
To: Water Committee

From: Larina Lopez, Corporate Communications Division Manager, External Relations
Kris Etches, Project Communications Coordinator, External Relations

Date: October 9, 2020 Meeting Date: November 12, 2020

Subject: **Regional Water Conservation Campaign and Water Regulations Communications
2020 Results**

RECOMMENDATION

That the Water Committee receive for information the report dated October 9, 2020 titled “Regional Water Conservation Campaign and Water Regulations Communications 2020 Results”.

EXECUTIVE SUMMARY

Metro Vancouver undertakes several communications initiatives annually to ensure water resources are used efficiently throughout the region. Key initiatives in 2020 included communication of the region-wide watering regulations and a regional communications campaign — the *We Love Water* campaign — to increase awareness of Metro Vancouver’s water system and the need for residential water conservation. The media strategy for both initiatives included broad reach through television, radio, print, and outdoor advertising, as well as targeted and weather-triggered digital tactics. In total, broadcast and digital promotions delivered over 40.5 million impressions. Post-campaign results revealed a significant increase in campaign awareness, with a regional survey confirming that 50% of the campaign’s target audience recalled seeing campaign advertising. Despite the campaign’s success, in 2021 Metro Vancouver will re-examine water conservation communications, recognizing that regional decreases in per capita water use have plateaued and that sustained reductions in water demand and an even stronger culture of water conservation throughout the region could potentially defer the need for additional water supply projects.

PURPOSE

To update the Committee on regional communications to support the 2020 watering regulations and regional water conservation campaign.

BACKGROUND

Metro Vancouver undertakes several communications initiatives annually to ensure water resources are conserved and efficiently used throughout the region. Communication of the region-wide watering regulations supports the *Drinking Water Conservation Plan*, which helps manage the use of drinking water during periods of high demand and largely impacts the watering of lawns and landscapes. A regional communications campaign — the *We Love Water* campaign — increases awareness of Metro Vancouver’s water system and the need for residential water conservation, while providing residents with advice for using less water around their homes.

The *We Love Water* conservation campaign started in 2016, and has been adjusted yearly to reflect ongoing research and evaluation. This year, the campaign focused on conservation opportunities in

lawn and landscape watering, which increased alignment with communication of the regional watering regulations.

This report provides an overview and results of the 2020 regional water conservation campaign and water regulations communications, as identified in the 2020 Water Committee Work Plan.

WATER CONSERVATION COMMUNICATIONS

Communications Approach and Timing

Metro Vancouver's water conservation communications work to expand public awareness of the source and quality of Metro Vancouver's drinking water, and the importance of using it efficiently. Promotion of the regional watering regulations and the *We Love Water* conservation campaign incorporate consistent branding and imagery, and overlapping messaging.

Metro Vancouver promoted the regional watering regulations in advance of the May 1 implementation date and continued until the regulations' October 15 end date. Metro Vancouver collaborated with members to determine the most effective messaging and methods for consistently communicating the regulations in 2020.

Metro Vancouver promoted the regional *We Love Water* conservation campaign from May 19 to September 6, 2020. Promotions were primarily directed towards single-family dwelling residents, because they are most likely to engage in the outdoor water uses that contribute to higher seasonal water demand. During the spring, the campaign emphasized water source and system awareness, before incorporating outdoor water conservation messaging during the drier summer months. By first teaching residents about where their drinking water comes from, the people involved, and the amount of work it takes to reach their taps, the campaign was better equipped to encourage residents to reduce their outdoor water use.

Media Strategy

Metro Vancouver generated awareness about the watering regulations, the regional water system, and the importance of outdoor conservation through the following activities:

- Television commercials, conservation messaging, and sponsored weather updates on Global BC, as well as campaign content on the station's webpage and social media channels;
- Radio commercials, sponsored weather updates, and dry weather alerts from media personalities;
- Digital billboards on major traffic routes throughout Metro Vancouver;
- Targeted social media advertising and moderated discussion;
- YouTube video advertising, weather forecast-activated online banner advertising, and search engine advertising targeting users' interests (e.g., gardening, lawns, car washing) to encourage conservation;
- A media release and advertising in local, regional, and ethnic newspaper advertising to notify the public of watering regulations, prior to the May 1 activation date; and
- A mailed flyer on the regulations and water conservation, targeted towards single-family homes most likely to have lawns.

