

Liu, Susan GCPE:EX

From: Zadravec, Don GCPE:EX
Sent: November 14, 2021 7:41 PM
To: Kristianson, Eric PREM:EX
Subject: Fwd: Initial Report - Flooding - Atmospheric River Event

See below

Don Zadravec
Deputy Minister
GCPE
778-584-1252
Sent from my iPhone

Begin forwarded message:

From: "Harris, Megan GCPE:EX" <Megan.Harris@gov.bc.ca>
Date: November 14, 2021 at 7:15:25 PM PST
To: "Smith, George PREM:EX" <George.Smith@gov.bc.ca>, "Hannah, Matt GCPE:EX" <Matt.Hannah@gov.bc.ca>, "Zadravec, Don GCPE:EX" <Don.Zadravec@gov.bc.ca>
Subject: Fwd: Initial Report - Flooding - Atmospheric River Event

FYI - A few evacuated properties in the Fraser valley and lots of flood warnings. Big impacts to coq and highway 1 near hope due to mudslides.

Expecting it to get a lot worse overnight and then start receding tomorrow night.

Begin forwarded message:

From: "Turner, Jordan GCPE:EX" <Jordan.Turner@gov.bc.ca>
Date: November 14, 2021 at 5:43:00 PM PST
To: "Harris, Megan GCPE:EX" <Megan.Harris@gov.bc.ca>
Cc: "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>, "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca>, "Venn, Tania GCPE:EX" <Tania.Venn@gov.bc.ca>, "Brandt, Alissa GCPE:EX" <Alissa.Brandt@gov.bc.ca>
Subject: Initial Report - Flooding - Atmospheric River Event

Hi all,

See initial flood report below, including the closure of both Hwy 1 and the Coq at Hope due to mudslides.

From what I've gathered from the River Forecast Centre reports, this should continue to worsen overnight before rainfall and river levels ease late Monday.

Thanks,

Jordan Turner
Communications Director | EMBC
Cell: (250) 896-1928

Begin forwarded message:

From: "EMBC PDM EMBC:EX" <EMBCPDM@gov.bc.ca>
Date: November 14, 2021 at 4:58:33 PM PST
To: "Owens, Jeff EMBC:EX" <Jeff.Owens@gov.bc.ca>, "Cunnings, Ian EMBC:EX" <Ian.Cunnings@gov.bc.ca>, "Adams, Janet EMBC:EX" <Janet.Adams@gov.bc.ca>, "Antwright, Matt EMBC:EX" <Matt.Antwright@gov.bc.ca>, "Bates, Stan EMBC:EX" <Stan.Bates@gov.bc.ca>, "Bennett, Ryland EMBC:EX" <Ryland.Bennett@gov.bc.ca>, "Birney, Tyler EMBC:EX" <Tyler.Birney@gov.bc.ca>, "Bosworth, Gemma EMBC:EX" <Gemma.Bosworth@gov.bc.ca>, "Brach, Pader W EMBC:EX" <Pader.Brach@gov.bc.ca>, "Brandson, Paul EMBC:EX" <Paul.Brandson@gov.bc.ca>, "Brownlee, Jay EMBC:EX" <Jay.Brownlee@gov.bc.ca>, "Caldwell, Martin EMBC:EX" <Martin.Caldwell@gov.bc.ca>, "Chandler, Alex EMBC:EX" <Alex.Chandler@gov.bc.ca>, "EMBC PECC Operations 1 EMBC:EX" <pecc.ops1@gov.bc.ca>, EMBC Social Media <EMBCCOMM@victoria1.gov.bc.ca>, Environment Canada Wx <'ec.msa-pacifique-wpm-pacific.ec@canada.ca'>, "Ewanyshyn, Ron EMBC:EX" <Ron.Ewanyshyn@gov.bc.ca>, "Fernandes, Ruth EMBC:EX" <Ruth.Fernandes@gov.bc.ca>, "Forge, Kathryn EMBC:EX" <Kathryn.Forge@gov.bc.ca>, "Giles, Andrew FLNR:EX" <Andrew.Giles@gov.bc.ca>, "Godlonton, Brian EMBC:EX" <Brian.Godlonton@gov.bc.ca>, "Harper, Aimee GCPE:EX" <Aimee.Harper@gov.bc.ca>, HEMBC Provincial Ops <amy.romanas@phsa.ca>, "Herie, Beth EMBC:EX" <Beth.Herie@gov.bc.ca>, "Hetschko, Ryan EMBC:EX" <Ryan.Hetschko@gov.bc.ca>, "CIEM Branch IRR:EX" <CIEMBranch@gov.bc.ca>, "Iwama, Julia EMBC:EX" <Julia.Iwama@gov.bc.ca>, "Lee, Mitchell EMBC:EX" <Mitchell.1.Lee@gov.bc.ca>, "Maley, Madeline L EMBC:EX" <Madeline.Maley@gov.bc.ca>, "Mathie, Colin EMBC:EX" <Colin.Mathie@gov.bc.ca>, "McCabe, Melissa EMBC:EX" <Melissa.McCabe@gov.bc.ca>, "McClintock, Carol EMBC:EX" <Carol.McClintock@gov.bc.ca>, "Morrison, Andrew EMBC:EX" <Andrew.Morrison@gov.bc.ca>, "O'Higgins-Wilson, Jane EMBC:EX" <Jane.OHigginsWilson@gov.bc.ca>, "Oliver, Chrissy EMBC:EX" <Chrissy.Oliver@gov.bc.ca>, "Peterson, Dave EMBC:EX" <Dave.Peterson@gov.bc.ca>, "HLTH MOC Duty Officer HLTH:EX" <hlth.dutyofficer@gov.bc.ca>, "Ralfs, Brendan R EMBC:EX" <Brendan.Ralfs@gov.bc.ca>, "Richards, Tara R EMBC:EX" <Tara.Richards@gov.bc.ca>, "Simpson, Farrah EMBC:EX" <Farrah.Simpson@gov.bc.ca>, "Singh, Gurdeep FLNR:EX" <Gurdeep.Singh@gov.bc.ca>, "Stanford, David FIN:EX" <David.Stanford@gov.bc.ca>, "Turner, Jordan GCPE:EX" <Jordan.Turner@gov.bc.ca>, "Walker, Melia EMBC:EX" <Melia.Walker@gov.bc.ca>, "Walshaw, Tim EMBC:EX" <Tim.Walshaw@gov.bc.ca>, "White, Robert EMBC:EX" <Robert.White@gov.bc.ca>, "Williams, Susan GCPE:EX" <Susan.Williams@gov.bc.ca>
Subject: Initial Report - Flooding - Atmospheric River Event

Initial Report

14 November, 2021 17:00 hrs

Heavy rainfall in the southwest has resulted in mudslides closing both the Trans-Canada and Coquihalla Highway near Hope.

Highway 11 is closed near the Sumas border due to flooding.

Flooding in Abbotsford has displaced people from 12 homes in the Clayburn Lane area. Emergency Support Services is responding to provide assistance.

Chilliwack, Hope, and Abbotsford have activated their Emergency Operations Centres to monitor flooding and provide assistance as necessary.

Further updates will be provided as information becomes available.

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Msg to Dist List 1, SWE.

Media:

<https://www.castanet.net/news/BC/351544/Rock-slide-closes-Highway-1-through-Fraser-Canyon-Sunday>

<https://bc.ctvnews.ca/flood-watches-issued-in-fraser-valley-fraser-canyon-amid-heavy-rain-melting-snow-1.5665962>

<https://www.cbc.ca/news/canada/british-columbia/coquihalla-closure-rainstorm-1.6248785>

Paul Brandson | Provincial Duty Manager

Emergency Management BC

Block A – Suite 200, 2261 Keating Cross Rd
Saanichton, BC CANADA V8M 2A5

Ph: 250-952-4278 Cell: 250-818-0666

24 Hour Emergency: 1-800-663-3456

Follow PreparedBC



Liu, Susan GCPE:EX

From: Zadravec, Don GCPE:EX
Sent: November 15, 2021 6:37 AM
To: Kristianson, Eric PREM:EX
Subject: Fwd: Update # 10 - Flooding - Atmospheric River Event - Multiple Regions

Don Zadravec
Deputy Minister
GCPE
778-584-1252
Sent from my iPhone

Begin forwarded message:

From: "Harris, Megan GCPE:EX" <Megan.Harris@gov.bc.ca>
Date: November 15, 2021 at 6:25:31 AM PST
To: "Hannah, Matt GCPE:EX" <Matt.Hannah@gov.bc.ca>, "Smith, George PREM:EX" <George.Smith@gov.bc.ca>, "Zadravec, Don GCPE:EX" <Don.Zadravec@gov.bc.ca>
Subject: Fwd: Update # 10 - Flooding - Atmospheric River Event - Multiple Regions

Here is a rundown of all updates. Most significant:

Of note - up to 900 people evacuated from Merritt. Likely entire community will need to be evacuated due to water treatment impacts.

Subject: Update # 10 - Flooding - Atmospheric River Event - Multiple Regions

Update # 10

City of Merritt – Central Region

- The water treatment plant is considered unsafe for personnel and will be locked up and un-occupied.
- As a result, there will be potentially no clean water or sewage treatment with the likelihood of evacuating the entire City of 7800 people.

Update # 9

City of Merritt – Central Region

- The City is at risk of losing their water treatment plant which would compromise the entire city utility infrastructure.

- Public works have been reassigned from other areas to focus on saving the plant.
- Swift water team was required to assist in evacuating one homeowner due to high, rushing water.
- This event will require ESS supports - intending to send some evacuees to Kamloops.

Update # 8

15 November, 2021 – 5:24 hrs

City of Merritt – Central Region

- Declared a SOLE due to flooding.
- Evacuation Order issued for properties South of Coldwater Avenue and East of Voght Street:

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Update # 7

15 November, 2021 – 3:03 hrs

Central Region

- A SOLE was declared for the Town of Princeton.

Central Region

15 November, 2021 – 2:41 hrs

Regional District of Okanagan-Similkameen

- Village of Coalmont intends to issue an Alert.
- The fire department from Coalmont is in Tulameen assisting with efforts.

Town of Princeton

- 3 Evacuation Orders issued for low-lying properties along the Tulameen River.
- Dike has breached. Estimated water level is 18 inches above dike.
- Downtown core is flooded, as well, as areas north and west of the community.
- Group lodging/comfort centres are being set up at Riverside Community Hall. Schools may be used, if out of room.
- SAR has been requested to assist with evacuations- swift water capability only.
- Boil water notice in effect.

