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**City of Dawson Creek**

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February 9, 2011

Honourable Murray Coell  
BC Minister of Environment  
PO Box 9047,  
Stn Provincial Government  
Victoria, BC V8W 9E2



**Office of the Mayor**

Mike Bernier, Mayor

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ESD-WPS

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File No. 7-1-10

*MC*  
*→ MRN DMO w/ acknowledgment from MAC.*

**RE: Input to Policy Proposal on British Columbia's new Water Sustainability Act**

On behalf of Dawson Creek City Council, I wish to extend our appreciation for this initiative of the BC Ministry of Environment's Water and Sustainability Branch to modernize existing provincial Water Act legislation. Having reviewed various documents produced through this process, and further to earlier staff input on the Living Water Smart consultation, we are pleased now to comment on the recent Policy Proposal (Dec 2010).

We are in general support of the seven major policy thrusts outlined in the Proposal, and wish to offer specific recommendations as outlined in the attached report given our considerable experience in trying to promote stewardship of our Domestic watershed. Additional background is also appended on the City's Water Management Strategy approved in 2009. The challenges we face in monitoring water quality, flows and use in a rapidly changing upstream environment makes it imperative that appropriate water policy is adopted. When implemented in concert with Dawson Creek's watershed and water system management initiatives, we believe it is possible to greatly improve decision-making capabilities for cost-effective water use.

To frame our recommendations, we note significant changes in watershed function and water-use in recent years, including:

- significant shifts in Kiskatinaw flow regime over a forty year period since 1966 with an earlier low-flow period now being experienced affecting water withdrawals during the late-summer, and early fall period;
- consistently exceeding recommended guidelines for chlorination for treatment of total and dissolve organic carbons from unknown sources, and future potential increases from mountain pine forest loss from beetle-infestation;
- current and anticipated land-use intensity (gas, riparian logging, cattle grazing) in the lower sub-basins of our watershed point with potential for increases in turbidity from channel destabilization and bacterial input thus, a need for systematic integration of land-use management and water quality monitoring;

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- increasing water-use demand by both the City (126% increase in abstracted volumes has been experienced 1960-present) and an anticipated 16% increase in required water-use to 2017 based upon population growth (upwards of 0.089m<sup>3</sup>/sec annual use projection), with highest demand being in mid-summer as the system shifts to low-flow;
- increasing water allocations (permitted or approved) volume of water demand (0.19m<sup>3</sup>/sec) for the natural gas industry (e.g. for gas fracturing operations in tight shale formations), but lack of information on actual use nor required reporting of substantial extracted volumes from groundwater or surface storage infrastructure. Further to this, a note of caution has been stated by the Forest Practices Board, suggesting that based upon minimum low-flow indicators, there is potential for a 30% excess water demand from the Kiskatinaw River in a high-development, and water-use scenario.

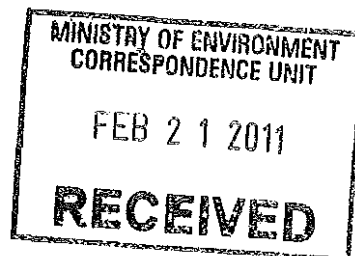
Given these significant changes and future demands of our water resources, we appreciate the opportunity to offer specific comments and additional recommendations in support of our particular needs. We welcome any enquiries your staff may have regarding this submission. Please contact Kevin Henderson, Director of Infrastructure & Sustainable Development [khenderson@dawsoncreek.ca](mailto:khenderson@dawsoncreek.ca), or Reg Whiten, Watershed Steward [rwhiten@dawsoncreek.ca](mailto:rwhiten@dawsoncreek.ca).

Thank you for your earliest acknowledgement to this response and we wish you well in moving forward with this important policy and legislative initiative.

