Communication Plan for Low Flows in the Nicola Watershed

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1.0 Introduction

In 2010, the Nicola Watershed Community Round Table (NWCRT) received funding from the Fraser Salmon and Watersheds Program to develop a communication plan for periods of drought. The idea for the project arose from the NWCRT's experience in the summer of 2009, a year of low flows. The Ministry of Environment had been monitoring the situation in the Nicola watershed and had issued several news releases advising that water levels were dropping because of the lack of precipitation. There were also newspaper articles about the water supply in streams and how low flows impact fish populations. In late August, the Ministry followed these up with a phone call to the Nicola Watershed Community Round Table with a request for assistance in asking water licensees along the Nicola River to stop irrigating in order to allow a pulse of water from the Nicola dam to reach Spences Bridge. The additional water would encourage Chinook salmon to migrate and distribute themselves up the Nicola mainstem and into associated tributaries. Fisheries and Oceans Canada also discussed this request with the NWCRT. The request, while reasonable, was difficult to fulfill. The NWCRT had no authority to make such a request of water licensees on behalf of government. There was insufficient notice provided and information as to when exactly irrigating was to stop and for how long, and the organization was not given a list of the water license holders. In addition, the NWCRT's capacity to assist with information dissemination was and still is very limited.

The Communication Plan for Low Flows (CP for LF), as the project is being called, has been developed to address the issues that arose last year, to provide coordination for a drought response and to build awareness and understanding of the roles of government agencies (federal, provincial and local), local stewardship groups and others in responding to drought. A communication plan is necessary to address and mitigate drought/low flow impacts to the environment, economy and communities. The Plan has been developed in consultation with government representations, water purveyors and water users. A list of the individuals who participated in discussions and provided input into the Plan is found in Appendix A.

As the NWCRT's project got underway, the province of British Columbia was putting the finishing touches to a British Columbia Drought Response Plan (DRP).[1] Much of its content has been very useful in developing a local communication plan. Furthermore, in the interests of avoiding confusion and to dovetail with the province's approach, the CP for LF has borrowed liberally from this document. When exact wording has been copied from the DRP into this document, the text appears in italics.

[1] A copy of the **British Columbia Drought Response Plan** is available from the following web site: http://www.env.gov.bc.ca/wsd/public_safety/drought_info/index.html

The DRP states on page i that *the information provided* in the document *is offered as a public service*. The DRP *is intended to guide actions of staff in provincial government agencies.* There are also recommended actions for federal government agencies, local government (regional districts and municipalities), First Nations and water licensees.

2.0 Communication Plans

A communication plan consists of the following components: a situational analysis, communication objectives, identification of target audiences, communication strategies to be used, key messages, communication activities, evaluation of the plan and a budget.

The situation analysis describes the environment in which communication will take place and identifies the issues to be addressed. The communication objectives state the purpose of the communications. The individuals, groups, organizations, etc. that the communication plan will be directed towards represent the target audience(s). The key messages are the essential ideas to be communicated. The overall approaches to be used to achieve the stated objectives comprise the strategies. The methods, tools or vehicles that carry the messages to the target audience(s) are the communication activities. The evaluation is the measuring of results against the stated objectives.

The CP for LF focuses on the following components:

- Situation analysis;
- Communication objectives;
- Target audience(s);
- Key messages;
- Communication strategies;
- Communication activities.

The two remaining components – evaluation and budget – will not form part of the CP for LF. Budgets will be set by the individual agencies and organizations that implement communication activities and are outside the authority of the NWCRT. The NWCRT may set its own budget for communication activities associated with a drought response. Evaluation also rests with each individual agency and organization that develops its own strategies and activities. The CP for LF is not providing this level of detail.

3.0 Communication Plan Components

3.1 Situational Analysis - Drought

The CP for LF is a plan for periods of drought in the Nicola watershed. A definition of drought is therefore a logical starting point. These definitions were taken from the British Columbia Drought Response Plan.

Drought is a recurrent feature of climate involving a deficiency of precipitation over an extended period of time, resulting in a water shortage for activities, communities or aquatic ecosystems. Droughts can be defined as meteorological, hydrological, agricultural or socioeconomic, each of which implies different impacts.

