

Southern Alberta Environmental Group

Box 383, Lethbridge AB T1J 3Y7

20 July, 2004

Secretary, Canadian Section
International Joint Commission
22 Floor, 234 Laurier Ave. W.
Ottawa ON K1P 6K6

Delivered by Email: Commission@ottawa.ijc.org

Dear Sir/Madam:

Re: Public Consultation on St. Mary and Milk Rivers Apportionment

Through our local media we have learned that a request has been made by Governor Judy Martz of Montana to review the 1921 International Joint Commission (IJC) order which implements the provisions of Article VI of the 1909 Boundary Waters Treaty and defines the apportionment between the United States and Canada for the Milk and St. Mary Rivers. Review of the IJC website informs us that the Commissioners are holding a public consultation process to obtain facts related to water supplies in the basin, current and projected water uses, and any matters regarding the current implementation of the 1921 Order. The Southern Alberta Environmental Group (SAEG) is participating in the process with the intention of contributing information which will assist in the decision about how best to proceed.

SAEG is a registered society based in Lethbridge, Alberta whose members work on environmental matters in our community. Our goals are to inform, to advocate for environmental protection and to work cooperatively with others who share common goals. For two decades members have dealt with water management challenges in the Oldman and Milk river basins in Alberta. SAEG's most recent involvement includes representing the ecosystem protection interest on the Oldman River Basin Public Advisory Committee as part of the South Saskatchewan River Basin planning process, participating in projects of the Oldman River Basin Water Quality Initiative, and presenting a submission regarding a study of water storage options in the Milk River basin. As well, SAEG recently sought standing before the Alberta Environmental Appeals Board for appeal of an amendment of a 1991 water licence to the St. Mary River Irrigation District.

The aquatic environments of both the lower St. Mary River in Alberta and the lower Milk River in Montana are under stress and considered to be degrading due to current water management. The Oldman River Basin Public Advisory Committee has recommended restoring flows to benefit the aquatic environment along the lower St. Mary River. Attached is a list of key sources of information regarding the ecological condition of the reaches of these rivers in Alberta, as well as two relevant documents recently prepared by SAEG. We ask that Commissioners review these documents in their deliberations.

Healthy rivers reflect healthy societies. IJC is responsible for making decisions regarding the use and quality of boundary waters. If the test of common good is to be met, decisions by IJC need to consider instream flows to protect and restore the health of the aquatic environments in these shared rivers.

Yours truly

Klaus Jericho
President
Phone: (403) 327-4062

Sources of Information Regarding the Condition of the Aquatic Environment of the St. Mary and Milk Rivers in Alberta

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Alberta Environment. 2003a. South Saskatchewan River Basin Water Management Plan. Phase Two: Background studies summary report. <http://www3.gov.ab.ca/env/water/regions/ssrb/index.asp>

Alberta Environment. 2003b. South Saskatchewan River basin water allocation. Background study for the South Saskatchewan River Basin Plan. <http://www3.gov.ab.ca/env/water/regions/ssrb/studies.asp>

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Rood, Stewart B. 2004. The parched Oldman: Vanishing rivers in southern Alberta. Presentation to Confronting Water Scarcity Conference, July 16, 2004, Lethbridge.

Rood, Stewart B. and Wilco Tymensen. 2001. Recreational flows for paddling along rivers in southern Alberta. Background study for the South Saskatchewan River Basin Plan. <http://www3.gov.ab.ca/env/water/regions/ssrb/studies.asp>

*Southern Alberta Environmental Group. 2003. Questions and concerns regarding the Milk River Basin – preliminary feasibility study: Submission to a public meeting in Lethbridge on March 17, 2003.

*Southern Alberta Environmental Group. 2004. Background to water management in the southern tributaries of the Oldman River.

*Attached as an electronic file.

Southern Alberta Environmental Group

Box 383, Lethbridge AB T1J 3Y7

Questions and Concerns Regarding the Milk River Basin – Preliminary Feasibility Study

Submission to a Public Meeting in Lethbridge; March 17, 2003

Contact: Cheryl Bradley, 625 – 18 St. S., Lethbridge AB T1J 3E9 Phone: (403)328-1245 Fax: (403)380-4969
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1.0 INTRODUCTION

Southern Alberta Environmental Group, formed in 1984, is a registered society whose members work to inform ourselves and other about environmental issues in our community and to advocate for environmental protection. We have a long-standing interest in water management in southern Alberta and currently are participating in the Oldman River Basin Water Quality Initiative and in the process to develop a South Saskatchewan Basin Water Management Plan. Our interest in the Milk River Basin includes ongoing participation in the Milk River Natural Area Management Committee. Through participation in the South Country Protected Areas Project and Special Places Program we raised awareness about, and worked to protect, significant environmental features found in the Twin River Heritage Rangeland, Ross Grassland Natural Area and environs, Writing-on-Stone Provincial Park and environs, Pakowki Lake, Manyberries Creek Badlands and upper St. Mary River valley. Two reports by the South Country Protected Areas Project: *Phase One Summary Report* (1993) and *Twin River Valley, Writing-on-Stone, Pakowki Lake Summary of Findings* (1997) are attached.

We first heard about the recent study of a proposed dam and diversions from the Milk River in a news release issued by the Alberta Wilderness Association on January 21, 2003. Since that time we have sought to inform ourselves about the study. Our initial requests for information from government in late January and early February were met with some confusion. It was not until February 12 that we were provided the *Milk River Basin-Preliminary Feasibility Study Request for Proposal* which had been used as the basis for a \$250,000 contract to an engineering firm. On February 28 we received an invitation to attend this meeting, the first opportunity for public input to this proposal. On March 10 we received notice that Alberta Environment had posted information regarding the study on the government website. To date, these contacts have been our primary sources of information about the study. We also have begun to compile a list of reports which we believe are relevant background information for the study. These include several government reports from the 1980s regarding a proposed dam as well as numerous reports on features of environmental significance in the Milk River basin. We are willing to share this information with the consultant.

