



# **RURAL WATER PIPELINE HANDBOOK FOR SASKATCHEWAN**

*UNIT THREE ( III ) -  
GETTING STARTED*

*April 2009*

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## Section 1      Groundwork Preparation

### 1.0    General

The start and formation of a *Pipeline Organization* is no easy feat. Once the *Organization* is formed, it is unlikely that you will actually be able to deliver water to subscribers in the first year and perhaps not even the year after. There are many hurdles to cross. Because of the new rules and regulations that have now been implemented and necessary permits and approvals that are required as well as organization and administrative preparation, a time line will need to be developed. (See Timing and Scheduling at end of this Unit). This Unit will provide information for the *Organization* and outline the steps that are required before you can supply water to potential subscribers.

### 1.1    Initial Contact

Communities or groups of individuals interested in developing a rural water pipeline should first contact the Saskatchewan Association of Rural Water Pipelines, Inc. (SARWP). (Please see Unit I for all contact information). Initial contact with SARWP is often verbal and informal and is generally with one or two representatives of the new *Organization* or a steering committee if one has been formed.

SARWP representatives will provide technical advice to get the project off the ground. If the *Organization* wishes, SARWP and PFRA representatives will attend a public meeting to answer any questions regarding the potential project. The *Organization* representatives will be given the contact name of their local PFRA office. PFRA will be available for technical assistance and will also be able to inform you of any current funding programs that the project may be eligible for. ([Appendix III - A1](#)) includes a map showing the area covered by each of the PFRA District Offices, including the phone number of each office.

([Appendix III - A2](#)) includes a map showing Sask Water – Water Resource Management Boundaries with Rural Municipalities.

([Appendix III - A3](#)) includes a map showing Saskatchewan Health Region Boundaries with Rural Municipalities.

([Appendix III - A3 \(1\)](#)) includes a listing of Regional Health Authorities (Health Regions).

([Appendix III - A4](#)) includes a map showing Ministry of Environment and Resource Management Boundaries with Rural Municipalities.

### 1.2    Getting Organized – Formation of Committee

After the first public meeting and if there is enough interest for the project to move forward, the *Organization* should form an “official” steering committee to be the liaison with SARWP and PFRA. This committee, which should be a minimum of a chairperson, secretary and treasurer, will assist in the project planning and design.

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An Expression of Interest form ([Appendix III - B](#)) should be filled in by all those who have an interest in the new project. This form indicates a subscriber's interest in the project only and should not be misconstrued as a final commitment to be part of the project.

Once a decision is made to proceed to the preliminary design stage, the *Organization* should determine which type of association it is going to form and what the legal name will be. The *Organization* could choose one of the following:

- ✓ Cooperatives
- ✓ Water Users Groups
- ✓ Pipeline Associations
- ✓ Non-Profit Corporations
- ✓ Public Utility Boards

Any of the above *Organizations* desiring to form under *The Municipalities Act* (M.A.) must do so through a Rural Municipality (R.M.). The primary advantage of forming through an R.M. is the ability to access the R.M. tax base if there is any default in payments. By providing an avenue for debt collection, your *Organization* may be viewed as more secure with your financial institution and therefore may be eligible for “special rates”.

### 1.3 Early Funding Requests

Early funding is necessary so that the *Organization* can research the ideas put forth by the committee and determine general interest for a pipeline in your community

*Organizations* may obtain initial funding to assist with expenses. You can:

- ✓ Ask your local Agriculture, Development and Diversification (A.D.D.) Board
- ✓ Ask your participating R.M.'s to sponsor public meetings by paying for hall rentals, coffee, printing costs, mailing costs, etc.
- ✓ Ask for a minimal charge to accompany survey forms

### 1.4 Surveying the Project Area

Information surveys can be conducted by the *Pipeline Organization* to identify interested patrons. Surveys can be for the initial project and that same template can also be used for new potential projects in later years. This is best performed by using a written questionnaire ([Appendix III - C](#)) to determine location, need and interest to connect to a regional water pipeline system.