***Meteorological drought** is generally defined by comparing the rainfall in a particular place and at a particular time with the average rainfall for that place. Meteorological drought lead to a depletion of soil moisture and this almost always has an impact on crop production. When drought is defined in this way, only reductions in rainfall are considered. The impacts of the lack of water on water reservoirs, human needs or on agriculture are not taken into account.*

***Hydrological Drought** is associated with the effect of low precipitation on water levels in rives, reservoirs, lakes and aquifers, Hydrological droughts usually are notices some time after meteorological drought.*

***Agricultural Drought** occurs when there is not enough water available for a particular crop to grow or livestock to thrive at a particular time. This drought does not depend only on the amount of precipitation, but also on the correct use of water. Agricultural drought is typically seen after meteorological drought and before hydrological drought.*

***Socio-Economic Drought** occurs when the demand for economic goods exceeds their supply as a result of a weather-related shortfall in water supply.*

Levels of Drought

In order to manage drought conditions of varying severity, the provincial government has adopted a rating system for levels of drought based on certain criteria. A discussion of the indicators, also referred to as trigger points, used to determine levels of drought is found on pages 12 to 14 of the British Columbia Drought Response Plan.

The provincial response to drought is *organized around four successive levels of drought.* Each level of drought has certain activities associated with it in order to meet specific objectives and targets.

The levels of drought found if the British Columbia Drought Response Plan are reproduced below with a brief description.

TABLE 1

Level	Conditions	Description
1 (Green)	Normal Conditions	There is sufficient water to meet human and ecosystem needs
2 (Yellow)	Dry Conditions	First indications of a potential water supply problem
3 (Orange)	Very Dry Conditions	Potentially serious ecosystem or socio-economic impacts are possible
4 (Red)	Extremely Dry Conditions	Water supply insufficient to meet socio-economic and ecosystem needs.
Loss of Supply		Potential loss of community's potable or fire fighting water supply

Although Level 1 is not by definition, drought, the level is included because it plays a role in managing drought effectively and in keeping drought management costs low. Important actions can be implemented during drought preparedness (level 1- normal conditions) that may mitigate water supply issues as the dry period extends in time or is at frequent intervals.

3.2 Communication Objectives

The CP for LF is intended to address and mitigate drought/low flow impacts to the environment, economy and communities by focusing on meeting the following three objectives:

1) To promote water conservation and wise water use (best practices).
2) To provide information on water supply and drought and non-drought conditions.
3) To communicate the water conservation requirements necessary to meet drought conditions and the consequences of inaction.

Objective 1 – To promote water conservation and wise water use (best practices)

Water conservation needs to be practiced at all times by all residents and all sectors. The Nicola watershed is one of the driest regions of British Columbia and historically has experienced periodic drought. Long term predictions call for more frequent and more severe drought periods in years to come. The science of forecasting drought is imprecise and sometimes the warning signs come too late. Factors such as changes in land use over time, climate change and the drilling of new wells, may not result in an

immediate and visible impact on the water supply. Over the long term, the results may not be reversible. It is easy to forget that this watershed does not have an overabundance of water. Wise water use and ongoing water conservation even during normal conditions will mitigate drought impacts when drought will be present.

The need for all watershed residents to practice water conservation and use water wisely acknowledges the City of Merritt's need and right to grow and be sustained.

When precipitation, be it snow or rain, is minimal and unevenly distributed throughout the year, dams play a role in water conservation and in conserving water for future use. By storing water in this way, it is available when it is needed to meet objectives such as enhancing stream flow and safeguarding riparian vegetation. In times of drought, especially prolonged drought, storing water becomes that much more important. Good knowledge of storage supply and dam release can offset effects of drought in some areas.

The Nicola watershed has numerous small dams and two larger ones (at Nicola Lake and Mamit Lake). The former is operated by the province of British Columbia and the latter by the Lower Nicola Indian Band. All dams catch freshet flows for later release to streams and for irrigation.

Objective 2 – To provide a conduit for provincial and federal agencies to provide technical information about the water supply to the local community and information on local conditions back to senior agencies.

Better decisions are made and behaviours change when data and information are provided that justify changing how things are done. Understanding the issues and the consequences of inaction are keys to better decision-making.

Objective 3 – To communicate the water conservation requirements necessary to meet drought conditions and the potential consequences of not meeting these targets.

Measurable targets, as proposed in the DRP (see Table 2 below), form an important part of drought management. They indicate to water users how much their water use has to change in response to deteriorating flow conditions. In extreme situations of drought, water use may be severely curtailed by government-issued orders. It is also important to communicate what the population may experience if water is not conserved. In times of drought, this objective becomes very time sensitive, especially if the drought is a prolonged one.