Our key concerns, questions and suggestions are presented in three topic areas:

- Water Management Planning
- Environmental Effects
- Other Social and Economic Considerations

2.0 WATER MANAGEMENT PLANNING

The study is inconsistent with the direction for water management planning set out in the *Water Act* (1996) and in the *Framework for Water Management Planning* (2001). The revised *Water Act* (1996) (section 7) requires the Minister establish a framework for water management planning which must include a strategy for protection of the aquatic environment and may include other matters such as water management principles, boundaries within which water management planning is to be carried out, criteria for the order in which water management plans are developed, an outline of processes for defining water management plans, integration of water management planning with land and other resources, and water conservation objectives. The *Framework for Water Management Planning* (2001) defines a vision and principles for water management as well as roles, responsibilities and outcomes of the planning process. In addition, the *Framework* provides a strategy for the protection of the aquatic environment.

The Milk River Basin preliminary feasibility study, both in process to date and as defined in the *Request for Proposal*, appears to be inconsistent with the *Framework*. According to the *Framework* (4.1 and 4.2) a water management planning process should include full stakeholder participation at the outset to identify issues which will be addressed and to define a Terms of Reference for the planning process. The Terms of Reference for a planning process would include:

- an overview of current conditions and initial description of issues,
- geographic description of the planning area,
- intended objectives,
- roles, responsibilities and accountability of those who will be involved
- potential linkages with Regional Strategies
- proposed public consultation process
- a work plan
- information requirements, and
- a proposed schedule.

We have not seen any of the above matters defined for the Milk River basin. According to the *Request for Proposal* (2.0 Hydrology and Water Supply) the consultant is to assess “how the project fits into the water management of the entire Milk River Basin”. Obviously Alberta Environment considers the ‘preliminary feasibility study’ to be a component of water management planning. Has the Minister or Director responsible for water management for the Milk River basin deliberately decided to proceed with this study outside of the direction for water management planning provided by the *Act* and *Framework*? If this is the case, it is setting a dangerous precedent which contravenes clear directions set out in recent legislation and policy and reflected in public opinion.

Some more specific points regarding inconsistency with current legislation and policy follow.

- We are not aware of studies to determine the quantity and quality of water that should be in rivers in the Milk River basin to protect the aquatic environment. Presumably, based on our experience with the South Saskatchewan River Basin planning process, instream flow needs assessments should be undertaken which consider fish and other aquatic life, riparian vegetation, recreation and channel maintenance. In SSRB planning, a strategy for protection of the aquatic environment, including water conservation objectives, will be defined **prior to** consideration of storage options.
- The stated objectives of the *Milk River Basin – Preliminary Feasibility Study: Request for Proposal (1.0 Introduction)* are to examine 1) the feasibility of building a dam and water supply project on the Milk River and 2) the feasibility of off-stream storage alternatives in the Milk River Basin. These objectives are very narrow and assume that on-stream or off-stream storage are the only alternatives to addressing water management issues in the basin. The issues themselves are not defined. It is as if Alberta Environment has decided the solution is dams and diversions without having defined the problems. Confusion over issues is exacerbated when one is told in the letter of invitation for this public meeting that “the study was deemed necessary because the town of Coutts and Milk River have experienced water intake problems due to the low flows of the river” and yet the *Request for Proposal* in section 6.4 *Water Uses* directs the consultant to assess the benefits of proposed structures in terms of irrigation development, hydroelectric power generation, flood control and recreational benefits. As an aside, the section states that any other potential benefits such as municipal and industrial uses should be identified.
- The *Feasibility Study* was developed and a contract issued to an engineering firm without public knowledge and without a public consultation process being defined. According to *The Framework (Section 4.3)* public consultation process needs to be clearly identified in the Terms of Reference of a water management plan and must include the objective of public consultation, a description of previous consultation outcomes, a list of key individuals and groups, a description of how public involvement fits into the planning process and a communication strategy. None of this has been provided with respect to the Milk River basin study. Some specific concerns follow:
 - According to Alberta Environment’s *Fact Sheet* found on the department’s webpage this study is being done at the request of the Milk River Water Management Committee. Who is the MRWMC, what is their interest/objectives and what is their role with respect to the pre-feasibility study?
 - What other stakeholders are being involved in a meaningful way in the defining a plan for water management in the Milk River Basin? We are particularly interested in representation by environmental/conservation interests.
 - Since this is an international river subject to the 1909 Boundary Waters Treaty, key interests also would include departments and agencies of the federal government – Canadian Environmental Assessment Agency, Environment Canada, Fisheries and Oceans Canada, Intergovernmental Affairs - the State of Montana, the government of the United States and the International Joint

Commission. Are these parties aware of this study which could affect their interests?

- Linkages to land use planning in the basin and in particular to the Southern Alberta Regional Strategy are not identified. Why not? There is a growing body of scientific evidence that the health of our rivers is linked to the health of headwater systems which in turn is linked to land use practices (Gomi et al. 2002).

Through *Water for Life* the province is developing a comprehensive strategy that will identify short-, medium- and long-term plans to effectively manage the quantity and quality of the province's water systems and supply. Key messages from an extensive public consultation process begun in November 2001 are (from March 4th powerpoint presentation to the Oldman River Basin Water Quality Initiative):

- Emphasis on education and public involvement in watershed planning
- Emphasis on watershed approach
- Define quality and quantity required by the natural system and allocate to this need
- Ensure safe drinking water
- Improve water conservation practices
- Prevent pollution and contamination of water
- Long term supply and demand forecast and improved risk management approach
- Assure FITFIE security and improve allocation criteria to account for future needs
- Government ultimately accountable and increased staff and skills are essential

The *Milk River Basin-Preliminary Feasibility Study Request for Proposal* does not address any of the above matters, except perhaps water supply. By undertaking a study focused on storage options the Department appears to have fallen back into the old approach of only managing supply. Hopefully we have learned from mistakes in water management in the South Saskatchewan River Basin, which have resulted in excessive allocation, a disconnect between land use and water management planning, and harm to the aquatic environment including water quality problems.

