

**REPORT TO JUAN DE FUCA WATER DISTRIBUTION COMMISSION  
MEETING OF TUESDAY, 6 MARCH 2007**

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SUBJECT      IMPACTS TO WATER SERVICES FROM FALL 2006 STORMS

PURPOSE

This report provides information on the impacts caused by the 2006 fall storms to the CRD Water Services water distribution system.

BACKGROUND

From November through December 2006, the Capital Region area experienced a number of rain, wind and snow storms. Within this period there were two particular storms, the snow storm event of November 25, 2006 and the subsequent wind storm of December 14, 2006, that resulted in significant damage to the region. Specific to the Juan de Fuca distribution system were the loss of power and communications to key facilities and significantly restricted access within the Western Communities. Additional details are provided below.

Juan de Fuca Distribution System

**Snow Storm – November 25, 2006**

Snow, trees, communication and power lines downed by the snow blocked access to key water distribution facilities and sites in the District of Sooke, Juan de Fuca Electoral Area and the Municipalities of View Royal, Colwood, Langford and Metchosin.

The snow storm had an impact on the BC Hydro power supply to 34 domestic and fire pump stations and 14 reservoir sites used in the Juan de Fuca distribution system. The power failures started on November 26, 2006 and power was restored to all sites by December 1, 2006. The length of outages ranged from sites with no outage to sites that were without power for 91 hours.

The residents supplied by the Creekside Pump Station in Langford reported that they had no water.

**Wind Storm – December 14 – 15, 2006**

Trees, communication and power lines downed by the wind blocked access to key water distribution facilities and sites in the District of Sooke, Juan de Fuca Electoral Area and the Municipalities of View Royal, Colwood, Langford and Metchosin.

The wind storm had an impact on the BC Hydro power supply to 34 domestic and fire pump stations and 13 reservoir sites used in the Juan de Fuca distribution system. The power failures started on December 14, 2006 and power was restored to all sites by December 22, 2006. The length of outages ranged from sites with no outage to sites that were without power for 183 hours. The communications between the Helgesen reservoir and Sooke River Road pump station was not reinstated until December 27, 2006. During this period the Sooke system was run in manual control (on site Operator) rather than the normal automated control.

The residents supplied by the Creekside Pump Station and Bexhill Pump Station in Colwood did report that they had no water.

During both these events, remote communications was interrupted due to TELUS communication cables/data lines being damaged as well as loss of power to communication and control equipment. The sites with UPS and battery systems were able to communicate the failures and status before losing the UPS and battery power. The loss of communication resulted in loss of data, remote monitoring and automated control. A further impact was that some sites that had power restored could not communicate or operate normally due to power outages and/or damaged data lines at data transfer sites.

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The lengths of outages are based on the available recorded data in the SCADA system. These may not all be accurate due to the loss of power to the monitoring equipment and data transfer sites.

#### FINANCIAL IMPLICATIONS

##### Juan de Fuca Distribution System

To date CRD Water Services has spent approximately \$20,366 responding to the impacts of both the storms. The cost of response for the November 25, 2006 snow storm is \$6,816 and for the December 14 – 15, 2006 wind storm is \$13,550.

No funds were required for road clearing since the sites are accessed by public roads.

There is a possibility that the province, through the Provincial Emergency Program, may reimburse some of the initial response costs. A request for support was submitted at the end of January 2007.

#### CONCLUSIONS

Upon review of the impacts a number of conclusions have been reached as outlined below:

1. CRD Water Services needs assurances from power and communication utilities that water supply facilities are designated as priority sites.
2. CRD Water Services needs to review the requirements for emergency back up electrical power at all facilities that relies on electrical power to provide a service to customers and for communication and control.
3. CRD Water Services needs to review the requirements for back up control systems at pump stations and reservoirs that can work together independently of the rest of the system.

#### RECOMMENDATIONS

That the Juan de Fuca Water Distribution Commission:

1. Receive the staff report for information; and
2. That staff undertake to address the reviews listed in the conclusions of this report.

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