TABLE 2

Level	Conditions	Target
1 (Green)	Normal Conditions	Drought preparedness
2 (Yellow)	Dry Conditions	Minimum 10% reduction in water use through voluntary conservation
3 (Orange)	Very Dry Conditions	Minimum additional 20% reduction in water use through voluntary conservation
4 (Red)	Extremely Dry Conditions	Maximum reduction
Loss of Supply		Ensure health and safety

3.3 Target Audience and Key Messages

The level of drought determines the audience that is targeted and the messages that will be imparted. Under **Normal Conditions**, the target audience is the general population, dairy farmers and rural residents with wells. For each of these audiences, the message is educational in nature and tailored to how they use water. Education about best practices, drought and drought indicators and where interested persons can learn more about these and related topics forms the basis of the messages. Under **Level 2 - Dry Conditions**, the target is the general population and the messages focus on action to be taken rather than messages that are educational in nature. Under **Level 3 – Very Dry** conditions, the target audience includes not only the general population, but the agricultural community, as well as well users and the water license holders along the Coldwater River. The messages focus on encouraging best management practices and tell people what they have to do. In **Level 4 – Extremely Dry,** the target group are the water license holders. Under these drought conditions, the target audience receives even stronger messages about implementing best management practices and hears about the possibility of government imposed water use restrictions.

Table 3 below summarizes the messages and the target audience for each level of drought.

TABLE 3

Level 1 – Normal significant water to meet human and ecological needs		Level 2 – Dry 10% reduction in water use	
MESSAGES	**TARGET AUDIENCE**	**MESSAGES**	**TARGET AUDIENCE**
- education about drought and drought indicators - best practices for all conditions - 'visit web site'	- general population - rural residents with wells	- best practices for this condition - "Follow water conservation now so that we have water later"	- general population
Level 3 – Very Dry 20% reduction of water use		Level 4 – Extremely Dry	
MESSAGES	**TARGET AUDIENCE**	**MESSAGES**	**TARGET AUDIENCE**
- best management practices - specifying required action - worded to motivate individuals to action for positive reasons	- general population - water license holders (agriculture community) - well users - all water license holders (phone call from MOE)	- best management practices - government may impose water use restrictions	- water license holders

3.4 Communication Strategies

Communication strategies are overall approaches to be used to achieve stated objectives. The strategies of the CP for LF are the strategies adopted by the provincial government, and those of local government, First Nations and local organizations.

In its Drought Response Plan, the provincial government has identified a number of strategies. Among them are the four drought response levels, early warning of potential for drought later in the year, information and data collection for dissemination and to predict drought conditions, and identifying communication roles for local authorities and local drought management teams[2].

[2] The DRP states that *local drought management teams may be established by local authorities (local government, water service providers, First Nations and other regional agencies with responsibilities for water) and/or other groups with a mandate to provide a coordinated regional response. (DRP, page 7*). At this time, a local drought management team has not been established in the Nicola watershed.

This project invited all levels of government to participate in meetings and to provide input and information in order to develop a comprehensive communication plan. The participation and response to a request for input and feedback was somewhat limited. Because not every level of government or water purveyor chose to respond, communication strategies described in this report are limited to those who did respond.

The provincial government has developed a comprehensive communications strategy. The Thompson-Nicola Regional District has not. Neither has the City of Merritt. The local Indian Bands and other water purveyors (Lower Nicola Water Works, Sunshine Valley-Miller Estates Water Society) did not provide any information and therefore it is not known what measures, if any, they plan to introduce and how they plan to communicate those in times of drought.

3.5 Methods, Tools and Vehicles

Communication activities are the methods, tools or vehicles that carry the message to the target audience. In the Nicola watershed, these will include the following:

- A web site that will carry information about water supply, drought indicators, links to other web sites for more detailed information, definitions of terms, drought level descriptions, etc.;
- Links to the above web site from other web sites: those of the City of Merritt, regional district, Indian bands, federal and provincial agencies/ministries;
- Large signs in strategic locations around the watershed showing the drought levels and the current situation. These signs will be similar to those currently used to indicate the forest fire danger class.;
- Radio interviews and community notices;
- Meeting with water license holders and water authorities (Level 2 – Dry);
- News Releases and newspaper articles;
- E-mails to target audiences;
- Phone calls from the BC Ministry of Natural Resource Operations (Level 3 - Very Dry);
- Flyers – handouts.

4.0 Communication Plan for Low Flows Partners

The partners in the CP for LF are the

1) Provincial government
2) City of Merritt and the Water Resource Advisory Committee
3) Nicola Stockbreeders' Association
4) Miller's Sunshine Valley Estates Society
5) Nicola Watershed Community Round Table

Their roles are defined through the communication activities they will be undertaking to respond to drought or the possibility of drought.

