

SUNSHINE COAST REGIONAL DISTRICT STAFF REPORT

TO: SCRD Board – October 13, 2022

AUTHOR: Remko Rosenboom, General Manager, Infrastructure Services

SUBJECT: 2022 DROUGHT RESPONSE UPDATE AND FINANCIAL IMPLICATIONS

RECOMMENDATION

THAT the report titled 2022 Drought Response Update and Financial Implications be received for information;

AND THAT the 2022 Emergency Operation Centre (EOC) - Drought Response be approved for expenditures up to \$550,000 and funded through Regional Water Operating Reserves;

AND THAT the funds approved for the installation and decommissioning of the siphon system at Edwards Lake in the amount of up to \$350,000 be rolled into the 2022-Drought Response and associated funding (\$350,000 +\$200,000=\$550,000 total);

AND THAT staff work with Emergency Management BC on the potential reimbursement of some of the expenditures associated with the 2022 EOC - Drought Response Activation through the BC Disaster Financial Assistance program;

AND FURTHER THAT the 2022-2026 Financial Plan be amended accordingly.

BACKGROUND

The Sunshine Coast Regional District (SCRD) activated an Emergency Operations Centre (EOC) on September 27, 2022, to ensure additional emergency planning can occur to secure water supply for 22,000 people on the Chapman Water System. With no significant rainfall in the forecast, our immediate concern is to ensure additional water supply is secured for residents, fire suppression and the Sechelt Hospital.

At the September 22, 2022 SCRD Board Meeting, the following motion was passed:

Edwards Lake
Siphon Installation **It was moved and seconded**

248/22 THAT the report titled Proposed Edwards Lake Siphon Installation be received for information;

AND THAT the SCRD Board seek approval from the shíshálh Nation to proceed with the installation of the Edwards Lake siphon system;

AND THAT the installation and decommissioning of a siphon system at Edwards Lake be approved in the amount of up to \$350,000 and funded through Regional Water operating reserves;

AND THAT the SCRD Board request emergency water provision from the Town of Gibsons;

AND THAT the SCRD Board and delegated authorities be authorized to enter into an agreement for 2022 emergency water supply with the Town of Gibsons;

AND FURTHER THAT the 2022-2026 Financial Plan Bylaw be amended accordingly.

The purpose of this report is to provide an update about work underway to secure drinking water for the community, update on the establishment of an EOC, and request an amendment to the already approved funding.

DISCUSSION

The EOC is undertaking a wide variety of activities of which several are focused on reducing the community demand for water, others are aimed at the development of emergency water supply sources. Some of these initiatives have financial implications, such as:

1. Development and installation of an emergency siphon system at Edwards and Chapman Lake

Chapman Lake and Edwards Lake, the SCRD's main sources of drinking water, are now at historic low levels. On October 3 and 4, 2022, the SCRD installed an emergency siphon system at Edwards Lake to access an additional water supply source to supplement the rapidly decreasing water levels in Chapman and Edwards Lake. This will allow for more water to be drawn from Edwards Lake, the SCRD's secondary reservoir after Chapman Lake, located in the Chapman Watershed. This siphon system is in addition to the emergency siphon system in use at Chapman Lake since the beginning of Stage 4 Water Conservation Regulations that began on August 31, 2022. The SCRD has received approval from the shíshálh Nation and permits from BC Parks and Ministry of Forests.

2. Reduction of the Environmental Flow Needs

The SCRD is also in discussion with the Provincial and Federal Governments around environmental flow needs (EFN). Currently, the SCRD releases water from Chapman Lake to Chapman Creek for both human consumption and for environmental flow. This environmental flow helps to support fish habitat and the creek's aquatic ecosystem. In accordance with our permit, the SCRD releases roughly 1.7 times more water for EFN than for human consumption. A reduction in this EFN from 200 liters per second to 160 liters per second would allow for more water to be available for community use and would further extend our water supply.

3. Emergency water supply from the Town of Gibsons

An agreement between the Town of Gibsons (Town) and the SCRD was put in place and the Town is now supplementing the Chapman Water System with about 1000m³ of water per day, approximately 12% of the current total demand. The SCRD will return the same amount of water it

receives to the Town at a later date. The SCRD will also compensate the Town for any operational expenditures that occurs related to this water supply.

4 Edwards Lake Siphon Phase 2- modifications

Staff are exploring potential modifications to the existing Edwards Lake siphon system to access additional water by relocating the siphon. Moving up to five siphons into the dam spillway will reduce the high point in the siphon and may allow access to more water. There is currently an additional approximate of 500,000 m³ of water authorized to be diverted that cannot be accessed with the current system. Staff are currently developing a plan to make these modifications and develop a plan to decommission these additional siphons before the water levels rise and/or winter conditions set in at the lake. The onset of those winter conditions could impact the functioning of these siphons in general and limit the amount of water that could be withdrawn from the lake through them.