Examples of communications materials and promotions to support the watering regulations and *We Love Water* conservation campaign are included in the Attachment.

Metro Vancouver Member Engagement

Metro Vancouver made communication materials available to all GVWD members for display and distribution through localized opportunities. Items included social media content and co-branded and translated assets like posters, rack cards, and newspapers advertising templates, as well as digital billboards and transit shelter advertising. Members used these materials consistently and widely, and broad participation amplified public awareness of both the watering regulations and the conservation campaign.

Metro Vancouver worked with GVWD members to identify opportunities to supplement reduced municipal bylaw enforcement and education programs, and other in-person outreach opportunities impacted by the COVID-19 pandemic. A flyer detailing the regulations and conservation opportunities was delivered directly to 550,000 single-family homes throughout the region, and helped sustain the momentum of members' enforcement and education programs in the 2020 season.

Evaluation

The campaign was evaluated through various indicators and tracking methods described below.

Website Traffic

- The welovewater.ca website received 38,591 page views during the 3.5-month duration of the 2020 conservation campaign. This is consistent with 2019 levels, despite an increased emphasis on campaign reach over website visits.
- Metro Vancouver's lawn watering regulations [webpage](#) received an additional 10,131 page views during implementation of the regulations, from May 1 to October 15, 2020.

Television and Radio

- Global BC television and online channels featured the campaign in 2,580 spots, which were viewed 8.6 million times.
- PSAs ran on 14 additional television networks, targeted to the Metro Vancouver region. These spots aired a minimum of 1,500 times.
- The campaign spots featured on five radio stations, and were heard 7.8 million times.

Digital Media

- Social media (Facebook, Instagram, and Twitter) posts were viewed 8.2 million times, by over 600,000 Metro Vancouver residents.
- YouTube advertising was seen 3.2 million times. Thirty-nine percent of the ads that could be skipped were viewed to completion, exceeding industry benchmarks.
- Online banner ads were viewed 8.4 million times, with weather-triggered advertising reaching residents when water conservation was most relevant.

Print

- Advertising to raise awareness of the watering regulations featured in 22 local, regional, and ethnic newspapers, with additional advertising creative provided by Metro Vancouver placed by GVWD members.
- A flyer detailing the watering regulations and other outdoor conservation opportunities was delivered to 550,000 single-family homes throughout the region.

Out-of-Home

- Water conservation messaging featured on four digital billboards located on major traffic routes throughout Metro Vancouver.
- The billboard ads ran 200,000 times, and were seen 6.3 million times.

Earned Media

- Additional publicity beyond paid advertising included 33 online and print features and 48 radio and television features, earned as a result of Metro Vancouver and member efforts. This coverage would be valued at over \$303,000 if it were paid advertising.

Post-campaign Awareness

- When shown examples of campaign materials in a post-campaign regional survey, 44% of Metro Vancouver residents recalled previously seeing the advertising. Among the campaign's target audience of single-family homeowners, this awareness rose to 50%. This is a significant increase from 21% in 2019.

Plans for 2021 Regional Communications

Communication of the 2021 watering regulations and the *We Love Water* conservation campaign will continue to use creative assets developed in 2020. Metro Vancouver will produce additional materials to further align the two communications initiatives, continuing efforts begun in 2020 to merge creative themes and messaging into a single platform that emphasizes the importance of the watering regulations in conserving water and maintaining healthy lawns and landscapes with less water. Educating on the need for and the benefits of water conservation has always been the overarching objective of Metro Vancouver's *We Love Water* campaign communications. In 2021, this will be further strengthened with the objective to build and instill an even stronger culture of water conservation throughout the region, thereby achieving sustained reductions in water demand and potentially deferring the need for additional water supply projects.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

The 2020 budget for watering regulations communications and the regional water conservation campaign was \$270,000. These costs were included in the 2020 Water Services Communications Program Budget managed by the External Relations Department.