Based on the results of the questionnaires received, PFRA may perform conceptual/feasibility studies before the *Organization* becomes formally organized. Conceptual pipeline layouts and cost estimates can be performed at this stage using existing information. If the *Organization* wishes, conceptual layouts and cost estimates may be presented at a public meeting.

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It is common for the *Organization* to request PFRA to provide several scenarios indicating pipeline layout, cost estimate and presentation. PFRA may prepare an appropriate number of scenarios to establish a project budget and assess feasibility. This could assist the *Organization* in determining which users are to be included in the preliminary and/or final design stages.

**CAUTION:** Project planners should emphasize that layouts and costs are conceptual only. They are not to be interpreted as the final cost as this cannot be determined until construction is completed.

## 1.5 Securing your Water Source

At this stage, it is very important to secure a water supply. PFRA may advise the *Pipeline Organization* on possible water source alternatives. If water is purchased from a municipal supply such as a town or city, or if your supply is purchased from SaskWater, it is necessary to have an agreement in place prior to obtaining your consulting Engineer. Examples of each of these agreements are in ([Appendix III - D](#)). (**Note:** at time of print, an agreement with SaskWater was unavailable).

## 1.6 Becoming a Legal Entity

If an *Organization* wishes to proceed to the preliminary design stage, they must form a legal entity. If you are formed through an R.M., you will be created as a “Controlled Corporation” of the R.M.(s). However, your *Organization* may also choose to become an incorporated entity which must be processed through the Government of Saskatchewan – Department of Justice.

In order to form a Public Utility Board through participating R.M.’s, a Corporate Bylaw must be passed by all R.M.’s in which your *Organization* will be installing water pipelines. More information on the Corporate Bylaw can be found in Unit VII Section 1.1.

## 1.7 PFRA – Possible Sources of Assistance

In the past, technical and financial assistance has been made available through PFRA and others. To determine what may be available to your *Organization*, contact SARWP and/or PFRA. ([Appendix III - A1](#))

## 1.8 Engineering/Terms of Reference

The next step for an *Organization* is to develop a Request for Proposals for Engineering Services ([Appendix III - F](#)) and a Terms of Reference ([Appendix III - G](#)). PFRA may assist the *Organization* in the preparation of the Terms of Reference for engineering services, and may provide a list of consulting firms ([Appendix III - H](#)) who have the ability to undertake the design and engineering services during construction of the rural pipeline. Your *Organization* will require a project (design) brief ([Appendix III - I](#)) which describes the project, provides cost estimates, and a plan showing the pipeline layout and location of pumping stations. The project brief can also be used by Federal and

Provincial agencies for regulatory requirements. PFRA may assist your *Organization* in the development of these items.

The selection of a consulting firm will be the *Organization's* responsibility; however, PFRA may assist the *Organization* in evaluating proposals ([Appendix III - J](#)).

## 1.9 Other Agencies and Approvals

Once the *Organization* has selected an Engineering Consultant, the next step is to apply for an Application for a Permit to Construct and/or Operate a Waterworks. Generally the Engineering Consultant will submit an application on behalf of the *Organization* wishing to obtain a waterworks permit. (See [Appendix III - K](#)). It is also available on the web-site at [www.saskh2o.ca](http://www.saskh2o.ca) (click on For Operators and scroll down to Forms).

The following table shows Agencies that **may** be involved in rural pipeline projects and their roles:

Table 1. Agencies Commonly Involved in Rural Pipeline Projects and Their Roles.