City of Merritt

- Dike has breached while rain is still falling and water levels rising.
- Evacuating 800 to 900 residences.
- Group lodging/warming centres are being set up. Churches may be used, if out of room.

Southwest Region**Motor Vehicle Accident – Lougheed Highway (Ruby Creek, near Agassiz)**

- According to news media: 6-10 people trapped within vehicles due to mudslide.
- HUSAR TF#1 expected to be fully on site around 01:45 am.
- News link: <https://www.cbc.ca/news/canada/british-columbia/agassiz-bc-mudslides-highway-closure-1.6248999>

Update # 5**15 November, 2021 – 2:14 hrs****Central Region****City of Merritt**

- An Evacuation Order issued for all properties within the Coldwater River 200-year flood plain. An Alert was previously issued for the same area.

Update # 4**15 November, 2021 – 1:36 hrs****Southwest Region****Fraser Valley Regional District**

- An Evacuation Order issued for 53730 Bridal Falls Road (Camperland RV Resort & Cabins).
- An Evacuation Order issued for 4 properties on Auchenway Road in EA "E".

District of Kent

- SOLE declared due to flooding.
- An Evacuation Alert for residents south of 6500 block of Rockwell Drive.

Update # 3

15 November, 2021 – 0:58 hrs

Southwest Region

Fraser Valley Regional District

- SOLE declared due to flooding and mudslides.

City of Abbotsford

- An Evacuation Alert issued for Clayburn Area: Clayburn Village and surrounding area.
- An Evacuation Alert issued for Eagle Mountain Areas: Cranberry Court, Briarwood Place, Doneagle Place.
- An Evacuation Alert issued for Ten Oaks: Mount Blanchard Court, Mount Blanchard Drive and Old Clayburn Road.
- An Evacuation Alert issued for Sumas Prairie: Westside of Whatcom Road, East of Huntington Village, Southside of Vye Road.
- An Evacuation Alert issued for Straiton Areas: Dawson Road East of Sumas Mountain Road.

DGIR 213178 - Train Derailment (2 Cars) - Mile 80 Yale - SWE

- Derailment likely due to rain.
- No dangerous goods. Dry materials.
- No injuries or waterways impacted.
- Assessing situation.

Central Region

City of Merritt

- An Evacuation Alert issued for all properties within the Coldwater River 200-year flood plain. An Evacuation Order is expected to be issued later.

Regional District of Okanagan-Similkameen

- An Evacuation Order issued for 34 addresses in EA "H" due to flooding.

Highway Closures

- Highway 1 (Agassiz – Spences Bridge).
- Highway 3 (Sunshine Valley).
- Highway 5 (Hope – Merritt).
- Highway 7 (Maple Ridge – Hope).
- Highway 11 (US border – Vye Road, Abbotsford) .

Liu, Susan GCPE:EX

From: Zadravec, Don GCPE:EX
Sent: November 15, 2021 5:13 PM
To: Wanamaker, Lori PREM:EX; Kristianson, Eric PREM:EX
Subject: FW:s.15; s.22 - Mud Slide in Lillooet

See below

From: Turner, Jordan GCPE:EX <Jordan.Turner@gov.bc.ca>
Sent: November 15, 2021 5:09 PM
To: Smith, George PREM:EX <George.Smith@gov.bc.ca>; Harris, Megan GCPE:EX <Megan.Harris@gov.bc.ca>; Zadravec, Don GCPE:EX <Don.Zadravec@gov.bc.ca>
Cc: McAndrews, Caroline GCPE:EX <Caroline.McAndrews@gov.bc.ca>; Hannah, Matt GCPE:EX <Matt.Hannah@gov.bc.ca>; Brandt, Alissa GCPE:EX <Alissa.Brandt@gov.bc.ca>; Crebo, David GCPE:EX <David.Crebo@gov.bc.ca>; Haslam, David GCPE:EX <David.Haslam@gov.bc.ca>
Subject: FWs.15; s.22 - Mud Slide in Lillooet

s.15; s.22

From: Maartman, William PSSG:EX <William.Maartman@gov.bc.ca>
Sent: November 15, 2021 5:07 PM
To: Turner, Jordan GCPE:EX <Jordan.Turner@gov.bc.ca>; Brandt, Alissa GCPE:EX <Alissa.Brandt@gov.bc.ca>; Douglas, Andrew PSSG:EX <Andrew.Douglas@gov.bc.ca>; Godfrey, Samuel PSSG:EX <Samuel.Godfrey@gov.bc.ca>
Subject: FW:s.15; s.22 - Mud Slide in Lillooet

s.15;
s.22

From: Rideout, Wayne PSSG:EX <Wayne.Rideout@gov.bc.ca>
Sent: November 15, 2021 5:06 PM
To: Maartman, William PSSG:EX <William.Maartman@gov.bc.ca>
Cc: McAndrews, Caroline GCPE:EX <Caroline.McAndrews@gov.bc.ca>
Subject: Fwd:s.15; s.22 - Mud Slide in Lillooet

Attention

Wayne Rideout

Assistant Deputy Minister and Director of Police Services
Policing and Security Branch
Ministry of Public Safety and Solicitor General

Telephone: [250-387-1100](tel:250-387-1100)
Cellular: [250-508-1209](tel:250-508-1209)
Email: wayne.rideout@gov.bc.ca

Begin forwarded message:

From: "Stubbs, Eric" <Eric.Stubbs@rcmp-grc.gc.ca>
Date: November 15, 2021 at 5:03:37 PM PST
To: "Rideout, Wayne PSSG:EX" <Wayne.Rideout@gov.bc.ca>, "Lewis, Glen PSSG:EX" <Glen.Lewis@gov.bc.ca>, "Sims, Brian A PSSG:EX" <Brian.Sims@gov.bc.ca>, "Lymburner, Ward C PSSG:EX" <Ward.Lymburner@gov.bc.ca>
Subject: s.15; s.22 - Mud Slide in Lillooet

[EXTERNAL] This email came from an external source. Only open attachments or links that you are expecting from a known sender.

BN to follow but looks like s.15; s.22
s.15; s.22

Eric

A/Commr. Eric Stubbs
Criminal Operations Officer
"E" Division Core Policing
14200 Green Timbers Way
Mailstop #306
Surrey, BC V3T 6P3
Tel: 778-290-4820
Cell: 604-360-0930
Fax: 778-290-6108
eric.stubbs@rcmp-grc.gc.ca

Commissaire adjoint
Officier responsable des enquetes criminelles Services de police de base- Division E
arrêt postal no 306
14200 Green Timbers Way
Surrey (C.-B). V3T 6P3
Téléphone: 778-290-4820
Mobile: 604-360-0930
Télèc: 778-290-6108
eric.stubbs@rcmp-grc.gc.ca

From: Jollymore, Ashlee FLNR:EX
Sent: November 16, 2021 3:37 PM
To: Jollymore, Ashlee FLNR:EX
Subject: UPDATE - Flood Warning – Lower Nicola River, Coldwater River (MAINTAINED) | High Streamflow Advisory – Similkameen River, Tulameen River (DOWNGRADED) | UPDATED: 15:30 PM November 16, 2021

Importance: High

MAINTAINED – Flood Warning – Lower Nicola River, Coldwater River
DOWNGRADED – High Streamflow Advisory – Similkameen River, Tulameen River
UPDATED: 15:30 PM November 16, 2021

The River Forecast Centre is **maintaining Flood Warnings** for:

- **Lower Nicola River**
- **Coldwater River**

The River Forecast Centre is **downgrading Flood Warnings to High Streamflow Advisories** for:

- **Similkameen River**
- **Tulameen River and tributaries**

A significant atmospheric river made landfall across southern coastal regions of British Columbia Saturday into Monday, bringing observed rainfall amounts across the Coquihalla, upper Coldwater and Tulameen River watersheds of up to 250 mm of rain at high elevations. The warmth of this system meant that precipitation fell as rain at most all elevations. Snowmelt at low to mid elevations added to the incredible amount of rain that fell, augmenting the unprecedented flows recorded through this event. A drop to near normal temperatures on Monday, Nov 15th resulted in a shift from rain to snow for the region; such snowfall will taper off into Tuesday evening (Nov 16th). This shift resulted in the recession of streams within the Tulameen and Similkameen watersheds. However, many of the Water Survey of Canada gauges within the Coldwater and Nicola watersheds have been impacted by historic flows and are not reporting data; modeling as well as limited available data indicate the potential that flows remain high within both watersheds.

- Coldwater River at Merritt (08LG010) is at 2.459 m gauge height (114 m³/s) and is receding. The downstream Coldwater River near Brookmere (08LG048) gage is not currently returning data.
- Tulameen River at Princeton (Water Survey of Canada gauge 08NL024) is flowing at 259 m³/s (2-5 year return period) and is receding.
- Similkameen River at Hedley (08NL038) is flowing at 480 m³/s (2-5 year return period) and is receding.

The short-term forecast indicates near seasonal temperatures and limited precipitation that will facilitate continued recession of streams in the region.

The public is advised to stay clear of the fast-flowing rivers and potentially unstable riverbanks during the high-streamflow period.

The River Forecast Centre continues to monitor the conditions and will provide updates as conditions warrant.

BC River Forecast Centre

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

A **High Streamflow Advisory** means that river levels are rising or expected to rise rapidly, but that no major flooding is expected. Minor flooding in low-lying areas is possible.

A **Flood Watch** means that river levels are rising and will approach or may exceed bankfull. Flooding of areas adjacent to affected rivers may occur.

A **Flood Warning** means that river levels have exceeded bankfull or will exceed bankfull imminently, and that flooding of areas adjacent to the rivers affected will result.

Liu, Susan GCPE:EX

From: Nelson, Tiffany GCPE:EX <Tiffany.Nelson@gov.bc.ca>
Sent: November 15, 2021 3:46 PM
To: Harris, Megan GCPE:EX; McAndrews, Caroline GCPE:EX; Ferrier, Jeffrey GCPE:EX; Machell, Aileen GCPE:EX
Cc: Turner, Jordan GCPE:EX; Smith, George PREM:EX; Hannah, Matt GCPE:EX; Crebo, David GCPE:EX; Haslam, David GCPE:EX; Brandt, Alissa GCPE:EX; Aaron, Sage GCPE:EX; Zadravec, Don GCPE:EX
Subject: RE: UPDATE - Flood Warning – Sumas (NEW), Coquihalla River - Flood Watch – Sea-to-Sky, North Shore, Howe Sound, Fraser Valley, Fraser Canyon, Chilliwack River - High Streamflow Advisory – South Coast - UPDATE: 2:45PM November 15, 2021
Attachments: IN_Impact of Floods on Healthcare by Region_DRAFT.doc

Hi Megan – here is the IN we provided our MO on impacts of the floods/rain on health care by region. Aileen is doing a quick check with program on any updates to share.