CONCLUSION

Metro Vancouver communicated the watering regulations prior to the May 1 activation date via advertising across the region and media engagement, and through a range of items distributed to GVWD members for public education and enforcement. In its fifth year, the regional water conservation campaign entered market in mid-May, with an emphasis on water resource education, before incorporating conservation messaging in the warmer and drier summer months. Campaign advertising appeared in a variety of news media, on digital billboards throughout the region, via social media and digital platforms, and through opportunities secured by GVWD members. A focus on expanding the reach of communications resulted in regional awareness of Metro Vancouver's water conservation communications increasing significantly, from 21% of the campaign's target audience in 2019 to 50% in 2020.

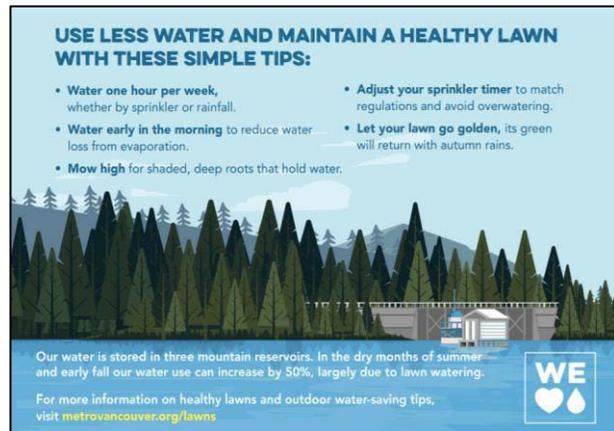
Beyond 2020, Metro Vancouver will align the watering regulations and *We Love Water* into a single communications campaign and increase efforts to instill an even stronger regional culture of water conservation and the opportunity to achieve sustained reductions in water usage and potentially defer the need for additional water supply projects.

Attachment

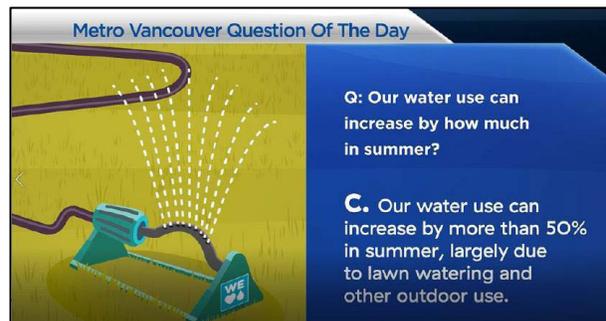
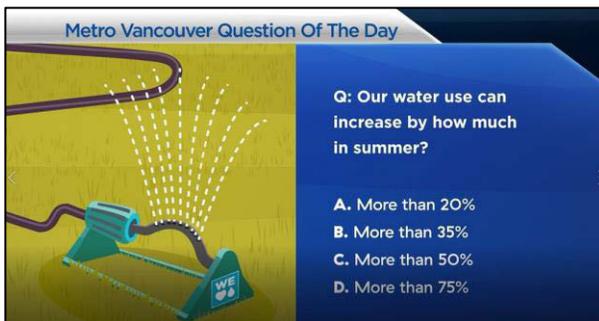
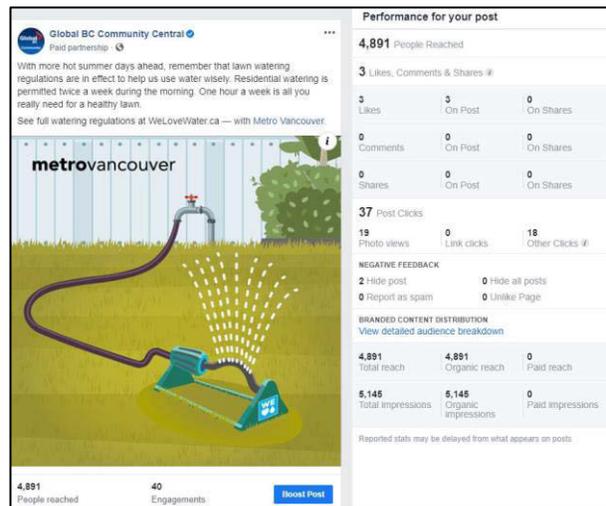
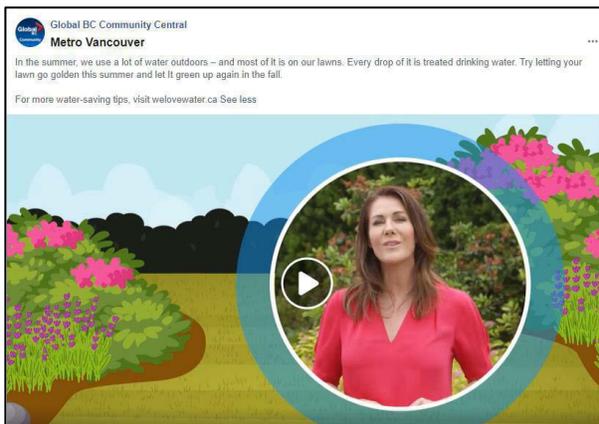
2020 Water Conservation Communications Materials