Sincerely,



Mike Bernier,  
Mayor



## Comments on Policy Proposal – British Columbia’s New Water Sustainability Act

To highlight our priority concerns, we offer the following key comments and recommendations as we wish to see them applied to our particular area of interest in the Dawson Creek Domestic Water Supply area of the Kiskatinaw River watershed:

- **Policy 1: Protect Stream Health and Aquatic Environments**

Although baseline data on river flows has been recorded since 1966 on the Kiskatinaw River, little is known of the in-stream flow on the sub-basins including the Dawson Creek Domestic Watershed (attached), therefore we support:

- (i) establishment of guidelines, and eventually standards for maintaining instream flows with priority to community/domestic watersheds in BC based and concern for Domestic water licence allocations during times of water scarcity
- (ii) where existing or new stream-flow/aquatic data is available from government or industry operational processes (including EIA's, Fisheries research), such information should be integrated to both the Water Inventory Data Mgt System (WIDM), other government and public aquatic info data-bases (e.g. FISS/FIDQ, ECOCAT, Habitat Wizard);
- (iii) periodic reviews should be undertaken with major Water Licence holders to determine possible implications or restrictions for annual use, where significant risk to stream health and aquatic environments is clearly established and substantiated

- **Policy 2: Consider Water in Land-Use Decisions**

For several years, the City of Dawson Creek has been an active participant in all relevant public (provincial/federal) and private (regional district) land-use planning processes. In addition, it has made considerable investment in Water Management Planning and recently a Source Water Protection Plan. Although there is recognition in these Plans for its Domestic Water Supply areas, and wide recognition of domestic water supply/quality interests, there remains considerable effort to ensure these Plans are implemented and appropriately resourced. In that regard, we recommend that:

- (i) All resource plans in the Kiskatinaw River basin incorporate the Domestic Water supply area and six management sub-basins to ensure effective, integrated decision-making between provincial agencies and the City;
- (ii) Designate the City's Domestic Water Supply area as a Community Watershed under the Forest and Range Act;
- (iii) On an average 10 year basis, Watershed Assessments should be undertake to determine where there may be need for restoration or improved management;

- (iv) The Dawson Creek LRMP should be updated with appropriate targets and measures at sub-basin level (sedimentation, point-source contamination) in the same manner as set out in recent Sustainable Resource Management Plans (e.g. Peace-Moberly Tract) using such indices as Stream Crossing Quality, Equivalent Clearcut Areas;
- (v) All new resource tenures/permits should incorporate provisions for minimizing water-related impacts through improved referral templates to include essential assessment topics (effects on riparian, surface flow/quality protection);
- (vi) Develop cumulative effect thresholds in sub-basins with high land-use intensities using appropriate water quality/flow indicators (e.g. within Domestic Watersheds where sub-basin monitoring indicates potential for significant cumulative adverse downstream impacts to water quality/supply including social, ecological, and economic costs);

- **Policy 3: Regulate Groundwater Usage**

Groundwater supply and quality protection has been identified as an important consideration to ensure maintenance of the Kiskatinaw hydrological regime. Current industry-support research efforts (e.g. Montney Water project that aims to characterize deep groundwater sources and hydro-geology for development purposes) should be extended along with the City's sub-basin hydrometric study to ensure understanding of groundwater contribution to the Kiskatinaw river flow. In addition, we support:

- (i) regulation of groundwater usage, through Licences for large industrial withdrawals with regular reporting of both volumes and quality including information-sharing protocols with Domestic water purveyors like the City of Dawson Creek
- (ii) establishment of expanded network of provincial groundwater observation wells (e.g. with priority within the Kiskatinaw River Drainage Basin);
- (iii) local government consultation on Water Act Sect 8 water-use applications
- (iv) undertake research to develop increased understanding of groundwater flow contributions to surface flows.