On hospitals:

Merritt: Nicola Valley Hospital & Health Centre Emergency Department will be closing today.

- Individuals who require emergency care should call 9-1-1 or visit the emergency department at the Kelowna General Hospital or the Royal Inland Hospital in Kamloops.
- Anyone wishing to confirm their loved one's evacuated location can call: 1.877.442.2001.
- Interior Health will continue monitoring flood activity across the region. Evacuation planning includes supporting anyone who may be in isolation due to COVID-19 and we will ensure separate arrangements are made for anyone with confirmed or suspected COVID-19 to protect the public from potential exposure.

Saanich Peninsula *Diverted, not evacuated*

- Due to flooding all new admissions/ambulance are to be diverted to RJH
- Any COVID-19 positive patients are to be transferred to RJH (either SNE or ICU if needed).
- In addition all 911 calls during this timeframe are to be diverted to RJH as well
- Follow regular referral patterns but majority of acute medical patients should be taken to VGH
- By way of this communication, BC Patient Transfer Network and BC Ambulance Service are notified of this diversion and will support patient transport requirements according to protocols in place.

From: Harris, Megan GCPE:EX Megan.Harris@gov.bc.ca
Sent: November 15, 2021 3:31 PM
To: Nelson, Tiffany GCPE:EX Tiffany.Nelson@gov.bc.ca; McAndrews, Caroline GCPE:EX Caroline.McAndrews@gov.bc.ca; Ferrier, Jeffrey GCPE:EX Jeffrey.Ferrier@gov.bc.ca
Cc: Turner, Jordan GCPE:EX Jordan.Turner@gov.bc.ca; Smith, George PREM:EX George.Smith@gov.bc.ca; Hannah, Matt GCPE:EX Matt.Hannah@gov.bc.ca; Crebo, David GCPE:EX David.Crebo@gov.bc.ca; Haslam, David GCPE:EX David.Haslam@gov.bc.ca; Brandt, Alissa GCPE:EX <Alissa.Brandt@gov.bc.ca>; Aaron, Sage GCPE:EX <Sage.Aaron@gov.bc.ca>; Zadravec, Don GCPE:EX <Don.Zadravec@gov.bc.ca>
Subject: Re: UPDATE - Flood Warning – Sumas (NEW), Coquihalla River - Flood Watch – Sea-to-Sky, North Shore, Howe Sound, Fraser Valley, Fraser Canyon, Chilliwack River - High Streamflow Advisory – South Coast - UPDATE: 2:45PM November 15, 2021

Thank you Tiffany and Caroline.

From: "Nelson, Tiffany GCPE:EX" <Tiffany.Nelson@gov.bc.ca>
Date: Monday, November 15, 2021 at 3:27 PM
To: Caroline McAndrews <Caroline.McAndrews@gov.bc.ca>, "Harris, Megan GCPE:EX" <Megan.Harris@gov.bc.ca>, "Ferrier, Jeffrey GCPE:EX" <Jeffrey.Ferrier@gov.bc.ca>
Cc: Jordan Turner <Jordan.Turner@gov.bc.ca>, "Smith, George PREM:EX" <George.Smith@gov.bc.ca>, "Hannah, Matt GCPE:EX" <Matt.Hannah@gov.bc.ca>, "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>, "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca>, Alissa Brandt <Alissa.Brandt@gov.bc.ca>, "Aaron, Sage GCPE:EX" <Sage.Aaron@gov.bc.ca>, "Zadravec, Don GCPE:EX" <Don.Zadravec@gov.bc.ca>
Subject: RE: UPDATE - Flood Warning – Sumas (NEW), Coquihalla River - Flood Watch – Sea-to-Sky, North Shore, Howe Sound, Fraser Valley, Fraser Canyon, Chilliwack River - High Streamflow Advisory – South Coast - UPDATE: 2:45PM November 15, 2021

Hi Megan – we're checking on hospitals as well.

From: McAndrews, Caroline GCPE:EX <Caroline.McAndrews@gov.bc.ca>
Sent: November 15, 2021 3:23 PM
To: Harris, Megan GCPE:EX <Megan.Harris@gov.bc.ca>; Ferrier, Jeffrey GCPE:EX <Jeffrey.Ferrier@gov.bc.ca>
Cc: Turner, Jordan GCPE:EX <Jordan.Turner@gov.bc.ca>; Smith, George PREM:EX <George.Smith@gov.bc.ca>; Hannah, Matt GCPE:EX <Matt.Hannah@gov.bc.ca>; Crebo, David GCPE:EX <David.Crebo@gov.bc.ca>; Haslam, David GCPE:EX <David.Haslam@gov.bc.ca>; Brandt, Alissa GCPE:EX <Alissa.Brandt@gov.bc.ca>; Aaron, Sage GCPE:EX <Sage.Aaron@gov.bc.ca>; Zadravec, Don GCPE:EX <Don.Zadravec@gov.bc.ca>; Nelson, Tiffany GCPE:EX <Tiffany.Nelson@gov.bc.ca>
Subject: RE: UPDATE - Flood Warning – Sumas (NEW), Coquihalla River - Flood Watch – Sea-to-Sky, North Shore, Howe Sound, Fraser Valley, Fraser Canyon, Chilliwack River - High Streamflow Advisory – South Coast - UPDATE: 2:45PM November 15, 2021

checking

From: Harris, Megan GCPE:EX <Megan.Harris@gov.bc.ca>
Sent: November 15, 2021 3:09 PM
To: McAndrews, Caroline GCPE:EX <Caroline.McAndrews@gov.bc.ca>; Ferrier, Jeffrey GCPE:EX <Jeffrey.Ferrier@gov.bc.ca>
Cc: Turner, Jordan GCPE:EX <Jordan.Turner@gov.bc.ca>; Smith, George PREM:EX <George.Smith@gov.bc.ca>; Hannah, Matt GCPE:EX <Matt.Hannah@gov.bc.ca>; Crebo, David GCPE:EX <David.Crebo@gov.bc.ca>; Haslam, David GCPE:EX <David.Haslam@gov.bc.ca>; Brandt, Alissa GCPE:EX <Alissa.Brandt@gov.bc.ca>; Aaron, Sage GCPE:EX <Sage.Aaron@gov.bc.ca>; Zadravec, Don GCPE:EX <Don.Zadravec@gov.bc.ca>; Nelson, Tiffany GCPE:EX <Tiffany.Nelson@gov.bc.ca>
Subject: Re: UPDATE - Flood Warning – Sumas (NEW), Coquihalla River - Flood Watch – Sea-to-Sky, North Shore, Howe Sound, Fraser Valley, Fraser Canyon, Chilliwack River - High Streamflow Advisory – South Coast - UPDATE: 2:45PM November 15, 2021
Importance: High

Caroline/Jeff, can you gather these details for us as quickly as possible? We have an avail at 4 and should have these details for then.

Thanks,
Megan

From: Jordan Turner <Jordan.Turner@gov.bc.ca>
Date: Monday, November 15, 2021 at 3:06 PM

To: "Harris, Megan GCPE:EX" <Megan.Harris@gov.bc.ca>, "Smith, George PREM:EX" <George.Smith@gov.bc.ca>, "Hannah, Matt GCPE:EX" <Matt.Hannah@gov.bc.ca>, "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>, "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca>, Alissa Brandt <Alissa.Brandt@gov.bc.ca>, "Aaron, Sage GCPE:EX" <Sage.Aaron@gov.bc.ca>, "Zadravec, Don GCPE:EX" <Don.Zadravec@gov.bc.ca>

Subject: RE: UPDATE - Flood Warning – Sumas (NEW), Coquihalla River - Flood Watch – Sea-to-Sky, North Shore, Howe Sound, Fraser Valley, Fraser Canyon, Chilliwack River - High Streamflow Advisory – South Coast - UPDATE: 2:45PM November 15, 2021

It would be quicker to get that from health and PSSG (Caroline).

It's all of merit so any that are there.

From: Harris, Megan GCPE:EX <Megan.Harris@gov.bc.ca>

Sent: November 15, 2021 2:47 PM

To: Turner, Jordan GCPE:EX <Jordan.Turner@gov.bc.ca>; Smith, George PREM:EX <George.Smith@gov.bc.ca>; Hannah, Matt GCPE:EX <Matt.Hannah@gov.bc.ca>; Crebo, David GCPE:EX <David.Crebo@gov.bc.ca>; Haslam, David GCPE:EX <David.Haslam@gov.bc.ca>; Brandt, Alissa GCPE:EX <Alissa.Brandt@gov.bc.ca>; Aaron, Sage GCPE:EX <Sage.Aaron@gov.bc.ca>; Zadravec, Don GCPE:EX <Don.Zadravec@gov.bc.ca>

Subject: Re: UPDATE - Flood Warning – Sumas (NEW), Coquihalla River - Flood Watch – Sea-to-Sky, North Shore, Howe Sound, Fraser Valley, Fraser Canyon, Chilliwack River - High Streamflow Advisory – South Coast - UPDATE: 2:45PM November 15, 2021

Thank you Jordan. I should have asked this about Merritt as well:

Within the evac areas, how many hospitals? How many correctional facilities?

Megan

From: Jordan Turner <Jordan.Turner@gov.bc.ca>

Date: Monday, November 15, 2021 at 2:44 PM

To: "Harris, Megan GCPE:EX" <Megan.Harris@gov.bc.ca>, "Smith, George PREM:EX" <George.Smith@gov.bc.ca>, "Hannah, Matt GCPE:EX" <Matt.Hannah@gov.bc.ca>, "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>, "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca>, Alissa Brandt <Alissa.Brandt@gov.bc.ca>, "Aaron, Sage GCPE:EX" <Sage.Aaron@gov.bc.ca>, "Zadravec, Don GCPE:EX" <Don.Zadravec@gov.bc.ca>

Subject: RE: UPDATE - Flood Warning – Sumas (NEW), Coquihalla River - Flood Watch – Sea-to-Sky, North Shore, Howe Sound, Fraser Valley, Fraser Canyon, Chilliwack River - High Streamflow Advisory – South Coast - UPDATE: 2:45PM November 15, 2021

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From: Harris, Megan GCPE:EX <Megan.Harris@gov.bc.ca>

Sent: November 15, 2021 2:44 PM

To: Smith, George PREM:EX <George.Smith@gov.bc.ca>; Turner, Jordan GCPE:EX <Jordan.Turner@gov.bc.ca>; Hannah, Matt GCPE:EX <Matt.Hannah@gov.bc.ca>; Crebo, David GCPE:EX <David.Crebo@gov.bc.ca>; Haslam, David GCPE:EX

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Importance: High

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To: "Campbell, David FLNR:EX" <David.Campbell@gov.bc.ca>

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Flood Warning – Sumas (NEW), Coquihalla River

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High Streamflow Advisory – South Coast

UPDATE: 2:45PM November 15, 2021

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BC River Forecast Centre

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

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ADVICE TO MINISTER

**CONFIDENTIAL
GCPE-COVID ISSUE NOTE**

COVID-19 Communications, Ministry of Health
Date: November 15, 2021

Minister Responsible: Minister Adrian
Dix/Minister Mike Farnworth

IMPACT OF FLOODS/RAIN ON HEALTHCARE BY REGION

Summary

Hospitals in Evacuations Zone

Merritt

The Nicola Valley Hospital & Health Centre Emergency Department will be closing today.