41796139

2020 Water Conservation Communications Materials



Flyer mailed to 550,000 single-family homes, providing information about the watering regulations and maintaining a healthy lawn with less water.



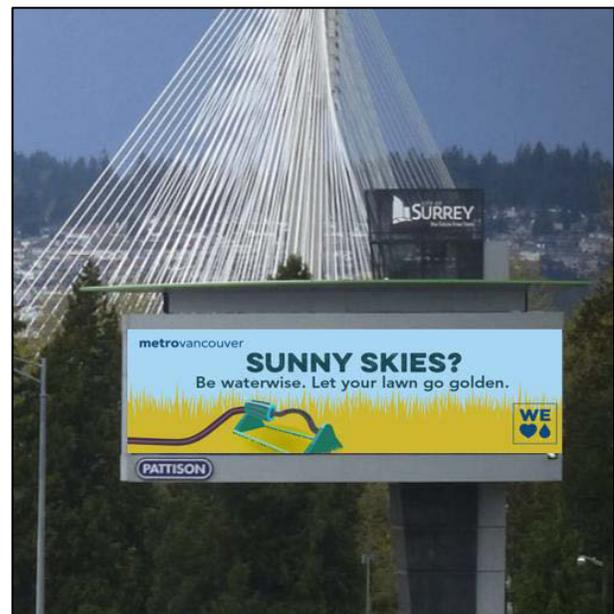
Examples of campaign spots featured on Global BC television and online channels.



Weather-triggered online banners, activated during periods of hot and dry weather.



Social media post encouraging conservation.



Digital billboard at Port Mann Bridge, one of four on major traffic routes throughout region.

To: Water Committee

From: Peter Marshall, Field Hydrologist, Environmental Management, Water Services
Jesse Montgomery, Division Manager, Environmental Management, Water Services

Date: October 26, 2020 Meeting Date: November 12, 2020

Subject: **Next Generation Snowpack Monitoring**

RECOMMENDATION

That the Water Committee receive for information the report dated October 26, 2020 titled “Next Generation Snowpack Monitoring”.

EXECUTIVE SUMMARY

The Next Generation Snowpack Monitoring project started in 2019 with a goal to investigate emerging remote sensing technologies for measuring snowpack in the water supply areas. Funding for this project is provided through the corporate Sustainability Innovation Fund at a total value of \$160,000 over 3 years.

