverage for this peril may be purchased as a policy add-on.

Optional coverage for the peril of overland flooding has become more widely available for homeowner's insurance policies in the last three years. In 2015, some insurers began offering this coverage and, since then, others have entered the market.

HOME INSURANCE SECTION 2

Major Issues – creating more resilient communities 2019

In Canada, insurers are seeing the impacts of severe weather events that result in more flooding and water damage to homes and businesses. Over the 25-year period prior to 2009, insured losses from catastrophic severe weather events such as floods, ice storms, hurricanes and tornadoes averaged $400 million a year. Since 2009, they have averaged $1.4 billion a year.

Building resilience and adapting to the effects of severe weather involves all of us – individuals, governments and private insurers – working together.

Adapting to make our communities more resilient is not a future proposition – we are seeing the impact on our homes and businesses now. To adapt to these changing risks, Canada needs to build a culture of disaster risk reduction that resonates with consumers and engages businesses, institutions and all levels of government.

Canada needs to invest in community flood mitigation, including natural infrastructure, as well as revisit building code provisions and improve land-use planning. Homeowners also have a role to play in

reducing their own risk, and IBC makes it a priority to share information with consumers about ways they can better protect their property.

Major issues – severe weather 2014

The increasing incidence of severe weather is a growing risk that disrupts lives and costs billions of dollars. In 2013, insured damage caused by natural disasters was the highest in Canadian history at $3.2 billion. The losses of 2013 came after four years in a row where insured losses from natural disasters were near or above $1 billion, which was already a record high.

Canadian communities are seeing more severe weather, especially more intense rainfall. This can overburden sewer and stormwater infrastructure, resulting in more sewer backups in homes and businesses. Many urban communities have older stormwater infrastructure that is not built to handle these intense storms. Installing a backflow valve is one way that individuals can reduce their risk of having a sewer backup. Many communities provide incentives to assist homeowners with the cost of installation.

Major issues – climate change

Climate change is real and its costs to Canadians are mounting. In Canada, we see the impacts of climate change mainly in an increase in severity and intensity of extreme weather events that result in more flooding and water damage. Thirty years ago, insured losses for extreme weather averaged $400 million a year. Now they average $1 billion a year.

Building resilience to the effects of our changing climate involves all of us – individuals, governments and private insurers – working together.

Adapting to climate change in Canada is not a future proposition – these changes are affecting our homes and businesses now. To adapt to these changing risks, Canada needs to build a culture of disaster risk reduction that resonates with consumers and engages businesses, institutions and all levels of government.

To address current and future climate risks, Canada needs to invest in community flood mitigation including natural infrastructure, revisit building code provisions and improve land-use planning. Homeowners also have a role to play in reducing their own risk, and IBC makes it a priority to share information with consumers about ways they can better protect their property.

Major issues – flood coverage 2019

The past several years have been marked by intense rainfall events across the country that have overwhelmed municipal sewer and stormwater infrastructure. When that happens, basements flood, valuable possessions are destroyed and people's lives are turned upside down. The risk posed by water is a particular challenge for governments, the insurance industry and consumers. We all need to work together to address these risks.

Several P&C insurers started offering new products that cover residential overland flooding in 2015, and market uptake is increasing. IBC is also working with federal and provincial governments, as well as organizations focused on flood-related issues, to advance a whole-of-society approach to reduce flood risk for Canadians.

IBC is also working with the federal and provincial governments and organizations focused on flood-related issues – such as the Intact Centre on Climate Adaptation, the Partners for Action Network and the

Institute for Catastrophic Loss Reduction – to advocate for a whole-of society approach to reduce flood risk for Canadians.

A call to action

The insurance industry and governments can reduce flood risks by taking the following steps:

• **Educate and empower consumers to mitigate**. Both the industry and governments have a role to play in educating citizens about the risks associated with floods and the measures they can take to better protect themselves. The insurance industry will continue to invest in consumer education to improve awareness of flood risks.

• Improve land-use planning. Zoning restrictions that discourage building on flood plains will reduce future losses. Provincial disaster assistance programs should exclude claims arising from properties located in these areas as a disincentive for irresponsible real-estate development policies.

• Make targeted infrastructure investments. Infrastructure spending should be directed to include projects that increase resiliency to flooding, including repairing and upgrading sewer and stormwater systems and creating new flood defences.