3.0 ENVIRONMENTAL EFFECTS

One component of the project is for a 38.8 to 44.8 metre high dam at Site 2 (SW 27-2-18-W4) which would flood 10 km of the Milk River valley below the forks and about 20 km up both the South and North forks of the Milk River. Another component is off-stream storage alternatives. The *Request for Proposal (5.0 Environmental Issues)* requires a preliminary understanding of the potential environmental issues associated with the construction and operation of a dam and reservoir and identify required mitigation. It is unclear whether environmental issues associated with off-stream storage structures also will be identified. We provide the following to ensure potential environmental effects which are of concern to SAEG are addressed. These effects fall into four categories:

- Effects on the Twin River Heritage Rangeland
- Threats to the Aquatic Environment including At-Risk Fish Species
- Downstream Effects on Riparian Habitats and Protected Areas
- Loss of Native Grasslands and Threats to Ecological Sustainability

3.1 Effects on Twin River Heritage Rangeland

One component of the project would involve construction of a forty-metre high dam in the heart of the Twin River Heritage Rangeland and the reservoir created would flood a large portion of the valleys of the Milk River and North Milk River within the protected area. The Twin River Heritage Rangeland (47,000 acres or 19,000 ha) was established by Order in Council in 2001. Protective designation of the Twin River Heritage Rangeland was recommended by a Local Committee in a report dated August 1998 to the Minister of Environmental Protection, the Honourable Ty Lund. The Local Committee recognized preservation of environmental quality and biological diversity as the primary concern which could be achieved while allowing continuation of domestic livestock grazing. The Local Committee recommended that no new roads be constructed and that industrial developments be prohibited. Their recommendations were accepted by the Minister in November 1999 and implemented in May 2001 through designation of the area as an Order-in-Council Natural Area by Community Development, the agency currently responsible for the *Wilderness Areas, Ecological Reserves and Natural Areas Act*.

According to the Special Places webpage “Natural Areas protect special and sensitive natural landscapes of local and regional significance while providing opportunities for education, natural appreciation and low-intensity recreation. Facilities are limited to staging areas, trails and signs”. “Local committee recommendations on permitted uses and management objectives guide the protected areas class that is selected for each site designated.” The Local Committee did not recommend dam construction as a permitted use in the Twin River Heritage Rangeland, even though then Minister of Public Works, Hon. Ty Lund, reminded them of a proposed Milk River reservoir through a letter discussed at a meeting on June 17, 1998.

This Heritage Rangeland designation reaffirmed two previous protective notations which recognized the sensitivity of the area and demonstrated government intent to protect its significant environmental features. According to LSAS, in 1983, Public Lands placed a protective notation on 3,661 acres of public lands indicating there was an erosion hazard and there should be no agricultural dispositions. In 1993, Fish and Wildlife placed a protective notation on 27,112 acres for a Special Fish and Wildlife Management Area.

According to LSAS, a conservation notation for a potential dam and reservoir area was placed on 129 acres in SW 27-2-18-W4 in 1985 by the Department of Environment. It appears the notation did not include the lands which would be flooded as the reservoir area would far exceed 129 acres. The conservation notation was not removed at the time the Order-in-Council (O/C) Natural Area was established. Was this an error? Reservoir inundation impacts would be prohibited under the *Wilderness Areas, Ecological Reserves and Natural Areas Act*. Although the O/C states “surface dispositions existing at the date of site establishment will be honoured”, surely a notation on LSAS is not considered a ‘disposition’. Disposition is defined under the *Public Lands Act* as “a conveyance, assurance, sale, lease, licence, permit, contract or agreement made, entered into or issued”.

Twin River Heritage Rangeland is the only representative of the Grassland Natural Region – Mixedgrass Subregion listed on the Government of Alberta Special Places webpage. It is

one of six large blocks of grasslands left on the glaciated plains of North America and considered as internationally significant (Alberta Wilderness Association, 2003). Level 1 Natural History Themes represented in the Twin River Heritage Rangeland include 9,100 ha of protected slope and 1,300 ha of floor/stream – about one half of the area. These are habitats which would be most directly affected by a reservoir and dam in SW 27-2-18-W4 – the heart of the Heritage Rangeland. Valley slopes and floor are key habitat for several at-risk species known to occur in the Heritage Rangeland. These habitats include:

- nesting sites for ferruginous hawks (COSEWIC species of special concern), golden eagles and prairie falcons,
- dens for yellow-bellied marmot,
- wetlands for leopard frog (COSEWIC species of special concern),
- aquatic habitat for St. Mary sculpin, stonecat, brassy minnow and sauger, and
- sites of rare plant populations including prickly milk vetch (*Astragalus kentrophyta*), tufted hymenopappus (*Hymenopappus filifolius*) and creeping whitlow grass (*Draba reptans*).

Further surveys are required to determine if other at-risk species occur in the area.

In conclusion, consideration of a dam at Site 2 is inconsistent with protection of the internationally significant Twin River Heritage Rangeland which was recommended by local committee and implemented through the provincial *Wilderness Areas, Ecological Reserves and Natural Areas Act (2000)*. Several species considered at risk nationally or provincially occur within the Twin River Heritage Rangeland in habitats which would be threatened by the project. Further surveys would be required to determine if there are other at-risk species or plant communities which would be threatened by the project. Construction of a dam and reservoir could not proceed without lands being removed from the natural area and opportunity for public comment.

It is unclear at what locations other dams and storage reservoirs may be considered. Regardless there would be environmental impacts related to dam construction, direct flooding of valley habitats and downstream effects. Any dam greater than 15 metres, any diversion with capacity greater than 15 cubic metres per second and any water reservoir with capacity greater than 30 million cubic metres would be considered mandatory activities under the provincial *Environmental Protection and Enhancement Act* requiring an environmental impact assessment report. These would be reviewable projects and require the approval of the Alberta Natural Resources and Conservation Board.

3.2 Threats to the Aquatic Environment and At-Risk Fish Species

Recent fish surveys in the Milk river drainage encountered 14 species. Of this five are species of concern. According to *The General Status of Alberta Wild Species 2000*, two are considered 'may-be-at-risk' – St. Mary (Shorthead) sculpin and western silvery minnow – one is considered sensitive – 'sauger' – and two are 'status undetermined' – stonecat and brassy minnow. Results of these surveys are contained in two reports prepared for Alberta Sustainable Resource Development – *Fish Species at Risk in the Milk and St. Mary Drainages* by RL&L Environmental Services Ltd. (2002) and *Fish Species of Concern Survey on the Milk River* (2002). In the 1960s work on fishes of the Milk River was

conducted by Tom Willock and is contained in three documents (Willock, 1968, 1969a, and 1969b).