5 Chapman Lake Siphon Phase 2- modifications

Similar to Edwards Lake, staff are also exploring the feasibility of the installation of additional siphons at Chapman Lake. This option is technically more complex and has several risks associated with it and is therefore currently not pursued. Depending on the development of the water supply situation this option could be reconsidered at some point in the future. This option would also require additional permitting from the Ministry of Forest and possibly BC Parks.

6 Trout Lake commissioning

The Trout Lake Water License allows 227 m³ water extraction per day. Vancouver Coastal Health requirements and the cost implications of commissioning and decommissioning the Trout Lake water system are under review. This water source can only provide water for the community between Francis Road-Redroofs Road intersection to Secret Cove. Using Trout Lake as a water source would provide between 2.5 and 3% of the total water supply for the community. It is possible that this option may require a boil water order for the area supplied by this source.

7 Interim Operations Church Road Well Field

Although most of the infrastructure is installed to connect the Church Road Well Field to the Chapman system, some essential components are not, including those related to the treatment of the water and the pumping of the water from the Water Treatment Plant to the Reed Road pump stations. Staff and contractors are exploring the options to install a temporary pump and treatment system, potentially run off a generator, to get between 27 and 50% of the maximum production of this well field (20-35 liter per second) into the Chapman Water System. If the technical feasibility of this option is confirmed, authorization for the use of this system would be required from Vancouver Coastal Health and the Ministry of Forests, Lands and Natural Resource Operations.

8. Chapman Lake Pumping

Staff are exploring further drawdown of Chapman Lake beyond what the existing siphon system can provide. Infrastructure required to pump water from Chapman Lake to the discharge location of the lake feeding Chapman Creek would need to be installed. This option requires submersible pumps, piping, and an on-site generator. Staff are developing engineering designs and permit applications to seek approval should this option be required. The installation and operation of this system could

cost in upwards of approximately \$550,000. This option is not considered to be implemented in the upcoming weeks.

9. Trucking in water

Staff are reviewing estimates for trucking water from other water systems into the Chapman Water System. Water may be accessed from Langdale, Soames and Granthams Landing, South Pender or North Pender water systems. Although this is not considered to be a logistically or financially efficient option to be implemented at a large scale, it may address some of the water demand for the Chapman system. This option is not considered to be implemented in the upcoming weeks and estimates are being solicited.

In Summary

At this time, the following options are currently being implemented and/or explored in the coming weeks:

Options

- Chapman and Edward Lake Siphons -*Implemented and in service
- Reduction of the Environmental Flow Needs
- Trout Lake commissioning
- Interim Operations Church Road Well Field
- Edwards Lake Siphon Phase 2- modifications

Along with the above listed potential expenditures associated with the EOC effort to increase the water supply to the Chapman Water System, the staffing of the EOC itself and its administrative and technical support staff will also result in increased costs.

Financial Implications

At the September 22, 2022 Regular Board meeting, staff requested \$350,000 from Regional Water operating reserves for the commissioning and decommissioning of a temporary siphon system at Edwards Lake. The actual costs for the installation of the temporary siphon system at Edwards Lake was lower than expected and given the extent of the current drought, additional measures are required and an EOC has been established. It is recommended that the already approved funds as well as an additional \$200,000 be amended to fund the 2022-Drought Response to allow for the additional measures to be implemented, bringing the total Budget of up to \$550,000, including the decommissioning of the base and potential modifications to the Edward Lake Siphon.

The Regional Water operating reserves have a current balance of \$909,237. This additional amount would reduce it to \$709,237. Staff are working with Emergency Management BC on the reimbursement of some of these costs which would offset the amount required through the reserves. As any recovery is unknown, the SCRD Board still must approve the unplanned expenditures. It also requires an amendment to the previous recommendation from September 22 and the 2022-2026 Financial Plan Bylaw.

Timeline for Next Steps

The last day of significant rainfall in the region was on July 6, 2022. With no significant rainfall in the forecast and no additional measures in place, staff were projecting water supply until October 15, 2022.

With the successful Edwards Lake siphon system activation on October 4, 2022, this system will provide additional water supply until the end of October. Should there be no significant rain fall, additional measures will need to be in place by October 25, 2022.

A detailed update will be provided at the October 27, 2022 Board meeting.

Communications

Staff are working on broad public communications to update the community about the emergency water supply infrastructure and importance of conserving water until there is significant rainfall. Properties with large and ongoing leaks have received shut off notices to encourage them to fix the leak as soon as possible. Staff are also working with properties trying to resolve leaks, reduced high water use and have created water conservation messaging for businesses.

STRATEGIC PLAN AND RELATED POLICIES

N/A

CONCLUSION

The financial implications associated with the activation of the 2022 EOC Drought Response are currently estimated at \$200,000 and proposed to be funded through Regional Water Service [370] Operating Reserves.

Staff will work with Emergency Management BC on the potential reimbursement of some of these expenditures through the BC Disaster Financial Assistance Program.

Reviewed by:			
Manager	X - S. Walkey X - S. Misiurak	CFO	X - T. Perreault
GM		Legislative	
CAO	X - D. McKinley	Other	