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Agenda Item 5
REPORT RWSC 2013-04

REPORT TO REGIONAL WATER SUPPLY COMMISSION
MEETING OF WEDNESDAY, APRIL 17, 2013

SUBJECT **DEPLOYMENT OF VIDEO SURVEILLANCE CAMERAS IN THE GREATER VICTORIA WATER SUPPLY AREA**

ISSUE

In response to recent security incidents in the Greater Victoria Water Supply Area (GVWSA), the deployment of video surveillance technology is being considered for incorporation into 2013 capital project plans.

BACKGROUND

The Sooke and Goldstream watersheds in the GVWSA have been closed to public access since at least the 1940s. Legal authority for the closure is currently maintained in CRD Bylaw 2804 – *Capital Regional District Water Supply Area Regulations*.

There have been ongoing minor trespass issues over the years. Trespass is mainly for recreational purposes, but also occasionally for other illegal activities such as marijuana grow operations and harvest of salal and other forest products.

Recently, three trespass incidents have increased the concern for security in the Water Supply Area:

1. April 20, 2012: Break-in and theft in the area of the Field Operations Centre, – fence cut, theft of generator, cut-off saw, power saw, water pump, emergency response binder. RCMP File No. 2012-5385.

2. October 31, 2012: Two fences cut to gain access to the Head Tank and Sooke Dam, attempts to gain access to Sooke Dam outbuildings.

3. January 14, 2013: Macdonald Main Gate cut open, vandalism of the plaque at Sooke Dam, a sign thrown into Sooke Lake Reservoir near the Intake Tower, sanitation facilities along Sooke Main pushed over. RCMP File No. 2013-1002.

After the April 2012 incident, a capital project was proposed for deployment of a video surveillance camera at the Sooke Lake Reservoir Intake Tower (Intake Tower) as well as at the Sooke Entrance Gate in 2014. Following the second and third incident, capital plans for video surveillance are proposed to be moved forward to 2013 and the scope of surveillance to be expanded to include additional cameras and locations in future years.

Comparison with Other Jurisdictions

Other large water utilities in the Pacific Northwest that have large, controlled watersheds (Vancouver, Seattle, Tacoma, Portland) have been using video surveillance to monitor their source water facilities for over 10 years. The video systems employed vary, but surveillance in water supply areas are similarly directed at entrances, dams, reservoirs, and other assets. Typically, about a dozen cameras are used in their water supply areas (with the total number of cameras used ranging up to 400 if their urban facilities are included).

Purpose of Video Surveillance

Deployment of GVWSA video surveillance is intended to meet several purposes:

1. **Provide alarms for security breaches**. Currently staff rely on building alarms or visible evidence of unauthorized entry or vandalism. Building alarms are effective, but provide no lead time for response and no evidence of the reason for alarm. Visible evidence of a security breach relies on staff and contractors reporting damage predominantly after the fact. Video surveillance would improve the response time in order to protect infrastructure or to apprehend unauthorized persons before they leave the area.

2. **Provide record of activities near critical infrastructure.** Critical infrastructure at or near the reservoir includes the Intake Tower, power facilities and Head Tank. Currently staff rely on visible evidence of any tampering or damage outside of buildings. Video surveillance would provide a short term video record of activity, should any concerns be later identified with infrastructure or water quality conditions. In addition, video surveillance would reveal if anything is thrown or falls into the Reservoir near the Intake Tower, which may not otherwise be detected. The potential to detect tampering is particularly important because the treatment plant only provides disinfection, not a complete treatment process which could remove both particulates and chemicals.

3. **Deter illegal activities through presence of surveillance equipment and signage**. The lack of public access and remote nature of the Water Supply Area currently provide the sense that no one is watching after hours and on weekends. The existence of surveillance equipment and well placed signage would create a deterrent to keep unauthorized persons from entering. A microphone/speaker and strobe light could also allow staff to visually and verbally deter unauthorized entrants.

4. **Increase convictions of individuals found trespassing, vandalizing or conducting other illegal acts**. Currently staff must apprehend trespassers in order to issue fines. Security breach alerts will provide improved response time to apprehend unauthorized entrants and a record of activities will provide opportunity to fine individuals for incidents not seen by staff. Increased convictions will result in further deterrence.

5. **Provide remote environmental monitoring.** Currently, weekly water watch photos are captured by CRD staff manually for uploading to the CRD public website. There is also currently no mechanism to remotely 'see' what is happening at the Dam/Spillway/Reservoir or Intake Tower. Video surveillance cameras can record and send snapshots for purposes of water watch without the necessity to visit the site. In addition, designated CRD staff could control cameras remotely and view the Sooke Lake Reservoir's south basin, booms, dam, and spillway from office or home desktops for operational or emergency purposes.