- **Policy 4: Regulate During Scarcity**

Through its Water By-Laws, the City of Dawson Creek has instituted a four-tier Water Conservation restrictions. In addition, it has made and continues to invest in greater impoundment infrastructure (Bearhole Lake reservoir, and Water system storage) to reduce risk during low-flow periods. Other measures to improve water-use efficiencies through Building code and design standards, conservation incentives are also being advanced. To support this effort, we support timely regulation during drought periods to avoid conflicts over water allocations given significant limitations of hydrological data, unreported or unregulated water

withdrawals, undetermined climate change effects, and unknown stream flow/aquatic ecosystem requirements. To augment the City's efforts, we support:

- (i) improve water supply forecasting capabilities in domestic watersheds through establishment of telemetry-based hydrometric stations, and hydrometric modeling systems;
- (ii) expand micro-climate weather stations to improve water management forecasting.
- (iii) develop a Water Allocation Plan for priority areas such as the Dawson Creek Domestic Watershed, based on current approximate (known and anticipated) demand, and refined on a periodic (3 yr) basis through input of additional baseline, and actual water-use data.

Note: Water Allocations plans should be developed in "chronic problem areas" such as the Kiskatinaw River basin with priority order allocations for 1. Upper Kiskatinaw aquatic system/in-stream flow needs, 2. Dawson Creek licensed domestic rural/municipal water use, 3. upstream industrial needs, and then 4. Lower Kiskatinaw downstream ecosystem/use needs;

- **Policy 5: Improve Security, Water Use Efficiency, and Conservation**

As indicated above, the City of Dawson Creek is implementing various measures including (i) new residential and bulk-water pricing rates based upon current and anticipated treatment and delivery costs in the next few years, (ii) construction of waste-water re-use facility and industry partnership agreement to offset demand for potable water, and (iii) promotion of water-saving appliances and retrofits. Other steps such as monitoring of costs for various incremental treatment processes will be undertaken to further operational performance.

**Policy 5.1:** We advocate the use of various other instruments for improving water-use efficiency such as liability/assurance securities for water permit/licence holders to prevent and address environmental clean-up or restoration as a specific element of a modernized Water Act.

**Policy 5.2:** Beneficial management practices are essential tools to minimize upstream impacts on water quality and flows. We encourage BMP monitoring and research for all sectors (forestry, oil/gas, agriculture/range and urban development) to determine the incremental benefit of such practices. A program of economic incentives (policy 5.1) such as rebates is encouraged to promote new practices such as off-site watering and integrated riparian management/restoration for range operations. The City recognizes the importance of supporting agriculture industry and the use of agriculture water reserves where applicable in general to support production and long-term food security throughout the province.

- **Policy 6:**

At present, there are no protocols in place for the exchange of information on actual water use by various users. The City, however, does provide regular on-line reporting of treated volumes and bulk-water sales. We advocate for increased transparency of actual water-use by large surface and groundwater users, in particular volumes used by the gas industry through un-regulated water storage (burrow pits), as well as (Water Act) Section 8 permits and licences. This direction when combined with improved hydrometric data gathering will provide for improved decision-making to curtail water allocations such as undertaken by the Oil & Gas Commission during the 2010 drought period.

Additional requirements for reporting of off-site water quality during well-site development and reclamation is also recommended to support implementation of Source Water Protection Plan goals for drinking water e.g. sub-basin measurement of turbidity

- **Policy 7:**

Watershed governance is a fundamental consideration to foster accountability of all water users and regulators. Delegation of responsibilities for water sustainability planning to the regional level will ensure effective integration of locally-relevant information and needs. In that regard, we recommend that the provincial government:

- (i) Adopt an area-based approach, including expanded legal designation of "community watersheds", with priority for large-system municipal water purveyors with annual licences using improved governance regime i.e. Enhanced Provincial Management linked to established or developing Watershed Agency models (as per POLIS, May 2009);
- (ii) Apply the Policy Framework for priority designations and recognize the Dawson Creek Domestic Watershed as one such "chronic problem area", with significant known challenges and sensitivity to both water supply, and quality as articulated by existing management plans (i.e. Variable/Low Flows, Increasing Turbidity, Organics and Bacteria/Parasites);
- (iii) Support and strengthen current local initiatives such as the Dawson Creek Watershed program to reduce ongoing risks through systemic hydrological monitoring, identified areas requiring restoration or improved beneficial management practices/compliance monitoring, "state of watershed" reporting and improved water/land-use decision-making;