- Individuals who require emergency care should call 9-1-1 or visit the emergency department at the Kelowna General Hospital or the Royal Inland Hospital in Kamloops.
- Anyone wishing to confirm their loved one's evacuated location can call: 1.877.442.2001.
- Interior Health will continue monitoring flood activity across the region. Evacuation planning includes supporting anyone who may be in isolation due to COVID-19 and we will ensure separate arrangements are made for anyone with confirmed or suspected COVID-19 to protect the public from potential exposure.

Saanich Peninsula *Diverted, not evacuated*

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- Any COVID-19 positive patients are to be transferred to RJH (either 5NE or ICU if needed).
- In addition all 911 calls during this timeframe are to be diverted to RJH as well
- Follow regular referral patterns but majority of acute medical patients should be taken to VGH
- By way of this communication, BC Patient Transfer Network and BC Ambulance Service are notified of this diversion and will support patient transport requirements according to protocols in place.

Water Advisory

- **Merritt (IHA):** there appears to be damage to sewer and water infrastructure and potential related evacuations.
- **Princeton (IHA):** Boil water notice in effect. Dike has breached and the downtown core is flooded.
- **Sechelt (VCH):** a number of sections of water mains in SCRD areas that have been washed out and loss of pressure for many affected residents. Some reservoirs have 1-4 hours of water left. VCH has asked SCRD to issue boil water notices in SCRD areas that have been affected by loss of water pressure. Much uncertainty over how widespread or how quick fixes will be. The SCRD is able to issue these boil water notices in region specific manner, with maps of affected areas.
- **Port Renfrew (VIHA)** to the list. The system headworks have been flooded due to the heavy rainfall experienced in the last 24 hours. Once the headworks return to normal, the system will be flushed and samples taken to ensure that the treated water is potable.

Other Healthcare Impacts

VCH

COVID

- **Texada testing clinic will be closed for a few days due to flooding.**
 - Testing for covid will be directed to the Powell River General Hospital ED and Texada residents will be able to get vaccinated for Covid at the Recreation Centre in Powell River.
- **Both River Rock Casino and the Italian Cultural Centre COVID clinics** will be closing with immediate effect due to power failure.
 - They hope to be able to reopen tomorrow. Citizens will be sent a cancellation notice but may call in to rebook or if they have questions about the notification they receive. It looks like
 - 614 appointments impacted at the Italian Cultural Centre (from around midday today to 6:45pm) and 146 at River Rock Casino (same hours).
- **St. Vincent's testing** site has been closed due to wind.
- **Richmond** testing site is now closed as well.

Health

- **Sechelt Hospital is currently on generator power.** All is currently working but we'll keep you posted.
- **Hospice in Richmond flooded**
 - The hospice in Richmond has been flooded. There are seven patients at the site and our team is currently planning to move the patients ASAP. At this point, two will be moving to the Palliative Care Unit at RH and the other five will be going to Fraserview (LTC) along with the hospice staff, so the staff and patients will stay together.

Fraser Health

COVID

- **COVID-19 Test Clinics Closures**
 - Maple Ridge testing clinic at CareLife/Laity (note: the Haney Place immunization clinic remains open)
 - Langley COVID-19 testing and immunization centre
 - Cancelled – to be rescheduled - 160 appointments in Langley between 8:50 am and 4:55pm today
 - Hope COVID-19 testing and immunization centre
 - Cancelled - be rescheduled - 29 bookings in Hope between 9:00am and 11:45am today

Northern Health

COVID/Health

The flooding is impacting the NH Connections (medical travel program) routes between the North & Lower Mainland.

Yesterday's PG-YVR had to turn back at Cache Creek, next bus out is scheduled for tomorrow. There is no coach on the other side, to return yet.

ADVICE TO MINISTER

VIHA

COVID/Health

- Saanich Peninsula Hospital is now on full diversion
- They will do social posts redirecting people in need of immediate emergency medical attention to 911 or RJH/VGH emergency departments.
- The community of Sooke on Vancouver Island is currently cut off due to flooding. Patients are being taken to the local medical centre and the unit chief has gone there to assist. There is one paramedic crew currently on duty and a community paramedic has also been activated to help as needed.

COVID - Significant flooding issue at Saanich Peninsula

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- In addition all 911 calls during this timeframe are to be diverted to RJH as well
- Follow regular referral patterns but majority of acute medical patients should be taken to VGH
- By way of this communication, BC Patient Transfer Network and BC Ambulance Service are notified of this diversion and will support patient transport requirements according to protocols in place.

Health

- *Cowichan Valley *Power outage corrected*
 - Power Outage at Health Unit at 121 Ingram Street (Power outage affecting most of Duncan)
 - Impact: Inability to provide clinic visits, cancellation of IV/Ambulatory clinic appoints. Limited ability to respond to new clinic referrals
 - Mitigation: Rescheduling to home visits where possible. Staff using hot spots, cell phones, battery laptops. Essential visit Operational Plan enacted.
- North Quadra UPCC – closed at 12:30 p.m. due to flooding
 - Impact: Clean Supply, Staff Room, 2 exam rooms, and collab centre affected. In person appointments are cancelled today; phone appointments are continuing
 - Mitigation: FMO onsite and assessing

FNHA

COVID – a number of First Nations COVID-19 Vaccine Clinics closed

- These Nations are all band governments of the Sto:lo people:
 - Shxwowhamel First Nation (Upper Fraser Valley region near Hope)
 - Peters First Nation (Area of Hope)
 - Skwah First Nation (Area of the City of Chilliwack)
 - Kwaw-kwaw-a-pilt (Upper Fraser Valley region near Chilliwack)

Interior Health

COVID/Health

- Merritt being evacuated, IB issued.
- Princeton has significant community flooding, but no health systems impacts at this time. No other IH communities with flood-related health system impacts.

Liu, Susan GCPE:EX

From: McAndrews, Caroline GCPE:EX <Caroline.McAndrews@gov.bc.ca>
Sent: November 15, 2021 3:49 PM
To: Nelson, Tiffany GCPE:EX; Harris, Megan GCPE:EX; Ferrier, Jeffrey GCPE:EX; Machell, Aileen GCPE:EX
Cc: Turner, Jordan GCPE:EX; Smith, George PREM:EX; Hannah, Matt GCPE:EX; Crebo, David GCPE:EX; Haslam, David GCPE:EX; Brandt, Alissa GCPE:EX; Aaron, Sage GCPE:EX; Zadravec, Don GCPE:EX
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Corrections update:
NO evacuations; other details below

- No evacuations of correctional centres.
- Virtual supervision of community corrections clients in Merritt in place through staff based in Kamloops.
- Wind causing phones issues at Okanagan Correctional Centre.
- Road access to Ford Mountain Correctional Centre may be compromised. Assessment is underway and contingency plans will be developed if necessary.
- Staffing scaled back at Abbotsford and Chilliwack Community Offices to ensure staff are not cut off from access to their homes.

From: Nelson, Tiffany GCPE:EX <Tiffany.Nelson@gov.bc.ca>
Sent: November 15, 2021 3:46 PM
To: Harris, Megan GCPE:EX <Megan.Harris@gov.bc.ca>; McAndrews, Caroline GCPE:EX <Caroline.McAndrews@gov.bc.ca>; Ferrier, Jeffrey GCPE:EX <Jeffrey.Ferrier@gov.bc.ca>; Machell, Aileen GCPE:EX <Aileen.Machell@gov.bc.ca>
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Hi Megan – here is the IN we provided our MO on impacts of the floods/rain on health care by region. Aileen is doing a quick check with program on any updates to share.

On hospitals:

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Sent: November 15, 2021 3:31 PM

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Thank you Tiffany and Caroline.

From: "Nelson, Tiffany GCPE:EX" Tiffany.Nelson@gov.bc.ca

Date: Monday, November 15, 2021 at 3:27 PM

To: Caroline McAndrews Caroline.McAndrews@gov.bc.ca, "Harris, Megan GCPE:EX" Megan.Harris@gov.bc.ca, "Ferrier, Jeffrey GCPE:EX" Jeffrey.Ferrier@gov.bc.ca

Cc: Jordan Turner Jordan.Turner@gov.bc.ca, "Smith, George PREM:EX" George.Smith@gov.bc.ca, "Hannah, Matt GCPE:EX" Matt.Hannah@gov.bc.ca, "Crebo, David GCPE:EX" David.Crebo@gov.bc.ca, "Haslam, David GCPE:EX" David.Haslam@gov.bc.ca, Alissa Brandt Alissa.Brandt@gov.bc.ca, "Aaron, Sage GCPE:EX" Sage.Aaron@gov.bc.ca, "Zadravec, Don GCPE:EX" Don.Zadravec@gov.bc.ca

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Hi Megan – we're checking on hospitals as well.

From: McAndrews, Caroline GCPE:EX Caroline.McAndrews@gov.bc.ca

Sent: November 15, 2021 3:23 PM

To: Harris, Megan GCPE:EX Megan.Harris@gov.bc.ca; Ferrier, Jeffrey GCPE:EX Jeffrey.Ferrier@gov.bc.ca

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Importance: High

Caroline/Jeff, can you gather these details for us as quickly as possible? We have an avail at 4 and should have these details for then.

Thanks,
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It would be quicker to get that from health and PSSG (Caroline).

It's all of merit so any that are there.

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Cc: Turner, Jordan GCPE:EX; Smith, George PREM:EX; Hannah, Matt GCPE:EX; Crebo, David GCPE:EX; Haslam, David GCPE:EX; Brandt, Alissa GCPE:EX; Aaron, Sage GCPE:EX; Zadravec, Don GCPE:EX
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Update from Interior Health: The Nicola Valley Hospital ER department remains operational as the town evacuates. Interior Health will know in 45 minutes the timing of the ER's closure and plans to issue an IB then with details. Patients continue to be evacuated.