The western silvery minnow (*Hybognathus argyritis*) is listed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as “Threatened” and a status report has recently been completed for consideration by the provincial Endangered Species Scientific Subcommittee (Pollard, 2003). According to the status report, habitat alterations, particularly associated with irrigation, are believed to be responsible for declines in the abundance and distribution of western silvery minnow elsewhere in North America. The western silvery minnow is a “species of management concern” in the United States.

Sauger is considered a species of special concern in Montana. Populations in the Milk River in eastern Montana have declined. Factors which may be affecting their survival are obstruction to migration and reductions in high spring flows and changes in sediment budget and spawning habitat due to dams and diversions.

Biologists responsible for fish management in the Milk River in both Alberta and Montana need to be consulted in consideration of any project which may obstruct movement of fish or affect timing and volume of river flows. In addition biologists with Fisheries and Oceans Canada need to be consulted as they have a responsibility under the federal *Fisheries Act* to protect fish and fish habitat.

3.3 Downstream Effects on Riparian Habitats and Protected Areas

There are concerns regarding effects on riparian habitats, including cottonwood forests, shrublands and wetlands, as the result of altered flows and hence altered channel processes. Riparian habitats support high biodiversity and are important for recreation. Two provincial protected areas could be affected by downstream effects of an on-stream dam and diversions. Writing-on-Stone Provincial Park is about 60 km downstream and Milk River Natural Area is about 180 km downstream. Both are sites of international significance. Cottonwood forests through the canyon of the Milk River in Alberta are one of six reaches identified as particularly significant in southern Alberta (Bradley et al., 1991).

Links between cottonwood establishment, flood flows and channel migration are well documented in several studies beginning in the late 1970s (Bradley et al. 1991). One of the first studies to document the effects of dams and diversions on cottonwood forests in a sand bed river was on the Milk River in Alberta and Montana (Bradley, 1982). This study found that seedlings of Plains Cottonwood establish predominantly on the fresh sediment of actively forming point bars and particularly when high flows occur during the period of seed dispersal (June-early July). The Fresno Dam, on the lower Milk River, completed in 1939, has led to sediment starvation, reduced peak flows and a significant decrease in the rate of meander migration downstream. Subsequent point bar stagnation has severely limited successful cottonwood establishment below the dam.

The *Conservation and Management Strategy for Riparian Forests in Southern Alberta* (1992), presented by the Minister of Environmental Protection, states “Ensure that environmental assessments for projects with significant effects on river flows address

effects on riparian forests”. Effects on floodplain wetlands and shrub communities also need to be assessed as these are habitats for numerous wildlife species, some which are considered at risk. Analysis done by the Cows and Fish Program has concluded that eighty percent of wildlife species in the semi-arid regions of Alberta rely on riparian areas for all or part of their life cycle. Sixty-five percent of COSEWIC listed species rely on these habitats.

In conclusion, assessment of a proposed dam and diversions on the Milk River needs to include assessment of downstream effects on Writing-on-Stone Provincial Park and the Milk River Natural Area and on riparian habitats both inside and outside of these protected areas which are habitat for a high diversity of wildlife species, some of which are considered at risk. A decision to proceed with consideration of a dam and major diversions from the Milk River would trigger requirements under several pieces of environmental legislation, federally and provincially. Impacts on the Twin River Heritage Rangeland would be prohibited under the *Alberta Wilderness Areas, Ecological Reserves and Natural Areas Act* and altering the area of the Heritage Rangeland would require public notice and time for comment. The potential for adverse effects on fish and wildlife as described above will require consideration of authorization under the *Alberta Wildlife Act* as well as the federal *Fisheries Act, Migratory Birds Convention Act* and *Species at Risk Act*. Requirement for provincial approvals would trigger environmental assessment under the *Environmental Protection and Enhancement Act* and review under the *Natural Resources and Conservation Board Act*. Requirement for federal authorization would trigger the *Canadian Environmental Assessment Act*. Potential adverse impacts, and level of public concern, will be significant enough to lead to the need for a comprehensive study and review by an independent and public panel.

3.4 Loss of Native Grassland and Threats to Ecological Sustainability

According to a study by Marv Anderson & Associates Ltd. in 1987, a reservoir at Site 2 would permit an additional 20,300 acres of irrigation. A water quality overview by A.A. Aquatic Research Ltd. in 1986 found Milk River water to be alkaline, usually hard and turbid. For the purposes of environmental assessment the following information is required:

- Location of lands which are proposed to be irrigated,
- Current use of these land (i.e. native grassland used for grazing, permanent pasture or cropland)
- Current soil condition/class and irrigability
- Potential adverse effects on native prairie (including biodiversity) and on soil quality and implications for sustainable use of prairie ecosystems (i.e. well managed livestock grazing on native grasslands)

Indicators of ecological sustainability and responses are discussed in Occasional Paper Number 2 of the Prairie Conservation Forum entitled *Prairie Ecosystem Management: An Alberta Perspective* (Bradley and Wallis, 1996). They include:

- Loss of prairie biodiversity
- Loss of soil and soil organic matter and increased salinity
- Increased chemical inputs on cultivated land
- Increased pollutants and salinity in prairie water bodies and groundwater.

This project may contribute to all of the above and has implications for economic sustainability.

4.0 OTHER SOCIAL AND ECONOMIC CONSIDERATIONS

The *Request for Proposal* requires an assessment of all potential benefits and costs of the project. Costs identified are dam and reservoir costs, land acquisition, road and utilities relocation and environmental assessment and mitigation costs. Benefits identified are irrigation development, hydroelectric power generation, flood control and recreational benefits.