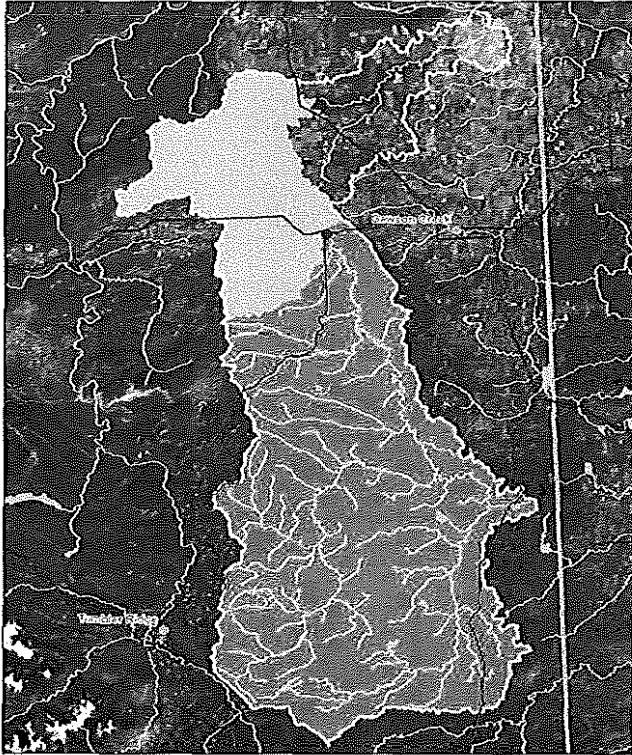
## Background: (A) Dawson Creek Watershed Program

Over the past of years, the City of Dawson Creek has been monitoring progress on development of a new Water Act for the Province. As a local government with a Water Licence that serves an urban (Dawson Creek and Pouce Coupe) and rural population (portion of rural Area D) of approximately 20,000, we have strong vested interest in the seven policy priorities identified in BC's Water Act Modernization process. Over the past twenty years, we have focused efforts on both stewardship of our Domestic Watershed (upper portion of the Kiskatinaw River watershed above the Arras Water intake), and in developing effective policies and programs for sustainable community water use and infrastructure development. Our comprehensive approach includes the following:

1. completion of Integrated Watershed Mgt (1991, 2003), Watershed Assessment (2003) and Source Water Protection Plans (2007)
  2. participation in creation and operation of the Peace River Watershed Council (2000-05)
  3. continual upgrades to water treatment and distribution system, including storage capacity of Bearhole Lake weir at headwaters (2009) and planned development of a waste water re-use facility (2010- in progress)
  4. establishment of a Watershed Steward position and program (2009)
  5. implementation of a watershed (hydrometric) research program (2010-2013) with plans for ongoing operation
  6. support for water/sewer utility measures and practices to promote conservation and sustainability in the City (Sustainability Action Plan, 2007; Water and Sewer By-laws approved 2010)
  7. input to various land-use management and regional plans, processes and regulatory regimes to foster stewardship and ensure environmental compliance
  8. water management best practices to encourage cost-effective innovation by all resource industries
  9. undertaking community education, research and extension on watershed stewardship with local organizations such as Dawson Creek Watershed Stewardship Society
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# Map of Dawson Creek Domestic Watershed

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(B) City of Dawson Creek Water Strategy



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## REPORT TO COUNCIL

**DATE:** August 25, 2009 **REPORT NO.:** ADM 09-195

**SUBMITTED BY:** Kevin Henderson **FILE NO.:** 4-1-2  
Director of Operations

**SUBJECT:** Water Strategy update

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### PURPOSE

To request Council adoption of a comprehensive water strategy including a new vision along with strategies and actions for water use within the City of Dawson Creek.

### SUMMARY/BACKGROUND

In the Fall of 2008, Council directed staff to proceed with the development of a water strategy to better align with the provincial 'Living Water Smart' program. The first step was to document water usage through all sectors (residential, commercial, Institutional, etc) in the City as a baseline from which to launch the strategy so that results could be measured. That initial step has been completed and is attached for review.