Agency	Role in Pipeline Project
<i>Pipeline Organization</i>	Planning, arranging financing, obtaining approvals, tendering, construction, administration and operation of project including water service agreements and land control.
SARWP	The Saskatchewan Association of Rural Water Pipelines, Inc. is available to assist with all planning, administration and technical assistance and any other areas as requested by the <i>Organization</i> .
PFRA	Where possible, technical assistance (planning, assistance in obtaining approvals, conceptual/preliminary design, assistance in final design tendering and construction inspection) and financial assistance.
Private Engineering Consultants	Engaged by the <i>Organization</i> to provide assistance in the preliminary design, conduct project final design, and provide engineering services during construction and post construction.
Saskatchewan Watershed Authority	The Watershed Authority is responsible for the allocation of ground and surface water inventory as part of the Government's Long-Term Safe Drinking Water Strategy (LTSDWS).
Saskatchewan Health Regions	Regulator of limited-scope water pipelines and responsible for issuing plumbing permits and inspecting connection to water pipelines. Also provides advice on backflow prevention devices at delivery points.
Ministry of Environment	Approvals to construct and/or operate a <b>new</b> waterworks or approvals to construct, alter or extend an <b>existing</b> waterworks must be applied for via Ministry of Environment. Ministry of Environment is the principle regulator of municipal water and sewage works and all privately owned (publicly accessible) water and sewage works.
Rural Municipality	Approval to construct in municipal right-of-way, approval to cross roads. Establish a Public Utility if this option is chosen.
Village/Town/City/ Other Group	Agreement to supply water to the <i>Pipeline Organization</i> (if applicable).

The following table shows other Agencies that **may** be involved in rural pipeline projects and their roles:

Table 2. Other Agencies That May be Involved in a Rural Pipeline Project and Their Roles

Agency	Role in Pipeline Project
Saskatchewan Justice (Corporations Branch)	Registration of cooperative, water users association, public utility, non-profit corporation <a href="http://www.saskjustice.gov.sk.ca/Corporations">http://www.saskjustice.gov.sk.ca/Corporations</a>
Saskatchewan Highways & Transportation	Approval to construct in or adjacent to highway right-of-way, approval to cross highways.
Railways (CNR/CPR)	Approval to cross railway.
Provincial and Federal Fishery Agencies	Shoreline Alteration Permit (Provincial) required in areas of existing or potential fish habitat. May recommend remedial measures for crossings. Approval needed for intakes.
Fisheries and Oceans Canada	Approval to cross navigable waterways or construct intakes required in waterways of existing or potential for navigation. May recommend remedial measures for crossings.
Saskatchewan Environment	Approval needed to cross critical wildlife habitat, designated lands or provincial parks. Provincial Environmental Assessment Approval may also be needed.
Trans Gas	Approval to cross gas transmission lines. <sup>1</sup>
Sask Tel	Location of telephone and fibre optic lines. <sup>1</sup> For fibre optic lines, an agreement will be necessary to cross lines and easements.
Sask Energy	Approval to cross gas distribution lines. <sup>1</sup>
Sask Power	Location of underground power. <sup>1</sup> An agreement will be necessary to cross under existing overhead and underground transmission lines and easements. Private lines beyond the meter are to be located by the <i>Organization</i> or landowner affected.
Chief Surveyor	Easement Preparation/Legal Drawings.
Information Services Corporation (ISC) (originally called Land Titles)	Title searches, registration of easements and/or caveats/interests.
Indian and Northern Affairs Canada (INAC)	Ensure routes do not interfere with Treaty Land Entitlement lands.
Revenue Canada	Business Number Registration / GST Rebate
Any other agency whose easement the pipeline crosses	Approval to cross as required by the agency.
Individual Landowners	Easements for pipeline. Water service (Subscriber) agreements.
Sask Water Utilities Branch	May provide source from Sask Water Utility water pipelines.
Rural Development Lands Branch	Easements to cross Provincial Crown Land.

<sup>1</sup> Will insist on prior notice so they can have an inspector present for crossing.

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## 1.10 Proceeding to Construction

A list of responsibilities of the *Pipeline Organization*, PFRA and Engineering Consultants is presented in ([Appendix III - L](#)). This list can be used as a general guideline and checklist for progression of a pipeline project from the conceptual stage through to actual construction.

The Engineering Consultant will present different scenarios that may be incorporated in the final design stage. Ultimately, the *Pipeline Organization* will approve or disapprove the recommendations as put forth by your Consultant.

