

MEMORANDUM

Date: June 8, 1998
To: Sam Schellenberg, PVWC
From: Rick Penner, earthbound environmental Inc.
Re: Final Copy of the Water Conservation Plan

Hi Sam,

Attached is a final copy of the Water Conservation Plan that was submitted on your behalf to Larry Strachan at Manitoba Environment on June 1, 1998.

I have also attached an invoice for the work performed in preparing the Water Conservation Plan and related expenses. As we discussed last week, this invoice is 3.5 hours higher than originally projected. Much of this additional time was associated with the meeting in Altona that was not originally considered.

Thank-you again for contacting earthbound environmental with this work. If you have any questions please call me at (204)774-0372.

Integrated waste management

Pembina Valley Water Co-operative

WATER CONSERVATION PLAN

June, 1998

June 1, 1998

Larry Strachan, Director of Approvals
Manitoba Environment
123 Main St.,
Winnipeg, MB
R3C 1A5

Dear Mr. Strachan,

As requested, attached is a copy of the Pembina Valley Water Co-operative (PVWC) Water Conservation Plan.

This Water Conservation Plan was developed based on previous water conservation strategies developed by the PVWC. A review of additional water conservation opportunities was also conducted with the results included in this plan.

If you have any questions or comments, please call Sam Schellenberg of the PVWC at (204)324-1931.

Sincerely,



Rick Penner
earthbound environmental Inc.

cc. Sam Schellenberg, PVWC

TABLE OF CONTENTS

1. Introduction	1
2. Water Conservation Plan	2
Education	2
Industrial Water Recycling.....	3
Effluent Irrigation.....	3
Retention of Useful Infrastructure.....	3
Water Pricing/Rate Structure.....	4
Municipal Record Keeping & Surveillance Procedures.....	4
Municipal Regulations.....	5
Co-operation Between Juridictions.....	5
3. Implementation Schedule.....	6
Review Process.....	7

Appendix A – List of Pembina Valley Water Co-operative Members

PVWC WATER CONSERVATION PLAN

1. Introduction

Water is a scarce and precious resource to the people living in the municipalities that belong to the Pembina Valley Water Co-operative (PVWC). Regular water shortages in most parts of the region have instilled a strong conservation ethic in these communities. The prevalence of this ethic has been borne out by studies that have shown per capita water consumption to be lower in the area serviced by the PVWC than in most comparable areas of Manitoba and Canada (Griffin, 1992).

With additional water treatment capacity currently completed or near completion at Lettelier, Morris, and Stephensfield, the water shortages that have plagued the area will begin to be alleviated.¹ The PVWC is committed to maintaining the existing commitment to conservation, however, to ensure that the benefits of the new water supplies are maximized.

As part of this commitment the PVWC has developed a comprehensive Water Conservation Plan for the region. This plan is based on the following key principles:

- Achieving the maximum sustainable benefit to the region as a whole in managing the available water.
- Full co-operation between all regional local governments as well as between the three levels of government.
- Maximizing the efficient use of the available water supply through extensive water conservation efforts.

The PVWC Water Conservation Plan focuses on 8 main areas:

1. Education
2. Industrial Water Recycling
3. Effluent Irrigation
4. Retention of Useful Infrastructure
5. Water Pricing/Rate Structure
6. Municipal Record Keeping & Surveillance Procedures
7. Municipal Regulations
8. Co-operation Between Jurisdictions

Full support for the Water Conservation Plan has been received from all members of the Pembina Valley Water Co-operative. For a complete list of PVWC members see Appendix A.

¹ It should be noted that the high capital costs of expanding water service to all rural establishments will result in lengthy delays in completing the entire water distribution network.

2. Water Conservation Plan

EDUCATION

PVWC recognizes the important role of education in promoting water conservation to all segments of the community. The following educational activities will be implemented as part of the Water Conservation Plan:

Public Education Campaigns

Municipalities in the PVWC will implement public education campaigns targeting the residential, commercial, and agricultural sectors within their jurisdiction. Key educational messages will include:

- ✓ the economic rationale for water conservation
- ✓ the limits to existing water availability in the area
- ✓ information on technical issues related to water supply (e.g. evapotranspiration from reservoirs during hot dry summers)
- ✓ promotion of water conserving technologies
- ✓ water conservation tips and suggestions

Public education information will be distributed through utility bill inserts and news releases to local media. Water conservation reminders will also be included in general correspondence to area ratepayers.

The PVWC will assist member municipalities in developing consistent public educational materials for each of the identified sectors.

The PVWC will also organize tours of the new water treatment plants for both schools and the general public. All schools in the region will be encouraged to send students on tours of the plants.

Involve Local Community Organizations

The PVWC will encourage local community-based organizations (e.g. youth clubs, service clubs, environmental organizations, etc.) to promote water conservation through their activities. Specific activities may include water use reduction competitions and literature distribution campaigns.

Educational System

The PVWC will work with local schools to ensure that water conservation information is effectively disseminated. Efforts to include water conservation information directly in school curriculum will also be undertaken. For example, students could conduct detailed studies of water use practices in the local school, local businesses, or at home and develop and implement water conserving recommendations.

INDUSTRIAL WATER RECYCLING

It is important that industries within the boundary of the PVWC use water as efficiently as possible. A key conservation technique available to industrial water users involves recycling used water either back into the same process or into another use at the same plant. Financial measures are recognized as the most effective means of encouraging industrial water recycling.