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Sent: November 15, 2021 3:46 PM
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Hi Megan – here is the IN we provided our MO on impacts of the floods/rain on health care by region. Aileen is doing a quick check with program on any updates to share.

On hospitals:

Merritt: Nicola Valley Hospital & Health Centre Emergency Department will be closing today.

- Individuals who require emergency care should call 9-1-1 or visit the emergency department at the Kelowna General Hospital or the Royal Inland Hospital in Kamloops.
- Anyone wishing to confirm their loved one's evacuated location can call: 1.877.442.2001.
- Interior Health will continue monitoring flood activity across the region. Evacuation planning includes supporting anyone who may be in isolation due to COVID-19 and we will ensure separate arrangements are made for anyone with confirmed or suspected COVID-19 to protect the public from potential exposure.

Saanich Peninsula *Diverted, not evacuated*

- Due to flooding all new admissions/ambulance are to be diverted to RJH
- Any COVID-19 positive patients are to be transferred to RJH (either 5NE or ICU if needed).
- In addition all 911 calls during this timeframe are to be diverted to RJH as well
- Follow regular referral patterns but majority of acute medical patients should be taken to VGH
- By way of this communication, BC Patient Transfer Network and BC Ambulance Service are notified of this diversion and will support patient transport requirements according to protocols in place.

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Importance: High

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Thank you Jordan. I should have asked this about Merritt as well:

Within the evac areas, how many hospitals? How many correctional facilities?

Megan

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Date: Monday, November 15, 2021 at 2:44 PM

To: "Harris, Megan GCPE:EX" <Megan.Harris@gov.bc.ca>, "Smith, George PREM:EX" <George.Smith@gov.bc.ca>, "Hannah, Matt GCPE:EX" <Matt.Hannah@gov.bc.ca>, "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>, "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca>, Alissa Brandt

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Abbotsford is going evacuate Sumas shortly.

JT

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Importance: High

Update from RFC

From: "Campbell, David FLNR:EX" <David.Campbell@gov.bc.ca>

Date: Monday, November 15, 2021 at 2:41 PM

To: "Campbell, David FLNR:EX" <David.Campbell@gov.bc.ca>

Subject: UPDATE - Flood Warning – Sumas (NEW), Coquihalla River - Flood Watch – Sea-to-Sky, North Shore, Howe Sound, Fraser Valley, Fraser Canyon, Chilliwack River - High Streamflow Advisory – South Coast - UPDATE: 2:45PM November 15, 2021

Flood Warning – Sumas (NEW), Coquihalla River

Flood Watch – Sea-to-Sky, North Shore, Howe Sound, Fraser Valley, Fraser Canyon, Chilliwack River

High Streamflow Advisory – South Coast

UPDATE: 2:45PM November 15, 2021

The River Forecast Centre is **upgrading** or **maintaining** a **Flood Warning** for:

- **Sumas River and areas around the US Border (UPGRADED)**
- **Coquihalla River**

The River Forecast Centre is **maintaining** a **Flood Watch** for:

- **Sea-to-Sky**
- **Howe Sound**
- **North Shore Mountains**

- **Fraser Valley including surrounding tributaries**
- **Fraser Canyon tributaries, including tributaries around Hope**
- **Chilliwack River**

The River Forecast Centre is **maintaining a High Streamflow Advisory** for:

- **Sunshine Coast**
- **Metro Vancouver**

A significant atmospheric river has made landfall across southern coastal regions of British Columbia. Observed rainfall amounts since yesterday have been in the 100-140mm range through Howe Sound, North Shore Mountains, and Sunshine Coast; 90-160mm in the Fraser Valley – East, Fraser Canyon and areas around Hope and Harrison Lake.

Environment and Climate Change Canada have continued rainfall warnings in effect across the region. Rainfall is expected to taper off on Monday afternoon.

Rivers have risen rapidly from rainfall since yesterday. Current conditions include:

- Chilliwack River above Slesse Creek (08MH103) have reached 440 m³/s (between a 20-year and 50-year flow). Additional increases are possible through the day on Monday
- Chilliwack River at Vedder Crossing (08MH001) reached a high of approximately 490 m³/s overnight and has dropped through Monday morning. Additional rises are anticipated on Monday afternoon
- Coquihalla River above Alexandra Creek (08MF068) is flowing at approximately 550 m³/s (between a 10-year and 20-year flow) and has leveled over the past few hours. Additional rises are possible through the day on Monday
- Stawamus River at Highway 99 (08GA076) is flowing at 85 m³/s (between a 2-year and 5-year flow) and rising at approximately 15 m³/s per hour
- The Nooksack River at Cedarville (USGS gauge NRKW1) is currently at a record level of approximately 15 feet. The river has breached its banks and is anticipated to be spilling water into low-lying terrain around the Sumas River drainage

Rivers through the region are expected to remain high through Monday and may persist into the evening in areas. Lower reaches of rivers may reach peak levels later Monday or overnight. Low-lying areas and areas with poorer drainage will take longer to drain surface water.

The public is advised to stay clear of the fast-flowing rivers and potentially unstable riverbanks during the high-streamflow period.

Details of the COFFEE and CLEVER Model forecasts can be found at:

http://bcrfc.env.gov.bc.ca/fallfloods/map_coffee.html, and

http://bcrfc.env.gov.bc.ca/freshet/map_clever.html

The River Forecast Centre continues to monitor the conditions and will provide updates as conditions warrant.

BC River Forecast Centre

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

A **High Streamflow Advisory** means that river levels are rising or expected to rise rapidly, but that no major flooding is expected. Minor flooding in low-lying areas is possible.

A **Flood Watch** means that river levels are rising and will approach or may exceed bankfull. Flooding of areas adjacent to affected rivers may occur.

A **Flood Warning** means that river levels have exceeded bankfull or will exceed bankfull imminently, and that flooding of areas adjacent to the rivers affected will result.

Liu, Susan GCPE:EX

From: McAndrews, Caroline GCPE:EX <Caroline.McAndrews@gov.bc.ca>
Sent: November 15, 2021 3:55 PM
To: Nelson, Tiffany GCPE:EX; Harris, Megan GCPE:EX; Ferrier, Jeffrey GCPE:EX; Machell, Aileen GCPE:EX
Cc: Turner, Jordan GCPE:EX; Smith, George PREM:EX; Hannah, Matt GCPE:EX; Crebo, David GCPE:EX; Haslam, David GCPE:EX; Brandt, Alissa GCPE:EX; Aaron, Sage GCPE:EX; Zadravec, Don GCPE:EX
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One update: Road to Ford Mountain is in fact passable.

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Corrections update:
NO evacuations; other details below

- No evacuations of correctional centres.
- Virtual supervision of community corrections clients in Merritt in place through staff based in Kamloops.
- Wind causing phones issues at Okanagan Correctional Centre.
- Road access to Ford Mountain Correctional Centre may be compromised. Assessment is underway and contingency plans will be developed if necessary.
- Staffing scaled back at Abbotsford and Chilliwack Community Offices to ensure staff are not cut off from access to their homes.

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Date: Monday, November 15, 2021 at 2:44 PM

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Subject: RE: UPDATE - Flood Warning – Sumas (NEW), Coquihalla River - Flood Watch – Sea-to-Sky, North Shore, Howe Sound, Fraser Valley, Fraser Canyon, Chilliwack River - High Streamflow Advisory – South Coast - UPDATE: 2:45PM November 15, 2021

Abbotsford is going evacuate Sumas shortly.

JT

From: Harris, Megan GCPE:EX <Megan.Harris@gov.bc.ca>

Sent: November 15, 2021 2:44 PM

To: Smith, George PREM:EX <George.Smith@gov.bc.ca>; Turner, Jordan GCPE:EX <Jordan.Turner@gov.bc.ca>; Hannah, Matt GCPE:EX <Matt.Hannah@gov.bc.ca>; Crebo, David GCPE:EX <David.Crebo@gov.bc.ca>; Haslam, David GCPE:EX <David.Haslam@gov.bc.ca>; Brandt, Alissa GCPE:EX <Alissa.Brandt@gov.bc.ca>; Aaron, Sage GCPE:EX <Sage.Aaron@gov.bc.ca>; Zadravec, Don GCPE:EX <Don.Zadravec@gov.bc.ca>

Subject: FW: UPDATE - Flood Warning – Sumas (NEW), Coquihalla River - Flood Watch – Sea-to-Sky, North Shore, Howe Sound, Fraser Valley, Fraser Canyon, Chilliwack River - High Streamflow Advisory – South Coast - UPDATE: 2:45PM November 15, 2021

Importance: High

Update from RFC

From: "Campbell, David FLNR:EX" <David.Campbell@gov.bc.ca>

Date: Monday, November 15, 2021 at 2:41 PM

To: "Campbell, David FLNR:EX" <David.Campbell@gov.bc.ca>

Subject: UPDATE - Flood Warning – Sumas (NEW), Coquihalla River - Flood Watch – Sea-to-Sky, North Shore, Howe Sound, Fraser Valley, Fraser Canyon, Chilliwack River - High Streamflow Advisory – South Coast -
UPDATE: 2:45PM November 15, 2021

Flood Warning – Sumas (NEW), Coquihalla River
Flood Watch – Sea-to-Sky, North Shore, Howe Sound, Fraser Valley, Fraser Canyon, Chilliwack River
High Streamflow Advisory – South Coast
UPDATE: 2:45PM November 15, 2021

The River Forecast Centre is **upgrading** or **maintaining a Flood Warning** for:

- **Sumas River and areas around the US Border (UPGRADED)**
- **Coquihalla River**

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- **Sea-to-Sky**
- **Howe Sound**
- **North Shore Mountains**
- **Fraser Valley including surrounding tributaries**
- **Fraser Canyon tributaries, including tributaries around Hope**
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The River Forecast Centre is **maintaining a High Streamflow Advisory** for:

- **Sunshine Coast**
- **Metro Vancouver**

A significant atmospheric river has made landfall across southern coastal regions of British Columbia. Observed rainfall amounts since yesterday have been in the 100-140mm range through Howe Sound, North Shore Mountains, and Sunshine Coast; 90-160mm in the Fraser Valley – East, Fraser Canyon and areas around Hope and Harrison Lake.

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Rivers through the region are expected to remain high through Monday and may persist into the evening in areas. Lower reaches of rivers may reach peak levels later Monday or overnight. Low-lying areas and areas with poorer drainage will take longer to drain surface water.