Priority and Timing

It is proposed to phase the installation of the video surveillance equipment to accommodate funding availability. The following locations are proposed for surveillance cameras in priority order:

<u>Phase One – 2013</u>

1. Sooke Lake Reservoir Intake Tower and Dam site

<u>Phase Two - 2014</u>

1. Head Tank facility and Head Tank gate/fence
2. Sooke Entrance to the GVWSA
3. Goldstream Entrance to the GVWSA and Field Operations Centre
4. One remote Sooke Lake watershed access gate prototype

Phase Three – 2015

1. Three additional remote Sooke Lake Reservoir watershed access gate locations (based on vulnerability and previous trespass activity)

Operations

Monitoring of the surveillance camera video data is planned to be integrated into existing operations and full-time equivalent positions. Monitoring will be conducted primarily through camera alarms that notify designated staff when motion has been detected in the surveillance area. The cause of the motion can then be viewed and appropriate action taken if unauthorized activity is detected. Only designated and authorized staff will have access to view video data and control camera views. Video data will be overwritten on a specified schedule unless it is saved for further use by select authorized staff. Written Standard Operating Procedures will ensure video data follows chain of custody rules to ensure any video evidence meets legal tests.

Project Budget and Funding

To provide coverage at key locations and ensure appropriate alarm notifications, multiple cameras will be installed over three phases. The following project budget estimates have been prepared:

	Phase 1 (2013)	**Phase 2 (2014)**	**Phase 3 (2015)**	**All Phases**
	Sooke Dam (3 cameras)	**Headtank, 2 Main Gates, 1 Remote Gate (6 cameras)**	**3 Remote Gates (3 cameras)**	**(12 cameras)**
Cameras	$15,000	$47,000	$22,000	**$84,000**
Connection/infrastructure/installation	$62,000 (includes $20K tower)	$86,000	$109,000	**$257,000**
Server for video	$23,000	-	-	**$23,000**
Total Capital Funds	**$100,000**	**$133,000**	**$131,000**	**$364,000**

The recent security concerns highlight a vulnerability that surveillance cameras can help prevent or mitigate; and that is appropriately funded from vulnerability assessment capital project funds.

Capital costs for Phase 1 (2013) can be funded with currently available unallocated vulnerability assessment capital funds ($115,000 available).

Phase 2 and 3 capital funds will be proposed in 2014 and 2015 capital plans and will be offset against approved 2014 capital funds for video cameras ($40,000).

ALTERNATIVES

1. That the Regional Water Supply Commission approve deployment of Phase 1 video surveillance in the Greater Victoria Water Supply Area in 2013 using funds from the vulnerability assessment capital budget.

2. That the Regional Water Supply Commission not approve deployment of Phase 1 video surveillance in the Greater Victoria Water Supply Area in 2013 using funds from the vulnerability assessment capital budget.

IMPLICATIONS

Social Implications

Greater Victoria Water Supply Area security breaches require an appropriate response to assure public confidence in CRD's intent to maintain a "closed" watershed. The public expects the CRD to detect, respond to and record unauthorized activity that may compromise water quality at critical infrastructure sites such as the Intake Tower. Video surveillance technology will provide the CRD the ability to monitor activity at the Intake Tower, Sooke Dam and other locations, to better meet security expectations.

A privacy impact statement is required prior to beginning new video surveillance as per the *Freedom of Information and Protection of Privacy Act and Regulations*. The impact statement ensures that appropriate confidentiality provisions and procedures are in place prior to deployment. Union representatives, employees and contractors may have confidentiality concerns. Surveillance will be implemented to avoid, where possible, the recording of authorized entrants working in the GVWSA.

Environmental Implications

Although not a primary purpose, video surveillance technology deployed at Sooke Dam could provide remote environmental monitoring of weather and reservoir conditions and provide the weekly Sooke Lake Reservoir snapshot posted to the CRD public website. Cameras at other gates could also be used to check weather or road conditions.

Economic Implications

The initial capital expenditure for the project is significant, but may be offset by a reduction in the repair of damaged infrastructure, reduced staff time investigating incidents in the field, and the costs of capturing the weekly water watch images.

Transmission of video data via cable or cell technology is estimated to be $200/month depending on the amount of video that is required to be downloaded and stored. Use of satellite technology required at some remote locations will represent higher data transmission costs. Data transmission as well as maintenance of the surveillance hardware and staff time to view and respond to surveillance footage will be accommodated within existing operating funds.

CONCLUSION

Deployment of video surveillance within the Greater Victoria Water Supply Area will increase security at critical infrastructure sites and provide warning of unauthorized entry into the GVWSA. Suitable capital funds are available and can be used to begin video surveillance implementation in 2013.

Dr. Richard Stanwick, Chief Medical Health Officer, Vancouver Island Health Authority, fully supports the use of video cameras to improve security and deter tampering within the Greater Victoria Water Supply Area.

RECOMMENDATION

That the Regional Water Supply Commission approve deployment of Phase 1 video surveillance in the Greater Victoria Water Supply Area in 2013 using funds from the vulnerability assessment capital budget.

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