• Improve building codes. Add resiliency as a building code objective to help ensure that private homes are better prepared to withstand weather extremes. Climate resiliency must also be incorporated into local building standards for retrofits of existing assets.

• Share data. Provincial and municipal governments can collaborate with insurance and modelling companies and other stakeholders to mutually provide access to flood risk maps including up-to-date geospatial data about flood defences, which will aid insurers in better measuring risk and appropriately pricing flood insurance.

• Preserve and restore wetlands. Wetland preservation and restoration can help protect communities from the destructive effects of floods. Wetland restoration can be cost effective. Such initiatives would also complement the objectives of any infrastructure program. IBC 2018 FACTS 50 HOME INSURANCE

List Provided by the Insurance Bureau of Canada, May 29, 2020

Below is a list of insurers, operating in Alberta, that do **offer optional residential overland flood insurance.** This list does change occasionally and each insurer has their own risk appetite, so we always encourage residents to reach out to several insurance representatives to discuss options for available coverage.

Allstate

AMA
Aviva

Belair Direct Insurance

Co-operators

Desjardins General Insurance Group

Economical

Intact
Mutual Fire of BC
Optimum
Peace Hills Insurance
RSA
SGI Canada
Saskatchewan Mutual Insurance
Sonnet Insurance
TD Insurance
The Guarantee
The Wawanesa Mutual Insurance Company

OVERLAND WATER ENDORSEMENT Intact Insurance.

THIS ENDORSEMENT ALTERS COVERAGE UNDER YOUR POLICY. PLEASE READ IT CAREFULLY.
For the purpose of this endorsement the following changes are made to your policy:
DEFINITIONS:
"Flood" means waves, tides, tidal waves, tsunamis or the rising or, the breaking out or the overflow of any body of salt water, whether natural or
man-made.
"Overland Water" means water that accumulates upon or submerges land which is usually dry resulting from:
1. The unusual and rapid accumulation or run off of surface waters from any source, including torrential rainfall.

2. The rising or, breaking out or the overflow of any body of fresh water.

Appendix R. Spruce budworm outbreak can put forests at fire risk

Updated on: 19 June 2017, 17:52 IST

http://www.catchnews.com/science-technology/spruce-budworm-outbreak-can-put-forests-at-fire-risk-66342.html

Turns out, it is not "a moth to a flame," but "a flame to a moth" as a new study has revealed that a spruce budworm outbreak could increase forest fire risk.

"If you walk in the woods in an area that's being severely defoliated, it sounds like rain. It's all of their frass, the bug poo, falling through the canopy of the trees," said researcher Patrick James from Universite de Montreal.

More than that, it's devastating the economy.

"There's a huge consequence for the forest industry," James said. "The budworm changes the composition of the forest, it denudes the trees and leaves behind huge areas of standing

dead and dry timber. Most of those trees don't get harvested, they don't go to the sawmill, profits aren't made."

Budworm outbreaks will cost the industry in New Brunswick alone an estimated $3 billion to $4 billion over the next 30 years, according to a 2012 study by University of New Brunswick researchers. Timber revenue will be lost, so will job, and the consequences will amplify as budworm, grown into dime-size moths, head south.

And in their wake comes something else: fire.

In his study, James shows that defoliation increases the risk of natural fires igniting eight to 10 years after a budworm outbreak - especially now, in the spring, before summer fire season starts. Interestingly, this risk actually decreases in the years immediately after an outbreak, since the "green up" of ground vegetation keeps the soil moist and less likely to ignite.

For his study, James looked at defoliation data stretching back to 1963 in two vast ecosystems in eastern and central Ontario. These results suggest that fire management agencies, which normally rely on weather indicators, could also include defoliation data to better predict areas of high fire risk. Knowing when and where the fire risk is increased due to the budworm can lead to pro-active techniques like "salvage logging," harvesting dead trees from areas already defoliated.

"If you can reduce the amount of budworm-killed forests in an area, you would then reduce the risk of fire ignition, which would then reduce the probability of having large forest fires," James said.

The issue of how budworm affects fire is expected to become even more important in the future as both fire and insect activity is expected to increase due to climate change. However, how the interact and what sort of damage may result, remains uncertain.

Spruce budworm outbreaks happen every 35 years or so; the last one peaked in the early 1980s and the latest one began in Quebec in 2006. Natural Resources Canada warned last fall that while the impact is greatest on Quebec's North Shore and in the Gaspe and

Saguenay-Lac-Saint-Jean, where 7 million hectares have been defoliated, budworm has been spotted in New Brunswick and may spread to the Acadian Forest.