The public is advised to stay clear of the fast-flowing rivers and potentially unstable riverbanks during the high-streamflow period.

Details of the COFFEE and CLEVER Model forecasts can be found at:

http://bcrfc.env.gov.bc.ca/fallfloods/map_coffee.html, and

http://bcrfc.env.gov.bc.ca/freshet/map_clever.html

The River Forecast Centre continues to monitor the conditions and will provide updates as conditions warrant.

BC River Forecast Centre

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

A **High Streamflow Advisory** means that river levels are rising or expected to rise rapidly, but that no major flooding is expected. Minor flooding in low-lying areas is possible.

A **Flood Watch** means that river levels are rising and will approach or may exceed bankfull. Flooding of areas adjacent to affected rivers may occur.

A **Flood Warning** means that river levels have exceeded bankfull or will exceed bankfull imminently, and that flooding of areas adjacent to the rivers affected will result.

Liu, Susan GCPE:EX

From: Machell, Aileen GCPE:EX <Aileen.Machell@gov.bc.ca>
Sent: November 15, 2021 4:04 PM
To: Harris, Megan GCPE:EX; Nelson, Tiffany GCPE:EX; McAndrews, Caroline GCPE:EX; Ferrier, Jeffrey GCPE:EX
Cc: Turner, Jordan GCPE:EX; Smith, George PREM:EX; Hannah, Matt GCPE:EX; Crebo, David GCPE:EX; Haslam, David GCPE:EX; Brandt, Alissa GCPE:EX; Aaron, Sage GCPE:EX; Zadravec, Don GCPE:EX
Subject: RE: UPDATE - Flood Warning – Sumas (NEW), Coquihalla River - Flood Watch – Sea-to-Sky, North Shore, Howe Sound, Fraser Valley, Fraser Canyon, Chilliwack River - High Streamflow Advisory – South Coast - UPDATE: 2:45PM November 15, 2021

5 patients are being evacuated. That's the total number of inpatients at the hospital.

From: Harris, Megan GCPE:EX <Megan.Harris@gov.bc.ca>
Sent: November 15, 2021 3:54 PM
To: Nelson, Tiffany GCPE:EX <Tiffany.Nelson@gov.bc.ca>; McAndrews, Caroline GCPE:EX <Caroline.McAndrews@gov.bc.ca>; Ferrier, Jeffrey GCPE:EX <Jeffrey.Ferrier@gov.bc.ca>; Machell, Aileen GCPE:EX <Aileen.Machell@gov.bc.ca>
Cc: Turner, Jordan GCPE:EX <Jordan.Turner@gov.bc.ca>; Smith, George PREM:EX <George.Smith@gov.bc.ca>; Hannah, Matt GCPE:EX <Matt.Hannah@gov.bc.ca>; Crebo, David GCPE:EX <David.Crebo@gov.bc.ca>; Haslam, David GCPE:EX <David.Haslam@gov.bc.ca>; Brandt, Alissa GCPE:EX <Alissa.Brandt@gov.bc.ca>; Aaron, Sage GCPE:EX <Sage.Aaron@gov.bc.ca>; Zadravec, Don GCPE:EX <Don.Zadravec@gov.bc.ca>
Subject: Re: UPDATE - Flood Warning – Sumas (NEW), Coquihalla River - Flood Watch – Sea-to-Sky, North Shore, Howe Sound, Fraser Valley, Fraser Canyon, Chilliwack River - High Streamflow Advisory – South Coast - UPDATE: 2:45PM November 15, 2021

Thank you Tiffany. So Nicola Valley Hospital patients were evacuated?

From: "Nelson, Tiffany GCPE:EX" <Tiffany.Nelson@gov.bc.ca>
Date: Monday, November 15, 2021 at 3:45 PM
To: "Harris, Megan GCPE:EX" <Megan.Harris@gov.bc.ca>, Caroline McAndrews <Caroline.McAndrews@gov.bc.ca>, "Ferrier, Jeffrey GCPE:EX" <Jeffrey.Ferrier@gov.bc.ca>, "Machell, Aileen GCPE:EX" <Aileen.Machell@gov.bc.ca>
Cc: Jordan Turner <Jordan.Turner@gov.bc.ca>, "Smith, George PREM:EX" <George.Smith@gov.bc.ca>, "Hannah, Matt GCPE:EX" <Matt.Hannah@gov.bc.ca>, "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>, "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca>, Alissa Brandt <Alissa.Brandt@gov.bc.ca>, "Aaron, Sage GCPE:EX" <Sage.Aaron@gov.bc.ca>, "Zadravec, Don GCPE:EX" <Don.Zadravec@gov.bc.ca>
Subject: RE: UPDATE - Flood Warning – Sumas (NEW), Coquihalla River - Flood Watch – Sea-to-Sky, North Shore, Howe Sound, Fraser Valley, Fraser Canyon, Chilliwack River - High Streamflow Advisory – South Coast - UPDATE: 2:45PM November 15, 2021

Hi Megan – here is the IN we provided our MO on impacts of the floods/rain on health care by region. Aileen is doing a quick check with program on any updates to share.

On hospitals:

Merritt: Nicola Valley Hospital & Health Centre Emergency Department will be closing today.

- Individuals who require emergency care should call 9-1-1 or visit the emergency department at the Kelowna General Hospital or the Royal Inland Hospital in Kamloops.
- Anyone wishing to confirm their loved one's evacuated location can call: 1.877.442.2001.
- Interior Health will continue monitoring flood activity across the region. Evacuation planning includes supporting anyone who may be in isolation due to COVID-19 and we will ensure separate arrangements are made for anyone with confirmed or suspected COVID-19 to protect the public from potential exposure.

Saanich Peninsula *Diverted, not evacuated*

- Due to flooding all new admissions/ambulance are to be diverted to RJH
- Any COVID-19 positive patients are to be transferred to RJH (either 5NE or ICU if needed).
- In addition all 911 calls during this timeframe are to be diverted to RJH as well
- Follow regular referral patterns but majority of acute medical patients should be taken to VGH
- By way of this communication, BC Patient Transfer Network and BC Ambulance Service are notified of this diversion and will support patient transport requirements according to protocols in place.

From: Harris, Megan GCPE:EX Megan.Harris@gov.bc.ca

Sent: November 15, 2021 3:31 PM

To: Nelson, Tiffany GCPE:EX Tiffany.Nelson@gov.bc.ca; McAndrews, Caroline GCPE:EX Caroline.McAndrews@gov.bc.ca; Ferrier, Jeffrey GCPE:EX Jeffrey.Ferrier@gov.bc.ca

Cc: Turner, Jordan GCPE:EX Jordan.Turner@gov.bc.ca; Smith, George PREM:EX George.Smith@gov.bc.ca; Hannah, Matt GCPE:EX Matt.Hannah@gov.bc.ca; Crebo, David GCPE:EX David.Crebo@gov.bc.ca; Haslam, David GCPE:EX David.Haslam@gov.bc.ca; Brandt, Alissa GCPE:EX Alissa.Brandt@gov.bc.ca; Aaron, Sage GCPE:EX Sage.Aaron@gov.bc.ca; Zadravec, Don GCPE:EX Don.Zadravec@gov.bc.ca

Subject: Re: UPDATE - Flood Warning – Sumas (NEW), Coquihalla River - Flood Watch – Sea-to-Sky, North Shore, Howe Sound, Fraser Valley, Fraser Canyon, Chilliwack River - High Streamflow Advisory – South Coast - UPDATE: 2:45PM November 15, 2021

Thank you Tiffany and Caroline.

From: "Nelson, Tiffany GCPE:EX" <Tiffany.Nelson@gov.bc.ca>

Date: Monday, November 15, 2021 at 3:27 PM

To: Caroline McAndrews <Caroline.McAndrews@gov.bc.ca>, "Harris, Megan GCPE:EX" <Megan.Harris@gov.bc.ca>, "Ferrier, Jeffrey GCPE:EX" <Jeffrey.Ferrier@gov.bc.ca>

Cc: Jordan Turner <Jordan.Turner@gov.bc.ca>, "Smith, George PREM:EX" <George.Smith@gov.bc.ca>, "Hannah, Matt GCPE:EX" <Matt.Hannah@gov.bc.ca>, "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>, "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca>, Alissa Brandt <Alissa.Brandt@gov.bc.ca>, "Aaron, Sage GCPE:EX" <Sage.Aaron@gov.bc.ca>, "Zadravec, Don GCPE:EX" <Don.Zadravec@gov.bc.ca>

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Hi Megan – we're checking on hospitals as well.

From: McAndrews, Caroline GCPE:EX <Caroline.McAndrews@gov.bc.ca>

Sent: November 15, 2021 3:23 PM

To: Harris, Megan GCPE:EX <Megan.Harris@gov.bc.ca>; Ferrier, Jeffrey GCPE:EX <Jeffrey.Ferrier@gov.bc.ca>

Cc: Turner, Jordan GCPE:EX <Jordan.Turner@gov.bc.ca>; Smith, George PREM:EX <George.Smith@gov.bc.ca>; Hannah, Matt GCPE:EX <Matt.Hannah@gov.bc.ca>; Crebo, David GCPE:EX <David.Crebo@gov.bc.ca>; Haslam, David GCPE:EX <David.Haslam@gov.bc.ca>; Brandt, Alissa GCPE:EX <Alissa.Brandt@gov.bc.ca>; Aaron, Sage GCPE:EX <Sage.Aaron@gov.bc.ca>; Zadravec, Don GCPE:EX <Don.Zadravec@gov.bc.ca>; Nelson, Tiffany GCPE:EX

<Tiffany.Nelson@gov.bc.ca>

Subject: RE: UPDATE - Flood Warning – Sumas (NEW), Coquihalla River - Flood Watch – Sea-to-Sky, North Shore, Howe Sound, Fraser Valley, Fraser Canyon, Chilliwack River - High Streamflow Advisory – South Coast - UPDATE: 2:45PM November 15, 2021

checking

From: Harris, Megan GCPE:EX <Megan.Harris@gov.bc.ca>

Sent: November 15, 2021 3:09 PM

To: McAndrews, Caroline GCPE:EX <Caroline.McAndrews@gov.bc.ca>; Ferrier, Jeffrey GCPE:EX <Jeffrey.Ferrier@gov.bc.ca>

Cc: Turner, Jordan GCPE:EX <Jordan.Turner@gov.bc.ca>; Smith, George PREM:EX <George.Smith@gov.bc.ca>; Hannah, Matt GCPE:EX <Matt.Hannah@gov.bc.ca>; Crebo, David GCPE:EX <David.Crebo@gov.bc.ca>; Haslam, David GCPE:EX <David.Haslam@gov.bc.ca>; Brandt, Alissa GCPE:EX <Alissa.Brandt@gov.bc.ca>; Aaron, Sage GCPE:EX <Sage.Aaron@gov.bc.ca>; Zdravec, Don GCPE:EX <Don.Zdravec@gov.bc.ca>; Nelson, Tiffany GCPE:EX <Tiffany.Nelson@gov.bc.ca>

Subject: Re: UPDATE - Flood Warning – Sumas (NEW), Coquihalla River - Flood Watch – Sea-to-Sky, North Shore, Howe Sound, Fraser Valley, Fraser Canyon, Chilliwack River - High Streamflow Advisory – South Coast - UPDATE: 2:45PM November 15, 2021

Importance: High

Caroline/Jeff, can you gather these details for us as quickly as possible? We have an avail at 4 and should have these details for then.