We suggest this is an extremely simplistic view of costs and benefits. For example, irrigation development is not necessarily a benefit. There will be substantial local costs for irrigation equipment and pumping. Irrigated agriculture is more labour and machinery intensive than dry land farming or ranching which surely must be considered a cost. Salinization of soils would be a cost. Would there be an expectation of public investment in building the project and in maintaining a water delivery system? If so, we caution against the tendency of many studies in the past to exaggerate the economic benefits in order to justify the public investment (Powers, 2001). Boosting agricultural production is not the only, or necessarily, the best way to promote a more prosperous rural economy. What other public investments do we forgo that may be of greater benefit? Are there more cost-effective ways to generate electrical power from public investment? Is not the loss of a free-flowing river a cost? It is highly conceivable that current and future recreational use of the river in its free-flowing state is of more benefit than recreation associated with reservoirs. Controlling floods may incur more costs in environmental impacts on the aquatic environment and riparian areas than are recognized in benefits. It will be extremely difficult to estimate environmental mitigation costs prior to a comprehensive assessment of what the environmental effects will be, which is not part of this study, and whether mitigation is indeed feasible?

Additionally, since the purpose and description of the project are not well defined, it is difficult to define the scope of what needs to be considered as part of an assessment of costs and benefits. If the purpose of the project is primarily to address problems with municipal water supply in Milk River and Coutts, there may be options other than dams and storage reservoirs which would be more cost effective. Additional options may include implementing conservation measures, constructing larger water storage tanks, hauling of water in times of need or water pipelines. We note that in December 2002, President George Bush authorized expenditures for a regional water system in north central Montana to provide potable water to several communities through water transmission pipeline (Montana Department of Natural Resources and Conservation, December 2002).

5.0 CONCLUSIONS

Southern Alberta Environmental Group has a long-standing interest in water management in southern Alberta and in water and land use planning in the Milk River Basin. Our concerns, comments and suggestions regarding the Milk River Basin Preliminary Feasibility Study relate to implications for water management planning in southern Alberta, to environmental effects and to social and economic considerations.

The pre-feasibility study is inconsistent with the direction for water management planning set out in the *Water Act* (1996), in the *Framework for Water Management Planning* (2001) and in the results of the public consultation process for a provincial water strategy – *Water for Life*. There is public expectation that on-stream and off-stream storage options will be considered only in the context of a basin management planning process which includes meaningful public consultation and which first addresses the instream flow needs to protect the aquatic environment.

The proposed project - on-stream and off-stream storage alternatives in the Milk River Basin - potentially threatens internationally significant protected areas including Twin River Heritage Rangeland, Writing-on-Stone Provincial Park and the Milk River Natural Area. There is the potential for significant adverse impacts on native plants and animals, including fish, which are recognized to be at-risk by both provincial and national programs working on protection of biodiversity. Irrigation could result in loss of native grasslands and threats to ecological sustainability. An on-stream dam and diversions from the Milk River would trigger requirements under several pieces of environmental legislation provincially and federally including the *Alberta Wilderness Areas, Ecological Reserves and Natural Areas Act, Alberta Wildlife Act, Alberta Environmental Protection and Enhancement Act, Alberta Natural Resources and Conservation Board Act, federal Fisheries Act, Migratory Birds Convention Act, Species at Risk Act* and *Canadian Environmental Assessment Act*.

There appear to be significant shortcomings in the approach to analysis of costs and benefits which will compromise its credibility and usefulness in water management planning and land use planning for the Milk River Basin.

Thank you for the opportunity to make our concerns known. We would appreciate a response to the questions and concerns we have raised.

6.0 REFERENCES

(Note: Documents in bold type are attached to this submission.)

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BACKGROUND TO WATER MANAGEMENT IN THE SOUTHERN TRIBUTARIES OF THE OLDMAN RIVER

A. Key Facts and Concerns

Fact: The southern tributaries of the Oldman River are in ecological decline due to high withdrawal of water

In about five years out of ten, allocation volume exceeds total natural flow in the southern tributaries.

Beginning in the 1890s water allocations from the St. Mary, Belly and Waterton Rivers, southern tributaries of the Oldman River, were made without consideration for the aquatic environment. Dams and diversions were built on all three rivers to store and divert water. A century later total allocation from the Waterton and Belly Rivers is more than three quarters (75-80 percent) of median total annual flow and allocation from the St. Mary River is greater (118 percent) than median total annual flow (see Attachment 1). Another way of stating this situation is that in about five years out of ten allocation volume exceeds total natural flow in the southern tributaries. Of note is that the Oldman River mainstem has a total allocation of 70 percent.

Withdrawals reduce natural flow significantly, especially during average flow and low flow years.

The *South Saskatchewan Basin Water Allocation Regulation* established in 1991 set minimum instream flow for the southern tributaries which are only 10% of mean flow. These flows were not based on science but rather on what could reasonably be left in the river given the high level of allocation. Naturally such low flows would have occurred infrequently. Comparisons of flows that would naturally occur and what actually occurs in the southern tributaries show that the Waterton Dam and the St. Mary River Dam do not substantially reduce peak (flood) flows, however they do cause significant flow reductions during average flow years, and extreme reductions during low flow years (Clipperton and others, 2003) (Table 1). In average and low flow years, minimum flows have become the norm rather than the exception.

Table 1: Natural peak flows and mean flow and regulated minimum flow in the southern tributaries

Sources: Alberta Environment data on reconstructed natural flows, SSRB Water Allocation Regulation (1991)

	Highest Peak Weekly Flow (natural) ¹	Average Peak Weekly Flow ² (natural)	Mean Flow (natural & regulated)	Minimum Instream Flow (SSRB Reg, 1991) (regulated)
St. Mary River (near Lethbridge)	416 m ³ /s ³	138 m ³ /s	28 m ³ /s (14 m ³ /s)	2.75 m ³ /s (97 cfs)
Belly River (at mouth)	631 m ³ /s	192 m ³ /s	35 m ³ /s	0.93 m ³ /s (33 cfs)
Belly River (near Standoff)	231 m ³ /s	50 m ³ /s	9 m ³ /s	0.93 m ³ /s (33 cfs)
Waterton River (near Standoff)	379 m ³ /s	138 m ³ /s	23 m ³ /s	2.27 m ³ /s (80 cfs)

¹ Natural means flows without dams and diversions. Regulated means flows with control structures.