New remote sensing technologies will greatly improve our understanding of the extent and variability of the snowpack in a changing climate. Given its importance to the regional water supply, having a complete and accurate understanding of snow conditions in the watersheds will assist Water Services to effectively manage future demands, promote water conservation, and develop plans to ensure the short and long-term resilience of the source water supply.

PURPOSE

This report is being brought forward to provide the Water Committee an update on the Next Generation Snowpack Monitoring project. Metro Vancouver’s External Relations has developed an educational video on the project that is ready for public release. Water Services staff felt that prior to the video’s release, it was a good opportunity to present the video and this update to the Water Committee.

BACKGROUND

The Next Generation Snowpack Monitoring project was approved through the Sustainability Innovation Fund project application process in 2019 as a multi-year study. Projects funded through the Sustainability Innovation Fund are regularly reported out on through the Climate Action Committee, however periodic updates are provided to the Water Committee at key milestones.

The primary goal of this project is to investigate emerging remote sensing technologies and look for ways to integrate them into the existing watershed snowpack monitoring program. These new tools and processes will improve our understanding of the mountain snowpack relative to the available water supply and climate change impacts.

PROJECT OBJECTIVES AND RESULTS

Snowpack is an important component of the drinking water supply for Metro Vancouver. In addition, snowpack plays a significant role in seasonal drought, wildfire danger, and other environmental factors. Snowpack data is valuable for monitoring the longer term effects of climate change on our water supply. If successful, this project will allow us to more effectively monitor the efforts of adapt to climate change and continue to manage our water supply in a sustainable manner.

Current Monitoring Methodology

Manual snowpack data has been collected at designated sites in Metro Vancouver's water supply areas since 1936. This historical data provides excellent information on snowpack conditions at these sites at certain times of the year, and shows change over time. However, manual measurements do not accurately capture snowpack distribution and variability throughout the watersheds. Measurements from only five sites are currently used to estimate snowpack conditions over an area greater than 500 square kilometres.

New Technologies

Through the course of this project, two primary remote sensing technologies have been identified as being effective and practical for our deep coastal snowpack: light detection and ranging (LiDAR), and satellite-based snow cover mapping.

LiDAR uses a high-resolution laser pulse to measure ranges to the Earth's surface. These light pulses generate precise, three-dimensional information about the shape of the Earth and its surface characteristics. This data is collected from a sensor on board a small airplane. Differencing LiDAR maps from two dates (one snow-free and one snow-covered) allows for the calculation of snow depth with high precision.

Satellites have been used for environmental monitoring since the early 1960s. Initially, snow covered area products were low resolution (several kilometres per pixel) and were used mainly to assist with daily weather forecasting. There have been dramatic improvements in satellite remote sensing technology and availability over the past several decades. It is now possible to operationally use satellite-derived snow covered area assessment products at a sub-watershed scale (10-30 metre pixel size). Part of this project has involved assessing the best products available for Metro Vancouver's water supply areas.

Results and Plans for the Future

For this project, four LiDAR surveys per season were conducted. These were done at the beginning of spring and were spaced out every 2 to 3 weeks. More work needs to be done to validate LiDAR data below the tree canopy, and to model the stored water in the snowpack using snow densities. That being said, LiDAR snow depth data shows tremendous promise.

Satellite imagery is freely available every 2 - 3 days; however, cloud-free days are required to analyze snow covered area. There are typically 4 - 8 usable image sets each season. Scripts to acquire and process satellite imagery to create snow covered area maps of our three water supply areas have been developed. These maps give an excellent overview of the snowpack extent, but do not specify

snowpack depth. It is, however, possible to use snow depth measurements from manual observations, automated weather station data, and LiDAR to estimate snow depth and stored water.

This work will continue over the next 2 - 3 seasons. The focus will be on refining LiDAR data collection and processing, data validation, and water storage equivalency modelling. The ultimate goal is to incorporate these new technologies into the operational snowpack monitoring program by the end of this project.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

Funding for this project is provided through the Sustainability Innovation Fund at a total value of \$160,000 over 3 years.