4.1 Communication Activities

The province's communication activities are detailed in the DRP and outlined below:

Level 1- Normal Conditions	No communication activity
Level 2 – Dry	*- Province-wide news release and targeted news releases in impacted geographic regions.* *- Issue information bulletins to local governments, water suppliers, First Nations, industry and stewardship groups, major licensees and other key stakeholders in impacted water basins and specific watersheds/streams.* *- Where appropriate, advise agricultural producers to take early action such as filling reservoirs and filling soil profiles with freshet water if available.* *- Use direct and indirect communication to request water licensees to voluntarily work together, conserve, share water and consider in-stream needs.*
Level 3 – Very Dry	*- Intensify communication efforts as appropriate based on current conditions; issue province-wide news release.* *- Continue to issue local media releases and/or targeted advertizing to advise of watering restrictions, encourage conservation, provide updates on local water supply status and forecast future conditions specific to the community.* *- Provide regular direct updates to local government, water suppliers, First Nations, industry and stewardship groups, major licensees and other key stakeholders in impacted geographic region.* *- Advise high volume water licensees (or all licensees on high risk streams) directly of conditions via mail and request that they implement voluntary conservation measures.*

Level 4 – Extremely Dry	*- Increase frequency of communication by all levels of government and water suppliers with all water users through media, advertising, internet, email updates and other channels.* *- Continue to issue information bulletins to local governments, water suppliers, First Nations, industry and stewardship groups, major licensees and other key stakeholders in impacted geographic regions.* *- Communicate regulatory controls under the Water Act, Fish Protection Act or other statutes to affected water licensees.*

The **City of Merritt's** and the **Water Resource Advisory Committee's** communication activities will be limited to:

- When deemed appropriate, advising all water users of conservation measures required;
- Communicating with appropriate regional agency as to the needs (projected minimum requirements) of the City of Merritt.

The **Nicola Stockbreeders' Association's** communication activities will include the following:

- Disseminating information to the membership the government agencies' drought warnings and information;
- Disseminating information to the membership about the Ministry of Agriculture's strategies for irrigation; and
- Calling a meeting to discuss water conservation plans for drought periods.

The **Miller's Sunshine Valley Estates Society** activities will include the following:

- Dissemination of information from the provincial government and other agencies to the members of the Society;
- Quarterly newsletter;
- E-mail and letters to members without e-mail with important information as necessary

Nicola Watershed Community Round Table's activities will include the following:

- Designing and managing a web site that will reflect the content of the Communication Plan for Low Flows and include, but not be limited to, links to other relevant and pertinent web sites; and keeping the web site up to date.
- Developing and distributing a brochure/booklet describing the communication plan.

- Developing and installing a sign in Merritt showing all the drought levels with a movable marker to indicate the drought condition (Normal, Dry, Very Dry or Extremely Dry) over time.
- Contacting appropriate provincial government ministries to request that a meeting be called with all water license holders and water purveyors when the level of drought is nearing Level 3.

Fisheries and Oceans Canada's communication activities will focus on communicating drought/stream flow conditions to the technical working groups: the Inter-Agency Drought Working Group, the Technical Drought Working Group and the Regional Cross-Government Drought Teams.

At this time, the **Thompson-Nicola Regional District** does not see a communication role for itself for drought.

APPENDIX A

List of individuals who attended one or more meetings:

John Anderson	Chair, Nicola Water Use Management Plan
Shawn Boven	Public Works Manager, City of Merritt
Neil Caine	Chairman, Miller's Sunshine Valley Estates Society
Joseph Calenda	Chief Administrative Officer, City of Merritt
Valerie Cameron	Regional Manager, Water Stewardship, BC Ministry of Natural Resource Operations
Alan Caverly	Ecosystems Biologist, BC Ministry of Natural Resource Operations
Lou Cooke	President, Nicola Stock Breeder's Association
Heather Fader	Human Resources Manager, Lower Nicola Indian Band
Judy Guichon-Mailloux	Steering Committee, Nicola Water Use Management Plan
Helen Jack	Secretary, Miller's Sunshine Valley Estates Society
Barb Jackson	Planner, Thomson-Nicola Regional District
Harold Joe	Steering Committee, Nicola Water Use Management Plan
Harry Kroeker	Councillor, City of Merritt
Jack Madryga	Steering Committee, Nicola Water Use Management Plan
Bruce McFarlane	BC Ministry of Natural Resource Operations
Randy Murray	Director, Area 'M', Thomson-Nicola Regional District and Vice-President, Lower Nicola Water Works
Stewart Murray	Steering Committee, Nicola Water Use Management Plan
Andrew Petersen	Ministry of Agriculture
Hyrum Peterson	Capital Works, Lower Nicola Indian Band
Ginny Prowal	Chair, Water Resources Advisory Committee, City of Merritt
Susan Roline	Mayor, City of Merritt
Katharine Shewchuk	Steering Committee, Nicola Water Use Management Plan
Christian St. Pierre	BC Ministry of Natural Resource Operations
Ruth Tolerton	City of Merritt
Dean Watts	Senior Habitat Biologist, Fisheries and Oceans Canada
Victor York	Chief, Lower Nicola Indian Band