² Average peak weekly flow is the average of all annual peak weekly flows over the period of record.

³The term m³/s (cubic meter per second) is used to express flow. A m³/s is 35 cubic feet per second (cfs).

Instream flow needs for fish and riparian vegetation are not being met.

As part of the South Saskatchewan River Basin planning process, instream flow needs for the southern tributaries recently were assessed by a group of scientists with expertise regarding water quality, fish habitat, riparian vegetation and channel maintenance. Their conclusions are that flows downstream from dams and diversions are inadequate to sustain native fish and riparian vegetation (Clipperton and others, 2003).

River reaches below dams and diversions are heavily impacted and degrading.

In addition an expert panel of government and non-government biologists assessed the St. Mary, Belly and Waterton Rivers below the major dams and diversions according to a number of indicators of ecological health. Their conclusion is that these reaches are heavily impacted to degraded (Golder Associates Ltd. 2003). The biologists identified low flows as the main reason for ranking the indicators of health of these rivers near or well below ecologically acceptable values.

Further flow reductions are predicted due to climate change.

Recent analysis of historic streamflow patterns has revealed patterns of flow decline over the past century throughout the Oldman River basin (Rood, 2003). Typical decline rates are 0.2% per year. If this pattern continues, it would result in a further stream flow reduction by about one-quarter over a century placing further stress on the aquatic environment of the southern tributaries to the Oldman River.

Fact: Over 95 percent of water diverted from the southern tributaries is for irrigation.

Over 95 percent of water allocated from the southern tributaries is for irrigation (see Attachment 1). The large majority of allocation is held by irrigation districts. There are nine irrigation districts (including the Blood irrigation project) which receive water from the St. Mary, Belly and Waterton Rivers. Table 2 shows the maximum irrigated acres for each district defined through the *South Saskatchewan Basin Water Allocation Regulation* (1991) and the corresponding volume of water estimated by Alberta Environment to irrigate those acres. In comparison the City of Lethbridge has licences for 25,000 acre feet and currently diverts about 16,000 acre feet per year from the Oldman River with 70 percent usually returned to the river a few kilometers downstream.

Table 2: Irrigation water allocations from the southern tributaries

Source: Alberta Environment (2003)

Irrigation District	SSRB Reg (1991) Limit (acre-ft) ¹	SSRB Reg (1991) Limit (acres)	Rate of Application (ft/ac)	Actual or Applied for (acres)	Unused Expansion (acres)	Unused Allocation (acre-ft)
St. Mary River ID	722,000	372,000	1.9	352,000	20,000	38,000
Taber ID	158,000	82,200	1.9	79,000	3,200	6,080
Raymond ID	81,000	46,500	1.7	39,000	7,500	12,750
United ID	68,000	34,000	2.0	19,750	14,250	28,500
Blood	40,270	25,000	1.6	25,000	0	0
Magrath ID	34,000	18,300	1.8	15,500	2,800	5,040
Leavitt ID	12,000	4,770	2.5	4,763	7	18
Aetna ID	9,000	3,530	2.5	2,361	1,169	2,922
Mountain View ID	8,000	3,700	2.2	3,510	190	418

Note: In March, 2002 the Lethbridge Northern Irrigation District set a maximum rate of application of 1.5 ft/acre.

¹ An acre-foot is the amount of water needed to cover an acre of land to 1 foot depth. It requires about 0.014 m³/s flowing for a day to produce 1 acre-foot of water.

Fact: Alberta Environment is not accepting applications for new water licences from the southern tributaries.

Recognizing the need to alleviate stress on the southern tributaries, the South Saskatchewan River Basin Water Management Plan – Phase One (2002) recommended that applications for new water allocations from the St. Mary, Belly and Waterton Rivers no longer be accepted. The Plan was developed with extensive public consultation. On November 18, 2002 Alberta Environment issued a public notice under section 53 of the *Water Act* that no applications will be accepted for licences to divert water from the basins of the southern tributaries of the Oldman River, the St. Mary, Belly and Waterton Rivers. This decision will expire on December 1, 2005 unless Phase Two of the plan recommends closure is maintained.

Fact: There are growing pressures to re-allocate water to purposes other than irrigation, including river restoration.

Meeting the goals of Alberta's water strategy requires changes in use and allocation of water

Through *Water for Life: Alberta's Strategy for Sustainability* (2003) Albertans reaffirmed three key goals: safe, secure drinking water supply, healthy aquatic ecosystems, and reliable, quality water supplies for a sustainable economy. The strategy notes that shifts in how we use and allocate water are required. Key directions identified to accomplish these goals are knowledge and research, partnerships and water conservation.

Irrigation expansion in the Oldman River basin will increase financial risk to farmers.

A recent study of irrigation in southern Alberta concludes that a cautious approach should be taken to irrigation expansion in the Oldman River basin and that some irrigation districts should probably not expand due to water supply deficits which will increase the probability of negative net farm income (Irrigation Water Management Study Committee, 2002). The study maintains that improved farm financial performance relies on water use efficiency improvements and crop mixes that include at least one high value crop. Farms that irrigate cereals and oilseeds are considerably less profitable than farms that include higher value specialty crops or forages.

Demand to allocate water from the southern tributaries for purposes other than irrigation is growing

Forecasters of non-irrigation water use in the Oldman River basin predict an increase of 40 percent in 25 years and 80 percent in 50 years, considering moderate growth of population and the economy (Hydroconsult, 2002; Alberta Environment, 2003). Non-irrigation water use includes industrial, municipal, recreation, stock watering and other agricultural activities including, feedlots, fish farms, market gardens and tree farms.

Alberta Environment currently has on file about 80 licence applications for water from the southern tributaries to use for purposes other than irrigation (Alberta Environment, 2004). In addition, there are over 80 parties who already are using water for purposes other than irrigation in the St. Mary River Irrigation District even though this use is not authorized under the licences held by the irrigation district. The irrigation district expects demand for "other uses" to grow (Alberta Environment, 2004).