Thanks,
Megan

From: Jordan Turner <Jordan.Turner@gov.bc.ca>

Date: Monday, November 15, 2021 at 3:06 PM

To: "Harris, Megan GCPE:EX" <Megan.Harris@gov.bc.ca>, "Smith, George PREM:EX" <George.Smith@gov.bc.ca>, "Hannah, Matt GCPE:EX" <Matt.Hannah@gov.bc.ca>, "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>, "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca>, Alissa Brandt <Alissa.Brandt@gov.bc.ca>, "Aaron, Sage GCPE:EX" <Sage.Aaron@gov.bc.ca>, "Zdravec, Don GCPE:EX" <Don.Zdravec@gov.bc.ca>

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It would be quicker to get that from health and PSSG (Caroline).

It's all of merit so any that are there.

From: Harris, Megan GCPE:EX <Megan.Harris@gov.bc.ca>

Sent: November 15, 2021 2:47 PM

To: Turner, Jordan GCPE:EX <Jordan.Turner@gov.bc.ca>; Smith, George PREM:EX <George.Smith@gov.bc.ca>; Hannah, Matt GCPE:EX <Matt.Hannah@gov.bc.ca>; Crebo, David GCPE:EX <David.Crebo@gov.bc.ca>; Haslam, David GCPE:EX <David.Haslam@gov.bc.ca>; Brandt, Alissa GCPE:EX <Alissa.Brandt@gov.bc.ca>; Aaron, Sage GCPE:EX <Sage.Aaron@gov.bc.ca>; Zdravec, Don GCPE:EX <Don.Zdravec@gov.bc.ca>

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Thank you Jordan. I should have asked this about Merritt as well:

Within the evac areas, how many hospitals? How many correctional facilities?

Megan

From: Jordan Turner <Jordan.Turner@gov.bc.ca>

Date: Monday, November 15, 2021 at 2:44 PM

To: "Harris, Megan GCPE:EX" <Megan.Harris@gov.bc.ca>, "Smith, George PREM:EX" <George.Smith@gov.bc.ca>, "Hannah, Matt GCPE:EX" <Matt.Hannah@gov.bc.ca>, "Crebo, David GCPE:EX" <David.Crebo@gov.bc.ca>, "Haslam, David GCPE:EX" <David.Haslam@gov.bc.ca>, Alissa Brandt <Alissa.Brandt@gov.bc.ca>, "Aaron, Sage GCPE:EX" <Sage.Aaron@gov.bc.ca>, "Zadravec, Don GCPE:EX" <Don.Zadravec@gov.bc.ca>

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To: "Campbell, David FLNR:EX" <David.Campbell@gov.bc.ca>

Subject: UPDATE - Flood Warning – Sumas (NEW), Coquihalla River - Flood Watch – Sea-to-Sky, North Shore, Howe Sound, Fraser Valley, Fraser Canyon, Chilliwack River - High Streamflow Advisory – South Coast - UPDATE: 2:45PM November 15, 2021

Flood Warning – Sumas (NEW), Coquihalla River

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High Streamflow Advisory – South Coast

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Ministry of Forests, Lands, Natural Resource Operations and Rural Development

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Liu, Susan GCPE:EX

From: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
Sent: November 16, 2021 12:59 PM
To: Harris, Megan GCPE:EX; Muter, David FLNR:EX
Cc: Giles, Andrew FLNR:EX; Chapman, Connie FLNR:EX
Subject: RE: RFC notifications

Hi Megan

Advisories and Warnings are sent out to provincial government (including EMBC) and partners via RFC email distribution, and are posted publicly on the RFC website. EMBC (PREOC's) re-distribute to local governments, First Nations and other partners via their email distributions, and Flood Watches/Warnings are, to my understanding, posted publicly to the @emergencyinfobc twitter.

Thanks
Dave

From: Harris, Megan GCPE:EX <Megan.Harris@gov.bc.ca>
Sent: November 16, 2021 12:54 PM
To: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>; Muter, David FLNR:EX <David.Muter@gov.bc.ca>
Cc: Giles, Andrew FLNR:EX <Andrew.Giles@gov.bc.ca>; Chapman, Connie FLNR:EX <Connie.Chapman@gov.bc.ca>
Subject: Re: RFC notifications

Thank you for this David, it is VERY helpful. When alerts are posted to the site, do local governments get an alert? Or do they need to be monitoring that page?

Megan

From: "Campbell, David FLNR:EX" <David.Campbell@gov.bc.ca>
Date: Tuesday, November 16, 2021 at 11:33 AM
To: "Harris, Megan GCPE:EX" <Megan.Harris@gov.bc.ca>, "Muter, David FLNR:EX" <David.Muter@gov.bc.ca>
Cc: "Giles, Andrew FLNR:EX" <Andrew.Giles@gov.bc.ca>, "Chapman, Connie FLNR:EX" <Connie.Chapman@gov.bc.ca>
Subject: RE: RFC notifications

Hi Megan

Internally there was planning and monitoring going on behind the scenes at the River Forecast Centre throughout the week. We haven't done a full assessment of this yet, but preparations and communications included:

- internal communication with Environment Canada's atmospheric river analysis team on Nov 5th regarding atmospheric river potential over the Nov 11-15 period.
- monitoring weather forecasts and completing river forecast modelling throughout the week, including weekend coverage (publicly posted results)
- weather modelling through week was varied in terms of timing, location and intensity of forecast storm, and was split between multiple events (including heavy rainfall on Remembrance Day)
- note River Forecast Centre has responsibility for issuing advisories for flooding, and are the group that initiates these based on our team's assessment of weather forecasts, river conditions and forecast modelling

-communication was received from the US regarding flood potential on the Nooksack River with potential for overflow (5:18PM on November 13). Moderate flooding (not extreme) was predicted from the Northwest RFC at that time (e.g. not significantly impacting into BC). Communication from US at 2:18PM on Sunday reiterated moderate flood forecast. Further communication at 4:52PM on Sunday gave first indication of potential for more significant flooding on Nooksack

RFC staff are currently supporting compiling a storyline of the river forecasting that was completed in the days running up to and over the atmospheric river (I don't have a complete record reviewed at this point). General comments/observations:

- High Streamflow Advisory was issued at 12:00PM on Saturday Nov 13 for the South Coast and Vancouver Island in recognition of a significant atmospheric river and potential high flows. At this time internally there was not a recognition that the event was significantly different than the 3-5 other heavy rainstorm/atmospheric river events that have happened this fall season already. Modelled/interpreted flows were forecast in the 2-5 year range
- Upgraded to Flood Watch for the Englishman River at 9am on Sunday November 14
- River modelling results for Sunday were released around 9:30 AM. At that time still no significant indication of flood risk into the Coldwater/Tulameen Rivers. Significant flows forecasted in the South Coast/Fraser Valley/Vancouver Island
- Upgraded Flood Watch for Chilliwack at 1145AM Sunday
- Upgraded Flood Watch for Fraser Valley, Fraser Canyon, at 3PM Sunday
- Flood Warning issued for Tulameen and Coldwater at 530PM Sunday
- Flood Warning issued for Coquihalla at 6PM on Sunday
- Additional river modelling was completed Sunday evening (posted to website)
- Flood Warning issued for Cowichan River at 430AM on Monday
- Flood Warning added to Similkameen River at 5AM on Monday
- Upgraded to Flood Warning on Englishman River at 745AM on Monday
- Fraser Valley upgraded to Flood Warning at 8AM on Monday

In total the RFC has issued 16 advisories/warnings and updates starting from noon on Saturday, November 13

It will still take a bit to sort out specifics on forecasting. A general comment is that extreme rainfall events are extremely difficult to assess for potential impacts and there is a high degree of uncertainty which makes it difficult to provide accurate forecasting well in advance. Generally, once heavy rainfall rates have been observed, does the scale of the event present itself – for example south west BC has experienced several atmospheric river events this fall that have all had the potential for significant flooding which failed to materialize.

Please let me know if you need additional information

THanks
Dave

David Campbell, MSc, PGeo

Head, River Forecast Centre
Water Management Branch

BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development
Tel: 778 698-7339

www.gov.bc.ca/riverforecast

From: Harris, Megan GCPE:EX <Megan.Harris@gov.bc.ca>

Sent: November 16, 2021 10:40 AM

To: Muter, David FLNR:EX <David.Muter@gov.bc.ca>; Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>

Subject: RFC notifications

Hi David(s),

s.13

What I'm asking for is for information only and not for public consumption. Can you let me know when RFC received the first flag of rising waters that would be a concern, when the RFC sent their first notification to local governments, and how many notifications in total?

Is that possible? Is it possible to get this before noon today? We have a comms briefing at noon where this would be helpful.

Thanks,
Megan

Megan Harris

Assistant Deputy Minister

Communications Operations

Desk: 778.974.5965 | Cell: 250.893.3900

Liu, Susan GCPE:EX

From: Harris, Megan GCPE:EX <megan.harris@gov.bc.ca>
Sent: November 16, 2021 1:12 PM
To: Brandt, Alissa GCPE:EX; Hannah, Matt GCPE:EX; Smith, George PREM:EX; Turner, Jordan GCPE:EX; Wey, Melody GCPE:EX
Cc: Zadravec, Don GCPE:EX; Aaron, Sage GCPE:EX
Subject: RFC notifications

Hi team,

In regard to RFC notification.

- Advisories and Warnings are sent out to provincial government (including EMBC) and partners via RFC email distribution, and are posted publicly on the RFC website. EMBC (PREOC's) re-distribute to local governments, First Nations and other partners via their email distributions, and Flood Watches/Warnings are, to my understanding, posted publicly to the @emergencyinfobc twitter.