Highlights of the baseline water usage report include the following for Dawson Creek:

- Higher than Canadian average consumption per capita
- Consumption in all sectors increases as river flow rates decrease
- Unaccounted for water volumes are slightly higher than Canadian average
- The oil and gas Industry consumes a high volume of fresh water, typically for non-potable uses, and the demand for water is increasing rapidly.

Although the City of Dawson Creek average total consumption is at 584 litres/capita/day, the average consumption for single family dwellings is only 256 litres/day. There is a great opportunity to reduce the overall consumption by targeting strategies that are aimed at the industrial sector, such as effluent reuse in the oil and gas industry. The effluent reuse project alone could help the City of Dawson Creek achieve a minimum of 10% reduction in over all consumption.

A number of the strategies in the report are either already in progress or on the horizon for the near future. Staff is confident that the vision and strategies noted in the report are a positive step towards water conservation and the overall strategy.

The recommendations from the report are as follows:

**1. *Adopt a water vision for the City of Dawson Creek***

In line with new British Columbia Legislation, the City of Dawson Creek will meet 50% of its new water needs through conservation measures by 2020

- a. As a volume target, the City of Dawson Creek will reduce the current per capita daily consumption by 20% by year 2020, going from an average of 584 litres/capita/day to 467 litres/capita/day by 2020.

**2. *Adopt corporate measures to help meet the new vision.***

- Update current water metering system to wireless technology, in order to obtain more accurate and timely water consumption rates and better monitoring and prevention of leakage / loss. This will result in lower volumes of unaccounted for water in the future. Up to 10% leakage / loss can be due to faulty meters.
- Further trends towards xeriscaping in all public spaces, a trend which greatly reduces the demand for irrigation.
- Update current irrigation practices in order to ensure they are the most efficient practices possible.

**3. *Community involvement / engagement***

- Update water pricing structure
- Continue the development of an effluent reuse station for non-potable uses for industry.
- Expand on current community education initiatives. This will convince the community of the value of water conservation, and also provide them with the necessary tools to do so.
- Implement a strategy to increase the uptake of low flow fixtures in the home, such as a rebate program.
- Promote the usage of grey water reuse systems in new construction and rainwater capture in all homes.

**ALTERNATIVES**

Council could adopt the strategy as presented, Council could adopt the strategy in an amended form, or send it back to staff for more information.

**IMPLICATIONS**

- (1) Social**                    The adoption of a water strategy will put the City of Dawson Creek in company with water conscious communities like Vernon, Kelowna, the Capital Regional District, and the Sunshine Coast Regional District. The proposed vision aligns with the Province of British Columbia Living Water Smart plan.
- (2) Environmental**        A reduction in water consumption will help ensure supply for all stake holders in the Kiskatinaw Watershed, and provides for a healthier ecosystem.
- (3) Personnel**              N/A
- (4) Financial**                Conservation is the cheapest form of increasing capacity; less consumption will translate in to lower treatment costs and deferred capacity related infrastructure upgrades.

**GUIDING PRINCIPLES**

The Environment – We will demonstrate respect for the future of the earth by advocating for the preservation of clean air, clean water, and healthy land.

**STRATEGIC PRIORITIES**

The creation of a water strategy was one of the strategic priorities identified by Council in January of 2009. Staff is also committed to bring a complete overview of the system with a narrative on upgrades, studies, and source options discussed over the years. The narrative will be completed this fall.

**IMPLEMENTATION/COMMUNICATION**

If adopted by Council, staff will take the required actions to implement the new strategy and vision, including a communication plan through the City website and local advertising, to keep the public informed.

**RECOMMENDATION**

THAT Council adopt the Water Strategy and Vision, summarized in Section 10.0 Recommendations of the Water Consumption Baseline Report, (pages 28-29).

Respectfully submitted,

*ORIGINAL SIGNED BY*

Kevin Henderson, ASCT  
Director of Operations

KH/th

<i>APPROVED FOR AGENDA BY CAO/DCAO</i>
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