The PVWC will implement the following measures to promote water conservation in the industrial sector:

1. constant water rates will be adopted for all industrial water users
2. options for implementing increasing block rates for industrial users will be investigated
3. sanctions for industries not implementing water conservation programs may be established if necessary (e.g. financial penalties or a targeted increasing water rate)
4. "Wet" industries cannot be accommodated even with the enhanced water supply. New industries requiring large inputs of water will not be encouraged.

EFFLUENT IRRIGATION

Treated effluent from municipal systems can provide an important supply of water (and nutrients) to crops requiring irrigation. This technique is particularly appropriate in areas where surface water or soft ground-water is supplied. Caution must be taken in areas supplying hard ground-water as salt-zeolite water softeners result in salty effluent that cannot be used with most crops.

Effluent irrigation will be promoted by the PVWC where the practice is environmentally safe.

RETENTION/EXPANSION OF USEFUL INFRASTRUCTURE

Existing infrastructure will be utilized to the maximum extent possible. To this end, PVWC will promote the following:

1. the retention of potentially useful farm dug-outs
2. the retention of spring run-off on agricultural lands as a form of backflood irrigation

PVWC will also ensure that no water supply infrastructure is removed without due consideration being given to all its potential uses. Both local and regional considerations will be weighed when evaluating the utility of any infrastructure.

The PVWC is also promoting the development of a Conservation District for the region. Additional water impoundments may be built through the Conservation District should it be successfully established.

WATER PRICING/RATE STRUCTURE

Water pricing levels and rate structures can have a significant impact on water consumption.

Water Pricing - water pricing within the PVWC will be set at rates sufficient to cover all operating and maintenance costs, as well as the establishment of a Utility Replacement Fund.

Rate Structure - only pricing structures that encourage water conservation (i.e. constant or increasing block rates) will be considered. Should water consumption exceed targeted levels in a given location, emphasis will be given to implementing an increasing block rate structure.

MUNICIPAL RECORD KEEPING AND SURVEILLANCE PROCEDURES

As part of the PVWC Water Conservation Plan, all member municipalities will be required to maintain water consumption records and establish surveillance procedures. Specific municipal actions will include:

Water Distribution

- fully meter all production water
- fully meter all water sales
- establish programs for checking meter accuracy
- regularly calculate the distribution system losses
- maintain daily and monthly records of water production
- implement remedial actions as required to minimize distribution system losses

Sewage Management

- ensure that all domestic sewage manholes are extended to the ground surface
- determine the pumping rate for sewage lift stations
- have all sewage lift station pumps equipped with time meters
- maintain daily records of sewage lift station flows

MUNICIPAL REGULATIONS

The PVWC will work with member municipalities in the following regulatory areas:

By-Laws

All municipalities will be encouraged to have appropriate water-conservation related by-laws in place to ensure that they are available if required (e.g. lawn watering by-laws). The PVWC will assist in the development of templates of relevant by-laws for use by member jurisdictions.

Building & Plumbing Codes

Building and plumbing codes will be altered as required to ensure that all new and renovated construction/renovation projects incorporate appropriate water conservation technologies. The PVWC will assist in the development of templates of relevant building and plumbing codes for use by member jurisdictions.

CO-OPERATION BETWEEN JURISDICTIONS

Water supply is a regional issue and must be dealt with on a regional basis. This requires full co-operation between municipal governments within the PVWC. It also requires meaningful partnerships between all three levels of government.

The PVWC will continue building on the co-operative nature of the current efforts to address water supply issues in the Pembina Valley.

Note: As water supply issues often cross regional boundaries, a province-wide Water Conservation Strategy would provide an important opportunity to co-ordinate water management throughout the province. The PVWC would welcome and actively participate in the development of such a strategy.

3. Implementation Schedule

Some components of this Water Conservation Plan have already been implemented. Some will be implemented within one year while some will be considered in the long term. There are also some activities which will be implemented on an on-going basis.

Already in Place

- Water Pricing Policies - PVWC has set the wholesale price of water at the same level for all co-op members. These prices are based on the full cost of building and maintaining the water supply infrastructure. Constant water rates have been established for all system expansions after 1990.
- By-Laws – water conservation by-laws are in place in all major communities in the PVWC
- Public Education Programs – public education programs have been successfully implemented in all jurisdictions in the PVWC
- Water Loss Monitoring – water loss monitoring programs are established throughout the PVWC
- School Curriculum – water conservation information has been included in the curriculum in most major school districts in the region

Implementation Within 1 Year

- School Curriculum Expansion - water conservation information will be included in the curriculum of all area schools not already participating
- Treatment Plant Tours - tours of the new water treatment plants will be organized for schools and the general public

Longer Term

- Effluent Irrigation – opportunities for effluent irrigation will continue to be examined

On-Going Activities

- Public Educational Activities – public education activities such as leaflets to homeowners and tours of local water treatment plants will be conducted on a regular basis
- Local Community Organizations - work with local community organizations on promoting water conservation will be on-going
- Retention of Infrastructure – efforts to preserve and enhance relevant infrastructure will be on—going
- Municipal Record Keeping and Surveillance – municipal record keeping and surveillance activities will be on-going
- Co-operation – the PVWC will continue to co-operate on water supply issues between member jurisdictions as well as with outside levels of government

Review Process

The PVWC will review the effectiveness of this Water Conservation Plan on an on-going basis through monthly monitoring of water consumption levels and quarterly reviews of system water loss information.

Adjustments to the plan will be made based on these regular assessments.

APPENDIX A

List of Pembina Valley Water Co-operative Members

Rural Municipalities	Towns
Dufferin	Altona
Franklin	Carman
Montcalm	Emerson
Morris	Gretna
Rhineland	Morden
Roland	Morris
Stanley	Plum Coulee
Thompson	Winkler