*Pipeline Organizations* will have the following options:

- ✓ Purchase materials and do your own work
- ✓ Purchase materials and enter into an installation contract
- ✓ Proceed with the tendering process to supply and install the pipeline

The Engineering Consultant selected by the *Organization*, will likely assist in the preparation of contract documents to invite or advertise for tenders. A funding agency may require that specific standards for construction of the pipeline and pumping facilities are met in order to qualify for financial assistance. In addition, contractual requirements may also be recommended (i.e. tender security, construction security and insurance conditions). The following items are recommended to be included in tender packages:

- ✓ Tender and Contract Form
- ✓ Statement of Equipment
- ✓ List of Subcontractors
- ✓ Instructions to Tenderers
- ✓ Supplementary Contract Security Conditions
- ✓ Supplementary Insurance Conditions
- ✓ General Conditions
- ✓ Specifications
- ✓ Plans

The *Organization* has the option to either advertise for tenders or invite tenders.

- ✓ Advertising Tender – a three to four week tender period is recommended.
- ✓ Inviting Tenders – a two to three week tender period is recommended.

For large projects or components of projects, a minimum of three bids may be required to ensure the tendering procedure is fair and that a reasonable price is obtained for the work. It is recommended that the tender opening be a public-tender opening.

The following guidelines may be used by the *Pipeline Organization* to assist with the tendering process:

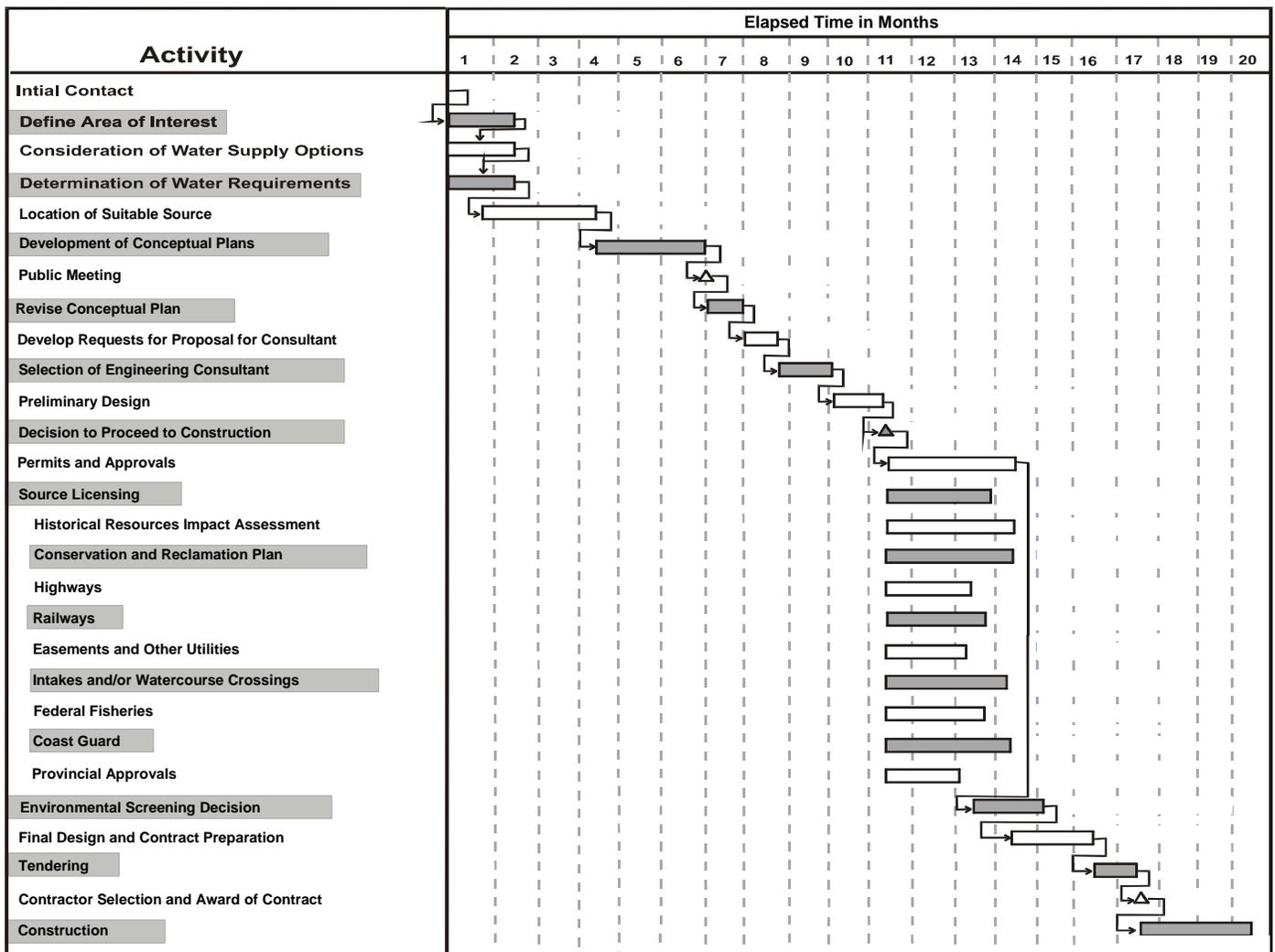
Estimated Cost of Work	Tender Procedure	Minimum Number of Estimates or Tenders	Contract Security	Tender Security	Method of Tendering
Less than \$5,000	Tenders not necessary; <i>Pipeline Organization</i> may hire work out based on estimate of value of work	One	None	None	Informal
\$5,001 to \$30,000	Informal	Two	Optional	None	Invited or Advertised
\$30,001 to \$500,000	Formal	Three	Required	Required	Invited or Advertised
\$500,001 to \$1,000,000	Formal	Three	Required	Required	Recommend Advertising
>\$1,000,000	Formal	Three	Required	Required	Advertising