Growing demand to leave water in rivers for paddling is not included in forecasts. In Alberta and across North America there has been considerable increase in the appreciation of environmental, aesthetic and recreational values provided by rivers (Gillilan and Brown, 1997). Currently, major flow diversions from the southern tributaries have resulted in insufficient flows for paddling through the summers of most years (Rood and Tymensen, 2001). This lack of use however does not indicate a lack of latent demand by recreational paddlers.

Fact: Options exist to restore the southern tributaries but only government can implement them

Water is available for river restoration without affecting current use for irrigation or other purposes.

Table 2 demonstrates that most irrigation districts have not expanded to the limit allowed under the 1991 *Regulation*. Without affecting current operations of the irrigation districts, about 94,000 acre-feet of water could be allocated to the rivers to address shortages in instream flows. This amount of water returned to the rivers would allow an additional flow of about 10 m³/s to augment minimum flows during May to August. Additionally, since 1991 publicly funded improvements to irrigation infrastructure and more efficient application practices by irrigators have resulted in substantial savings of water required to sustain current levels of operation. More improvements are anticipated. For example, in the St. Mary River Irrigation District about 12,000 acre feet of water annually has been saved in improved operation and enhancement of infrastructure (Alberta Environment, 2004). This water returned to the river would allow an additional flow of 1.4 m³/s during May to August. That amount of water returned to the rivers during May to August would allow for greater than 50% increase in current minimum instream objectives in the St. Mary River (2.75 m³/s) or Waterton River (2.27 m³/s) or more than double current minimum instream objective in the Belly River (0.93 m³/s).

Alberta Environment can suspend or cancel a licence where there is significant adverse effect on the aquatic environment and for other reasons

Alberta Environment may suspend or cancel a licence issued under the Act if in its opinion a significant adverse effect on the aquatic environment occurred, occurs or may occur that was not reasonably foreseeable at the time the licence was issued, and compensation may be payable. A licence can also be suspended or cancelled if it is not in good standing, meaning it is in breach of the *Water Act* or the terms and conditions of the licence. Furthermore a water licence can be cancelled if all or part of the water allocated has not been used for three years and there is no reasonable prospect the licensee will resume diversion.

Transfer of water allocations and water conservation holdbacks are now possible

On June 25, 2002 the Lieutenant Governor of Alberta approved the South Saskatchewan River Basin Water Management Plan – Phase One (Alberta Environment 2002). The Plan was developed with extensive public consultation. The Plan enables the transfer of all or part of a water allocation, along with its priority, from an existing licensee to a new or existing water user. Water allocation transfers allow already allocated water to move to new demands while improving the aquatic environment. An application for a transfer is subject to review by Alberta Environment for several criteria, and for a 10% water conservation holdback to improve river flows for the aquatic environment. According to the *Water Act* only licences in good standing can be transferred.

The legal authority for restoration of river flow lies with Government.

According to section 51(2) of the *Water Act* only Government can hold a licence for maintaining a rate of flow of water for the purpose of implementing a water conservation objective.

FACT: We all have a role to play in maintaining healthy rivers by using water more wisely and leaving enough water in our rivers to keep them alive.

The St. Mary River Irrigation District proposes to control and profit from other uses of water and avoid helping restore stressed rivers

Instead of accommodating other uses through legitimate transfers authorized by Alberta Environment, the St. Mary River Irrigation District applied to change its water 1991 licence for 222,000 acre feet so it can use water for other purposes without being subject to a 10% conservation holdback. The District plans to grant water to “historical other users” (parties currently using water without proper authorization) within the irrigation district boundaries through an agreement which would see water returned to the irrigation district at no cost when it was no longer needed (St. Mary River Irrigation District, 2003). This amount is about 3000 acre feet. New applicants for use of water for purposes other than irrigation would be dealt with on a first come, first served basis. New users would be required to pay in advance a ‘capital charge’ based on allotment and would be entitled to sell or transfer all or portions of their volume only with approval by the District. Annual rates for delivery of the water would be charged based on metered volume or total volume allocated if unmetered. Rates would be set annually by the Board comprised of seven irrigators. The private Board would not be bound to consider the matters and factors contained in an approved water management plan, water guideline or water conservation objective or any of the other considerations defined in the *Water Act* including effects on the aquatic environment and wise use. It is noteworthy that water is a public resource and the diversion and conveyance structures used by irrigation districts are constructed and maintained using public funds, however only the interests of irrigation district patrons would be considered in decisions about allocation and delivery.

The Southern Alberta Environmental Group is appealing a decision by the director of Alberta Environment to allow the Saint Mary River Irrigation District to use 12,000 acre feet of ‘saved’ water for other purposes without returning some to stressed rivers.

The appeal is to the Alberta Environmental Appeals Board. For more information please contact Cheryl Bradley at (403)328-1245. Contributions to help with the appeal can be mailed to Southern Alberta Environmental Group, Box 383, Lethbridge AB T1J 3Y7