The process works like this. First, the budworm larvae eat away at the tops of trees -balsam fir, black and white spruce. After several years, the dead treetops break off in the wind and their debris builds up on the branches below. Lightning strikes the dry material, which ignites, while meanwhile down on the forest floor an accumulation of needles lies ready to ignite, too.

Unseen in urban environments like Montreal, the budworm are nevertheless getting closer. They can be spotted in Quebec's Mauricie region, an hour north of Trois Rivieres, and around Ville Marie, south of Rouyn-Noranda in the Abitibi region.

"We're at an interesting point in the outbreak," said James. "Last year it increased, but at a slower rate. In Quebec's North Shore region, around Baie-Comeau, the budworm ate all they could, and with radar we detected great clouds of them on the move, migrating on the wind to areas that hadn't been so heavily affected, largely towards the south to the Lower St. Lawrence, the Gaspe and New Brunswick."

The moths are now "hovering on the New Brunswick border around Campbellton," he added, referring to a mass infestation that hit there last summer, when millions of larvae turned into moths and flew into town or were carried there by the wind, covering everything for miles around. "With that development, I would expect there'll be more activity in northern New Brunswick this year."

In the 1950s, authorities tried to contain budworm outbreaks by spraying infested areas with DDT. With that toxic method no longer an option, authorities now resort to a budworm-specific bacteria called Bt. The problem is the price: DDT cost only a few cents per hectare to spray, whereas Bt costs $40 per hectare. "If you have $1 million worth of wood, it will cost you $1 million to spray it," James said. "The cost is prohibitive."

There may be another solution, much cheaper: budworm tracking. Three summers ago, Canadian Forest Services appealed to the public to help track budworm in eastern Canada. Several hundred "citizen scientists" now lure, trap and count moths in six provinces, as well

as Maine, uploading the data on an app and sending the dead moths to Natural Resources' main research laboratory in Fredericton, N.B.

It's a kind of early-warning system, suggesting how and where moths "disperse" and in what number. "The value is two-fold," said James, who's involved in the program at an analytical level, using spatial modelling and genetics. "It helps us understand if budworm populations are increasingly locally, which is a problem, or are migrating from somewhere else, flying in and then dying, which is less of a problem."

In the end, knowing more about the spruce budworm - its life cycle, its behaviour, its migratory patterns - will help make its infestations easier to control. And once they're better understood, plans can be made to cope with the pesky beasts when they arrive.

The urgency is greater than ever, James said.

The study is published in the U.S. journal Ecological Applications.

-ANI
First published: 19 June 2017, 17:52 IST

Appendix S: Summary of Facts: Flood and Drought Mitigation along the Elbow River, Elbow River Sustainability Alliance, June 2020

Witten by: **Elbow River Sustainability Alliance**, Dave Klepacki, PhD,
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Flood and drought mitigation for the Elbow River continue to concern watershed residents in Calgary, Rocky View County communities, as well as water license holders concerned with irrigation water supply along the Bow River.
The **Springbank Offstream Reservoir project** is a single purpose (Flood Mitigation) dry dam project with escalating costs (nearing $700MM) and potential litigation lasting years because of local resident opposition. Environmental impact of this project is devastating for the immediate footprint, and downstream Elbow River ecosystem, as well as elk, grizzly bear, eagle currently using the area as an important north-south migration corridor along the foothills/prairie interface.
The **McLean Creek dam and permanent reservoir project** is a multipurpose flood mitigation, drought mitigation, wildfire suppression, and tourism opportunities generating revenue for local communities. Initial cost estimates are $300-400MM. A drinking water reservoir along the Elbow River, which supplies 450,000 Calgarians, will have to be built within the 20 years as Calgary is expected to exceed its water licenses by 2036. Wildlife impact in the area is negligible as the project footprint is along the McLean Creek Off Highway Vehicle Public Land Use zone, which wildlife avoid.

The Insurance Bureau of Canada is structuring rates to include losses from the warming climate. Catastrophic losses to flooding, drought and wildfire resulted in 4 times the claims ($1.8B/yr) in last decade relative to the previous decade ($405M/yr). **Alberta taxpayers cannot afford a single purpose project like SR1 but need a multipurpose project at McLean Creek to keep clean water in our taps and our homes, businesses and lives from burning up**.