After the contract has been awarded, your Engineering Consultant will commence layout and construction staking of the proposed water supply system. Your Consultant should be present to witness critical events in the pipeline construction. These may include: pipeline filling, pipeline chlorination, pipeline testing, installation of valves, and road and railway crossings. Consultants will be responsible for the inspection phase of projects, and discussion should be held early on as to what degree each party will be involved in construction supervision. The *Organization* should be encouraged to provide regular contract construction supervision.

The *Organization* should review the tender package periodically to ensure validity of the completion of all tasks listed.

### 1.11 Timing and Scheduling

An *Organization* wishing to undertake a pipeline project will generally be unfamiliar with the process and time required to take the project from the conceptual to implementation stage. It is not uncommon for a *Pipeline Organization* to spend over a year deliberating over conceptual-level studies before arriving at a decision to proceed to the next stage. Once this decision is made, there is often pressure to get the project built as soon as possible, due to time constraints associated with some external sources of funding. However, it is important for the *Organization* to understand that a considerable amount of time is required for all stages, much of which is devoted to obtaining permits and approvals. The chart shown below provides an indication of how the various activities involved in the development of a pipeline project should be scheduled, and it also provides an indication of how long it might take to advance a pipeline project from conception to completion.



Typical Pipeline Project Timeline

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The time required for each activity will, of course, vary according to the scale and complexity of the project. Also, as noted previously, the amount of time devoted to conceptual-level studies at the initial stages of development will depend on the nature of the *Organization*, the ease with which a water source can be found, and the amount of time required to secure funding.

The time at which decisions are made and activities undertaken will also affect the overall time required for developing a project. For example, some activities cannot be undertaken at certain times of the year (Heritage resource impact assessments cannot be undertaken when there is snow on the ground; construction of intakes and/or crossings may be prohibited at certain times of the year, etc.). Other activities, such as pipeline installation, while possible to undertake year-round, are more costly during the winter. That being the case, the previous chart should probably be viewed as the most optimistic time line for development of a pipeline project.