B. Chronology of Appeal by Southern Alberta Environmental Group

- 20 Sep, 1991 The South Saskatchewan Basin Water Allocation Regulation comes into effect through Order in Council. It defines limits to irrigation expansion and sets minimum flows for the southern tributaries of the Oldman River which are far less than required to maintain health of the rivers.
- 12 Jul, 1992 AE grants SMRID a licence with priority no. 1991-08-23-09 to divert an additional 222,000 acre-feet of St. Mary River, Belly River and Waterton River water annually from Milk River Ridge Reservoir to use for irrigation purposes within the District. This brings the total of SMRID's licenced diversion to 722,000 acre-feet annually.
- 25 Jun, 2002 The *South Saskatchewan River Basin Water Management Plan – Phase One* is approved by the Lieutenant Governor of Alberta. The Plan enables transfer of all or part of a water allocation and water conservation holdbacks (10%) when transfers occur.
- 18 Nov, 2002 AE issues Public Notice that no applications will be accepted for licences to divert water from the St. Mary, Belly and Waterton Rivers.
- 3 Dec, 2002 SMRID applies to AE for amendment of the purpose of its 1991 licence from "irrigation" to "irrigation and any and all other purposes"
- 15 & 22 Mar, 2003 Notice of Application by SMRID for amendment to its licence appears in *The Lethbridge Herald*. It states the proposed amendment would change the purpose from "Irrigation" to "Irrigation District Purposes" which is defined as "the allocation and delivery of water for irrigation and for any other purpose in order to maintain and promote the economic, cultural or environmental viability of the District".
- 11 Apr, 2003 SAEG submits a Statement of Concern to Alberta Environment
- 3 Jun, 2003 AE accepts SAEG's Statement of Concern and determines SAEG is directly affected
- 17 Jun, 2003 SMRID disagrees with AE acceptance of Statement of Concern
- 30 Oct, 2003 AE grants amendment (No. 00044590-00-01) which defines Irrigation District Purposes as "the allocation and delivery of water" for the following purposes: "municipal, agricultural, irrigation, commercial, industrial, management of fish, management of wildlife, habitat enhancement, recreation". Conditions are included which limit delivery of water for purposes other than irrigation to a maximum of 12,000 acre feet annually and prohibit delivery of water for the purpose of injecting water to enhance oil or gas production.
- 24 Nov, 2003 SAEG files Notice of Appeal to EAB. SAEG expresses willingness to participate in a mediation process.
- 9 Jan, 2004 EAB determines mediation would not be appropriate in this case and proceeds to process the appeal beginning with setting a Preliminary Meeting to determine the directly affected status of the appellants, any further preliminary issues and issues to be heard at a future hearing, should one be held.
- 20 Apr, 2004 Preliminary Meeting of EAB to hear oral arguments and evidence from the parties regarding whether the EAB will accept the Notice of Appeal filed by C. Bradley, K. Jericho and the individual members of SAEG, to determine appellants directly affected status, and the issues to be heard at a future hearing, should one be held.

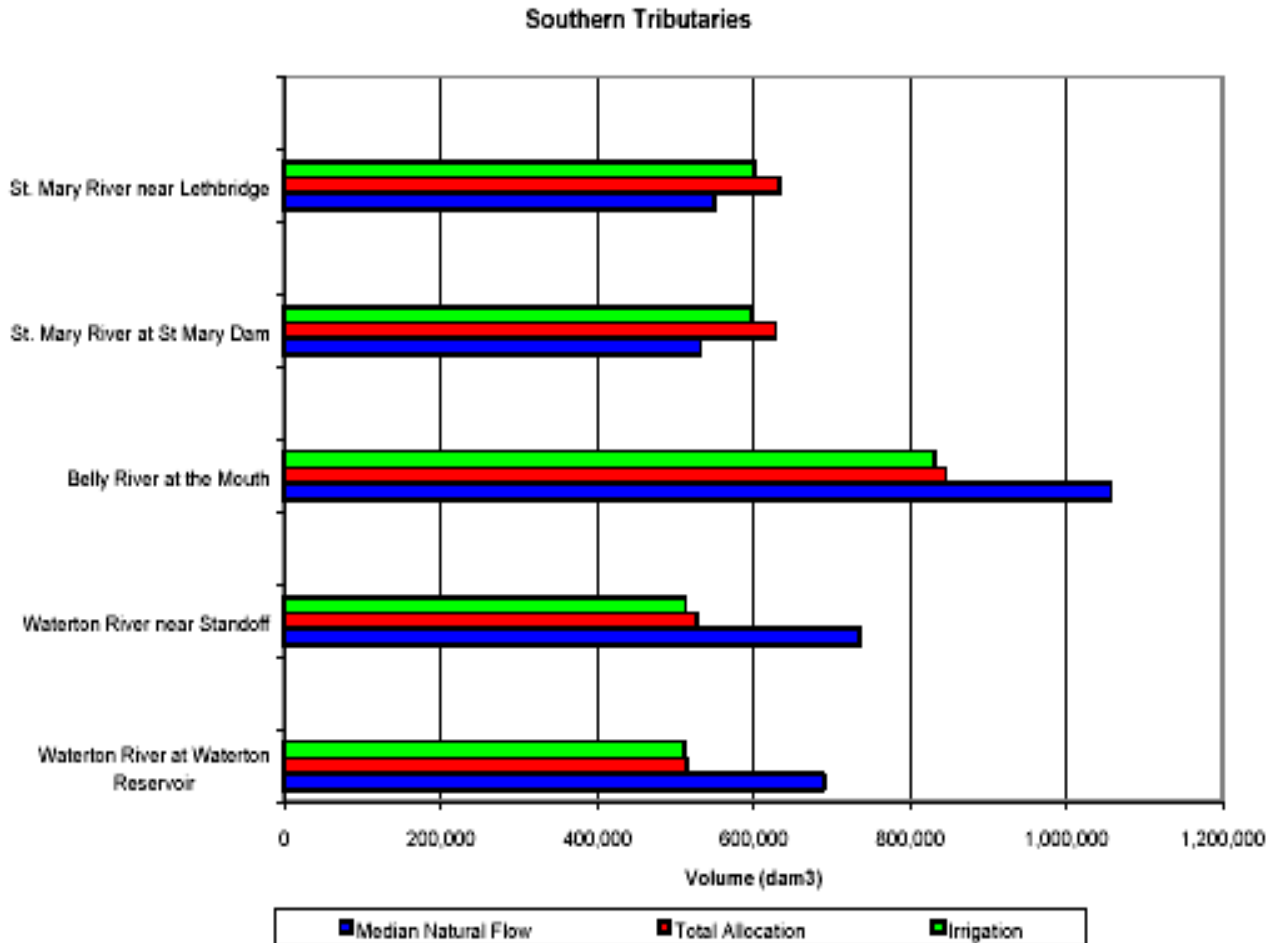
AE – Alberta Environment; EAB – Alberta Environmental Appeals Board; SAEG – Southern Alberta Environmental Group; SMRID – St. Mary River Irrigation District

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Attachment 1

Source: Alberta Environment (2003)



The term dam³ (cubic decameters) is used to express volume. A dam³ is 1,000 m³ or 0.81 acre-foot.

Median flow is the middle value over the period of record. For half of the years the flow was greater than the median flow and for half of the years it was less.

Note: The Oldman River also has a significant degree of allocation, 70% of median flow (1,692,000 ac-ft).