Here are facts regarding these two alternative projects.

1) **Flood Mitigation.**
    a. **Springbank Offstream-**reservoir proposal is an untested flood mitigation scheme unique in the world. Costs for the project continue to escalate nearing $700MM and opposition by the Tsuut'ina Nation and Rocky View County, Springbank and Bragg Creek It captures 600m3/s of flood water diverted to an off-river reservoir to be released later over a period of weeks/months. Flows exceeding 600m3/s continue to Glenmore. Draining the reservoir following the flood event will fill the Elbow River with algae-laden, cyanobacteria-rich warm water which will destroy the cold water fishery downstream from SR-1 and significantly increase the cost of purifying the water (by millions if tertiary treatment for algae is required) at the Glenmore Water Treatment plant. Additionally, risk of mosquito-born diseases such as West Nile Virus, St Louis Encephalitis, Eastern Equine Encephalitis is a concern (e.g. Lethbridge Oct 2018). Mud and silt deposits left in the reservoir would carry pathogens like coliform bacteria and salmonella that will be a continuous threat to all Springbank residents under the-prevailing westerly winds.
    b. **McLean Creek** dam proposal uses common flood mitigation technology employed at Switzerland, Norway, Japan; jurisdictions similar to Alberta. Current estimates for a dam at the site by IBI/Golder are $300-400MM. It would catch 94-96% of Elbow River runoff, control river levels for all downstream residents, minimizes aquifer flooding and the need for expensive and ineffectual berms at Bragg Creek, Redwood meadows, and

other downstream communities (see aquifer below). It also would hold spring runoff waters to provide drinking water security to increasing downstream populations (500,000+) during low summer flows, help with wildfire suppression, and provide lake recreational opportunities for Kananaskis visitors.

2) **Alluvial Plain Aquifer**. Along the middle and lower reaches of the Elbow River Watershed the river has created a widespread (1-2km wide) apron of highly permeable cobble and gravel deposit called an alluvial aquifer, covered by a thin layer of soil. The aquifer is a result of sinuous movement of the channel across the valley over about 12,000 years. The aquifer is charged with groundwater in elevated water levels of flood events and fills basements with water in the Calgary communities of Elbow Park, Rideau, and Roxboro (Abboud et el 2018), and upstream residences at Redwood Meadows (ENSC501) and Bragg Creek. The only way to mitigate groundwater flooding is to keep the river level low or construct concrete cored berms anchored into bedrock. About $19MM of basement flooding was assessed to the Calgary communities in the flood of 2013.
3) **Drought Mitigation.** The Elbow River water flows are declining in volume since records have been kept (the last 100 years) and particularly since the 1960's. At current growth rates and without significant per capita water conservation, Calgary has a high probability of exceeding water supply about 2040 as was noted in the City of Calgary special meeting May 16, 2019. The Elbow River supplies drinking water to more than 500,000 residents along the watershed and in Calgary. A permanent reservoir at McLean Creek ensures future water supplies for drinking and wildfire suppression.
4) **Wildfire suppression** for East Kananaskis, Bragg Creek, Redwood Meadows and the Sheep River area would be supplied by a permanent reservoir at McLean Creek**.** Bragg Creek currently is second in Alberta at risk for wildfire, behind Jasper (both Fort McMurray and Slave Lake used to higher priority, but they have had wildfires). During the Champion Lakes fire May 2018, many of the helicopters had to go to Ghost Lake for water with a return time of 25 minutes. The fire initially grew rapidly. Fortunately, an afternoon wind direction change helped firefighters gain control of the fire.
    a. **Wildfire water contamination:** A large wildfire in the Elbow River headwaters would create a huge cost in water treatment at Glenmore reservoir as well as increased spring runoff and lower summer river flows. Of particular concern are polycyclic aromatic hydrocarbons (PAHs) that are mutagenic and carcinogenic and Dissolve Organic Carbon (DOC) that when combined with chlorine, produces carcinogenic compounds. Municipal water services in Canberra Australia (2003) had to build a new treatment facility, Fort Collins CO (2012) had to draw on a nearby lake, and Fort McMurray now spends more than twice previous costs to treat water and are still unsure of their ability to remove DOCs. A lake at MC-1 would settle ash and particulates helping reduce at least turbidity and some heavy metals precipitates. The City of Calgary Water Services is very concerned of this risk.
5) **Cost/Benefit Analyses**. No reliable cost benefit analyses have been done either for SR-1 or MC-1. SR-1 analyses by IBI (2015, 2017) underestimated land acquisition costs at SR-1; did not include costs of re-routing gas export transmission pipelines that cross under the Elbow River near Highway 22; the cost of rebuilding the Upper Springbank Road/ Hwy 22 interchange; changes to the Hwy 8/Hwy 22 interchange northern egress; accurate costs of berms of Redwood Meadows and Bragg Creek; lost residential tax revenues to the Municipality of Rocky View. Estimates of SR-1 including these costs by the Springbank Action Coalition are approximately $800MM and MC-1 $450MM. Additional costs are also costs to all the water coops licensed by