A current timeline of prep and activities included:

- Nov 5: internal communication with Environment Canada's atmospheric river analysis team on Nov 5, regarding atmospheric river potential over the Nov 11-15 period.
- monitoring weather forecasts and completing river forecast modelling throughout the week, including weekend coverage (publicly posted results)
- weather modelling through week was varied in terms of timing, location and intensity of forecast storm, and was split between multiple events (including heavy rainfall on Remembrance Day)
 - note RFC has responsibility for issuing advisories for flooding, and are the group that initiates these based on our team's assessment of weather forecasts, river conditions and forecast modelling
- 5:18PM on Sat November 13: communication was received from the US regarding flood potential on the Nooksack River with potential for overflow.
 - Moderate flooding (not extreme) was predicted from the Northwest RFC at that time (e.g. not significantly impacting into BC).
- 2:18PM on Sun November 14: Communication from US reiterated moderate flood forecast.
- 4:52PM on Sun November 14: Further communication gave first indication of potential for more significant flooding on Nooksack

RFC staff are currently supporting compiling a storyline of the river forecasting that was completed in the days running up to and over the atmospheric river.

General comments/observations:

- 12:00PM on Sat November 13: High Streamflow Advisory was issued for the South Coast and Vancouver Island in recognition of a significant atmospheric river and potential high flows.
 - At this time internally there was not a recognition that the event was significantly different than the 3-5 other heavy rainstorm/atmospheric river events that have happened this fall season already.
 - Modelled/interpreted flows were forecast in the 2-5 year range
- 9:00AM on Sun November 14: Upgraded to Flood Watch for the Englishman River
- 9:30AM on Sun November 14: River modelling results for Sunday were released.
 - At that time still no significant indication of flood risk into the Coldwater/Tulameen Rivers.
 - Significant flows forecasted in the South Coast/Fraser Valley/Vancouver Island
- 11:45AM on Sun November 14: Upgraded Flood Watch for Chilliwack
- 3:00PM on Sun November 14: Upgraded Flood Watch for Fraser Valley, Fraser Canyon
- 5:30PM on Sun November 14: Flood Warning issued for Tulameen and Coldwater

- 6:00PM on Sun November 14: Flood Warning issued for Coquihalla
 - Additional river modelling was completed Sunday evening (posted to website)
- 4:30AM on Mon November 15: Flood Warning issued for Cowichan River
- 5:00AM on Mon November 15: Flood Warning added to Similkameen River
- 7:45AM on Mon November 15: Upgraded to Flood Warning on Englishman River
- 8:00AM on Mon November 15: Fraser Valley upgraded to Flood Warning

In total the RFC has issued 16 advisories/warnings and updates starting from noon on Saturday, November 13

From: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
Sent: November 15, 2021 2:42 PM
To: Campbell, David FLNR:EX
Subject: UPDATE - Flood Warning – Sumas (NEW), Coquihalla River - Flood Watch – Sea-to-Sky, North Shore, Howe Sound, Fraser Valley, Fraser Canyon, Chilliwack River - High Streamflow Advisory – South Coast - UPDATE: 2:45PM November 15, 2021

Importance: High

Flood Warning – Sumas (NEW), Coquihalla River
Flood Watch – Sea-to-Sky, North Shore, Howe Sound, Fraser Valley, Fraser Canyon, Chilliwack River
High Streamflow Advisory – South Coast
UPDATE: 2:45PM November 15, 2021

The River Forecast Centre is **upgrading or maintaining a Flood Warning** for:

- **Sumas River and areas around the US Border (UPGRADED)**
- **Coquihalla River**

The River Forecast Centre is **maintaining a Flood Watch** for:

- **Sea-to-Sky**
- **Howe Sound**
- **North Shore Mountains**
- **Fraser Valley including surrounding tributaries**
- **Fraser Canyon tributaries, including tributaries around Hope**
- **Chilliwack River**

The River Forecast Centre is **maintaining a High Streamflow Advisory** for:

- **Sunshine Coast**
- **Metro Vancouver**

A significant atmospheric river has made landfall across southern coastal regions of British Columbia. Observed rainfall amounts since yesterday have been in the 100-140mm range through Howe Sound, North Shore Mountains, and Sunshine Coast; 90-160mm in the Fraser Valley – East, Fraser Canyon and areas around Hope and Harrison Lake.

Environment and Climate Change Canada have continued rainfall warnings in effect across the region. Rainfall is expected to taper off on Monday afternoon.

Rivers have risen rapidly from rainfall since yesterday. Current conditions include:

- Chilliwack River above Slesse Creek (08MH103) have reached 440 m³/s (between a 20-year and 50-year flow). Additional increases are possible through the day on Monday
- Chilliwack River at Vedder Crossing (08MH001) reached a high of approximately 490 m³/s overnight and has dropped through Monday morning. Additional rises are anticipated on Monday afternoon
- Coquihalla River above Alexandra Creek (08MF068) is flowing at approximately 550 m³/s (between a 10-year and 20-year flow) and has leveled over the past few hours. Additional rises are possible through the day on Monday
- Stawamus River at Highway 99 (08GA076) is flowing at 85 m³/s (between a 2-year and 5-year flow) and rising at approximately 15 m³/s per hour
- The Nooksack River at Cedarville (USGS gauge NRKW1) is currently at a record level of approximately 15 feet. The river has breached its banks and is anticipated to be spilling water into low-lying terrain around the Sumas River drainage

Rivers through the region are expected to remain high through Monday and may persist into the evening in areas. Lower reaches of rivers may reach peak levels later Monday or overnight. Low-lying areas and areas with poorer drainage will take longer to drain surface water.

The public is advised to stay clear of the fast-flowing rivers and potentially unstable riverbanks during the high-streamflow period.

Details of the COFFEE and CLEVER Model forecasts can be found at:

http://bcrfc.env.gov.bc.ca/fallfloods/map_coffee.html, and

http://bcrfc.env.gov.bc.ca/freshet/map_clever.html

The [River Forecast Centre](#) continues to monitor the conditions and will provide updates as conditions warrant.

BC River Forecast Centre

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

A **High Streamflow Advisory** means that river levels are rising or expected to rise rapidly, but that no major flooding is expected. Minor flooding in low-lying areas is possible.

A **Flood Watch** means that river levels are rising and will approach or may exceed bankfull. Flooding of areas adjacent to affected rivers may occur.

A **Flood Warning** means that river levels have exceeded bankfull or will exceed bankfull imminently, and that flooding of areas adjacent to the rivers affected will result.

From: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
Sent: November 16, 2021 7:47 AM
To: Campbell, David FLNR:EX
Subject: UPDATE - Flood Warning – Sumas; Flood Watch –Fraser Valley, Fraser Canyon; High Streamflow Advisory – Coquihalla River (DOWNGRADED), Chilliwack River (DOWNGRADED) - ISSUED: 7:45AM November 16, 2021

Importance: High

Flood Warning – Sumas
Flood Watch –Fraser Valley, Fraser Canyon
High Streamflow Advisory – Coquihalla River (DOWNGRADED), Chilliwack River (DOWNGRADED)
ENDED – Flood Watch Sea-to-Sky, North Shore, Howe Sound
ENDED - High Streamflow Advisory – South Coast

UPDATE: 7:45AM November 16, 2021

As of 7:45 am November 16th, the River Forecast Centre is maintaining the following advisories:

- **Sumas River and areas around the US Border – Flood Warning (MAINTAINED)**
- **Fraser Valley including surrounding tributaries – Flood Watch (MAINTAINED)**
- **Fraser Canyon tributaries, including tributaries around Hope – Flood Watch (MAINTAINED)**
- **Coquihalla River – High Streamflow Advisory (DOWNGRADED)**
- **Chilliwack River – High Streamflow Advisory (DOWNGRADED)**

The River Forecast Centre is **ending** a **Flood Watches and High Streamflow Advisories** for:

- **Sea-to-Sky - ENDED**
- **Howe Sound - ENDED**
- **North Shore Mountains - ENDED**
- **Sunshine Coast - ENDED**
- **Metro Vancouver - ENDED**

The atmospheric river that impacted southern British Columbia over the weekend and Monday has now moved out of the region. Rainfall tapered off on Monday afternoon, with limited precipitation observed over the past 12 hours. Throughout the region river levels have reached their peak levels and have receded overnight Monday and early on Tuesday. Flows and water levels remain high in lake and reservoir-fed

watersheds along the Fraser Valley, including the Allouette River and Harrison River. Low-lying terrain around the Sumas River drainage are also expected to have persistent high-water.

Generally dry conditions are expected over the next few days. River levels are expected to continue to recede on Tuesday and through the week.

The public is advised to stay clear of the fast-flowing rivers and potentially unstable riverbanks during the high-streamflow period.

Details of the COFFEE and CLEVER Model forecasts can be found at:

http://bcrfc.env.gov.bc.ca/fallfloods/map_coffee.html, and

http://bcrfc.env.gov.bc.ca/freshet/map_clever.html

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From: Campbell, David FLNR:EX <David.Campbell@gov.bc.ca>
Sent: November 16, 2021 6:12 AM
To: Campbell, David FLNR:EX
Subject: UPDATE: High Streamflow Advisory (DOWNGRADED) – Englishman, Cowichan, Koksilah, Chemainus; Flood Watch ENDED – Southern Vancouver Island; High Streamflow Advisory ENDED – Other Vancouver Island Regions UPDATE: 6:00 AM November 16, 2021

Importance: High

**High Streamflow Advisory (DOWNGRADED) – Englishman River, Cowichan River, Koksilah River, Chemainus River
ENDED - Flood Watch – Southern Vancouver Island
ENDED- High Streamflow Advisory – West Vancouver Island, East Vancouver Island, Central Vancouver Island
UPDATE: 6:00 AM November 16, 2021**

The River Forecast Centre is **downgrading to High Streamflow Advisories** for:

- **Chemainus River**
- **Englishman River**
- **Cowichan River**
- **Koksilah River**

The River Forecast Centre is **ending Flood Watches and High Streamflow Advisories** for:

- **South Vancouver Island (other tributaries)**
- **Central Vancouver Island including tributaries around Port Alberni**
- **West Vancouver Island**
- **East Vancouver Island**

Following a significant atmospheric river event, rainfall rates eased on Monday afternoon. River levels across Vancouver Island have reached their peak levels from this event, and rivers have receded overnight. River flows remain high in some areas. With drier weather on Tuesday, on-going recession of river levels is expected.

The public is advised to stay clear of the fast-flowing rivers and potentially unstable riverbanks during the high-streamflow period.

The [River Forecast Centre](#) continues to monitor the conditions and will provide updates as conditions warrant.

BC River Forecast Centre

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