CONCLUSION

The Next Generation Snowpack Monitoring project has been successful in identifying appropriate remote sensing technologies for measuring snow in Metro Vancouver's water supply areas. Data collected from these new tools enhance the watershed snow monitoring program, and will help shape the future of this program. Additional work is required to make these new tools fully operational. In order to complete this work to its full potential, Water Services plans to apply for additional funding through the 2022 Sustainability Innovation Fund.

References

Video: [Metro Vancouver Next Generation Snowpack Monitoring](#)

40998139

To: Water Committee

From: Jesse Montgomery, Division Manager, Environmental Management, Water Services

Date: October 15, 2020 Meeting Date: November 12, 2020

Subject: **Watershed Fisheries Initiatives Annual Update**

RECOMMENDATION

That the Water Committee receive for information the report dated October 15, 2020, titled "Watershed Fisheries Initiatives Annual Update".

EXECUTIVE SUMMARY

Metro Vancouver manages and participates in fisheries initiatives both upstream and downstream of the dams that define the three water supply areas in the Capilano, Seymour and Coquitlam River Watersheds. A number of successful initiatives were completed over the past year, however the Capilano Fish Trap and Truck Program was postponed for the 2020 field season due to COVID-19. Metro Vancouver strives to ensure fisheries protection and enhancement initiatives are evaluated, planned and implemented in a manner which consistently meets the Capilano Seymour Joint Water Use Plan and the Board Strategic Plan goal to *Work with First Nations and fisheries agencies in supporting the restoration of fish populations in the watersheds while maintaining the delivery of clean, safe drinking water.*

PURPOSE

To provide the Committee with an annual update on fisheries initiatives and activities associated with the Capilano, Seymour and Coquitlam Watersheds.

BACKGROUND

To facilitate Metro Vancouver's mandate of providing high quality drinking water as well as to actively support local fisheries initiatives, Metro Vancouver works cooperatively with Fisheries and Oceans Canada (DFO), the Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD), BC Hydro, First Nations and stewardship groups. The initiatives described in this report are based on years of collaboration and rigorous scientific assessment.

Fisheries management and instream project works have concluded for the 2020 season. This report provides the Committee with an annual update as identified in the Committee's 2020 Work Plan.

WATERSHED FISHERIES INITIATIVES

Capilano Watershed

The Capilano River Hatchery is located downstream of Cleveland Dam and is operated by DFO. The hatchery annually transports a maximum of 7,500 adult coho salmon and all surplus steelhead trout (averaging 30 adults) upstream of the Capilano Reservoir to spawn. Metro Vancouver staff, have been actively capturing the out-migrating juvenile salmon and trout (smolts) since 2008 in an effort to improve fish survival rates past Cleveland Dam. Due to the onset of COVID-19 restrictions in mid-

March, the annual Capilano Fish Trap and Truck Program was cancelled for the 2020 field season. Additional control measures have been developed that will allow the program to resume in 2021.

The *Water Sustainability Act* order for the Capilano Seymour Joint Water Use Plan required a Fish Stranding Study in the Capilano River downstream of Cleveland Dam. This study was completed in early 2020 and identified some opportunities for improvement in dam operations that are being assessed by staff in coordination with FLNRORD. An effectiveness assessment of the Capilano Fish Trap and Truck Program is required in 2021 as the next component of the *Water Sustainability Act* order. Staff are currently developing a terms of reference which will be submitted to the province this fall. This study, to be conducted by staff and leading fisheries consultants, will ensure continual improvement opportunities for the program are identified.

Seymour Watershed

The Seymour Salmonid Society operates the Seymour River Hatchery immediately downstream of Seymour Falls Dam. Hatchery operations are funded by DFO, Metro Vancouver and community sponsors. In September 2020, the GVWD Board approved renewal of the Contribution Agreement with the Seymour Salmonid Society, which provides \$125,000 in annual core funding through December 31, 2023.