AENV drawing water from the Elbow River downstream of SR1, operational costs for ongoing maintenance of SR1, costs for the interchange improvements at Twnshp Rd 250 for the 70 school busses/day that will be re-routed when Springbank Road is under water during a flood event. Rerouting of busses onto Hwy 1 is a considerable safety issue for resident children.

a. **Any cost/benefit analysis should include tourism revenue generated from a permanent reservoir at McLean Creek**. Elbow Falls now receives some 750,000 visits per year. This recreational demand stimulates economies at Calgary, Bragg Creek, Cochrane, Tuner Valley/Black Diamond.

6) **Environmental Effects**. As the Canadian Environmental Assessment Agency has illustrated with continued requests for information, no satisfactory environmental reviews have been at SR-1 or MC-1.
   a. A flood event at SR-1 involves filling a reservoir of 2000+ acres with shallow muddy water in the June July time frame. The lake with be nutrient rich and the warm summer sun will cause algal blooms of cyanobacteria as other large shallow prairie lakes like Eagle Lake. This effluent will contaminate Glenmore reservoir upon release. Residual mud up to 4m thick may be contaminated with toxins and pathogens from Bragg Creek and Redwood, and harbour West Nile virus, Eastern Equine Encephalitis, and California Serogroup viruses during reservoir draining, endangering schools and residents (Springbank, Aspen Creek, Discovery, Tsuu T'ina) downwind. The loss of the carbon-sink of up to 8000 acres of native prairie grassland is an environmental issue.
   b. As noted in paragraph 2, the SR-1 footprint eliminates an important north-south migration corridor along the boundary of parkland/prairie habitat, and is home to threatened grizzly bears and approximately 200 head of the Sibbald Elk herd as well as many rare parkland species. Environmental assessment at MC-1 has found only 1 moose present. The lack of wildlife at MC-1 is likely due to steady year-round Off Highway Vehicle use at the McLean Creek OHV lands.
   c. A permanent reservoir at McLean Creek with a bottom-release outlet (hypolimnetic) will enhance fisheries and cold water riparian ecosystem downstream by releasing cold, nutrient laden water from the bottom of the reservoir increasing invertebrate food sources and maintaining cold temperatures in the face of a warming climate. A fish ladder to move migrating Bull and Cutthroat trout below MC-1 to spawning beds above MC-1 would have to be built at a cost of $2-5MM.
   d. While a permanent dam at MC1 will impede sediment movement along the Elbow River, comparison to depositional rates at Glenmore Reservoir and Barrier lake yield a 300 yr life for a 78Mm3 permanent reservoir. Decadal flushing of some sediment, as practiced on the Colorado River, can elongate reservoir lifetime.

7) **Geotechnical Concerns**
   a. At SR-1 there is an abundance of freshwater springs along the Springbank Creek drainage within the glacial till and fluvial lacustrine sediments that underlie the proposed reservoir area. These threaten reservoir bottom and earthen dam stability. This possibility was recognized in the CEAA analysis of the project. A number of these springs are the water source for local water coops.
   b. MC-1 would be built on Wapiabi shale formation bedrock outcrops. Because MC-1 will have a permanent reservoir and a bottom release outlet, steel footings in this bedrock will provide excellent stability for even a 70-100MM m^3 reservoir.

8) Tsuu T'ina Nation Water Supply Needs

As the Tsuu T’ina nation develops it’s lands on both the east and west side of the reserve they will need increasing water use from the Elbow river they consider sacred. A permanent reservoir at McLean Creek could help meet this need in a least-environmentally disruptive project.