The Seymour River Hatchery transported 40,000 coho salmon juveniles (fry) upstream of Seymour Falls Dam as they do on an annual basis. These coho remain in the upper watershed until they are ready to out-migrate the following spring. When water supply conditions allow, the Bay 10 spillway gate on the Seymour Falls Dam is operated to facilitate the safe passage of these out-migrating smolts; this was the case again in 2020.

Following the May 2019 Board endorsement for DFO to transport returning salmon to habitat upstream of the Seymour Reservoir, the Seymour River Hatchery collected and released 49 coho adults in September, 2019. This will occur again in the fall of 2020.

The Seymour Salmonid Society has also led ongoing efforts to restore fish passage past the rockslide that blocked the river channel 13 kilometres downstream of the Seymour Falls Dam in December 2014. The rock-breaking operations were reactivated in 2020 to remove a large boulder which shifted following a large storm event in early February. While it has been confirmed through tagging in 2019 that fish are able to successfully migrate upstream past the rockslide, the continued movement of this large boulder is threatening to block passage once again. Further rock-breaking efforts are not anticipated beyond 2020, however fish movement and river flow monitoring will continue.

The *Water Sustainability Act* order for the Capilano Seymour Joint Water Use Plan required a Fish Stranding Study also be completed in the Seymour River downstream of Seymour Falls Dam. This study is currently underway and may identify some opportunities for improvement in dam operations to minimize impacts to downstream fish populations. A draft report is expected by the fisheries consultant early next year (2021).

Coquitlam Watershed

Metro Vancouver staff continue to participate in the Kwikwetlem Sockeye Restoration Program (KSRP), in collaboration with BC Hydro, Kwikwetlem First Nation, local and senior government agencies, as well as community stewardship groups. Only two adult sockeye returned to the Coquitlam Dam fish trap in 2020. The low adult return numbers are a disappointment given the ceremonial release of 5,000 sockeye smolts in 2017 and many years of ongoing dedication to restore this population in the Coquitlam River.

A variety of fisheries management options to restore this sockeye population, such as building a small hatchery at the base of the dam, are currently being assessed by BC Hydro and partner agencies. Metro Vancouver staff continue to work with the KSRP and support initiatives to restore the sockeye population including the operations of water supply lines to the fish trap and holding tank.

In early 2020, DFO, with support of Kwikwetlem First Nation and BC Hydro, sent a letter to Metro Vancouver requesting adult and juvenile coho releases into the Coquitlam Reservoir. The Board endorsed this request in July, 2020. The program will work towards the transport of up to 100 coho salmon adults and 40,000 juveniles upstream of Coquitlam Dam each year, beginning in October 2020. Reintroduction of coho salmon to habitat upstream of Coquitlam Dam presents negligible risk to Metro Vancouver drinking water quality, and would have many benefits including supporting KFN cultural restoration goals, strengthening Metro Vancouver's relationship with key partners and contributing to restoration of Pacific salmon populations.

ALTERNATIVES

This is an information report; no alternatives are presented.

FINANCIAL IMPLICATIONS

The initiatives described in this report have been funded from the Watershed and Environmental Management Program budget through partnerships with other organizations, and the provision of external funding.

CONCLUSION

Metro Vancouver continues to proactively participate in a variety of meaningful fisheries initiatives both upstream and downstream of the dams that define the three water supply areas in the Capilano, Seymour and Coquitlam River Watersheds. A key Metro Vancouver objective is to ensure fisheries protection and enhancement initiatives are evaluated, planned and implemented in a manner which consistently meets the District's mandate of providing consistently high quality drinking water supplies.

Attachment

2020 fisheries field work photos

40904513



Image 1: Electrofishing at Power Creek in the Capilano Watershed



Image 2: Fish Seine in the Lower Seymour Conservation Reserve – Seymour Salmonid Society